Teaching and Assessing Habits of Mind

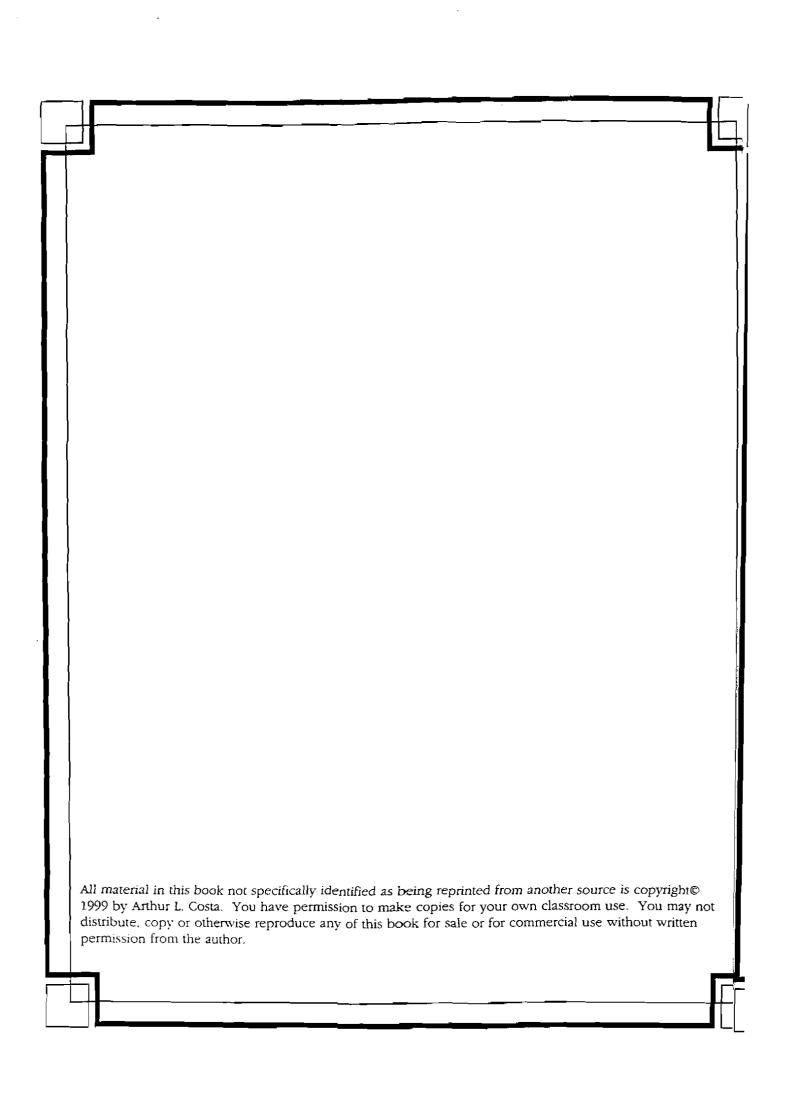
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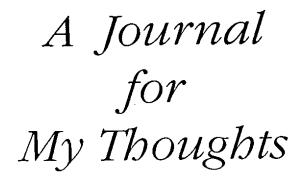
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The Sense of Wonder

They say all things are wondrous to a child; I say the sense of wonder grows with age. The child accepts the faceless voice that speaks through telephones, takes moon walk in his stride, nor doubts that man can fly in winged machines. He knows the sun will rise, that spring will come and seeds will bud and bloom, assuming that they bear their fruit for him. He takes for granted fugues and virtuosos, and counts cathedral spire no greater than his tower of blocks, while I watch, with awe and wonder, the flight of a bird, the birth of a child, the growth of a tree, the faith of man that conquers pain with hope and charity. Each day brings new possibilities. Each day I see further into the universe, deeper in to the heart. Each day I discover new relationships, between the flower and the child, between the present and the past, between the whole and the part, between myself and others. The child asks why and then forgets to listen. The adult listens without knowing why.

Genevieve Smith Whitford

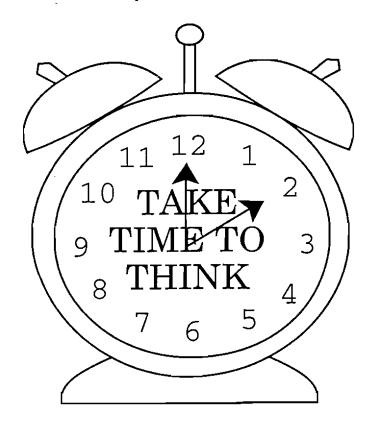


Property of:

Notes To The Thinker

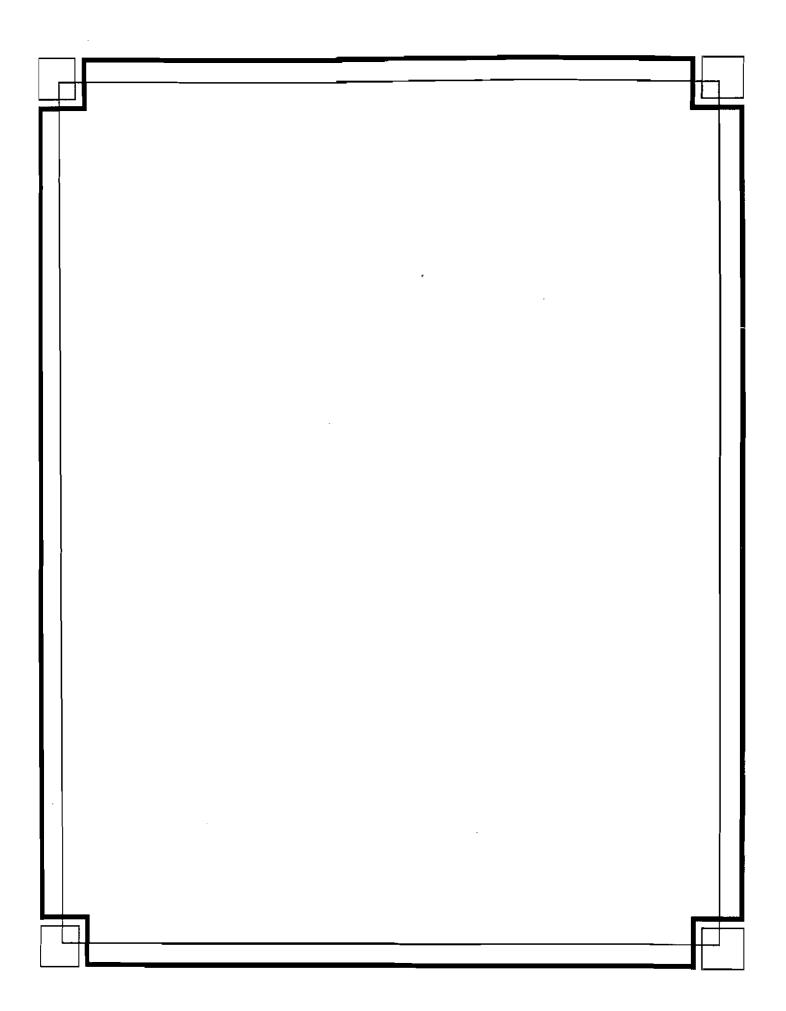
This thinking log is designed for you to reflect about the things you're learning in this workshop. Following a discussion, an activity, or a reading, make an entry about your ideas on the topic.

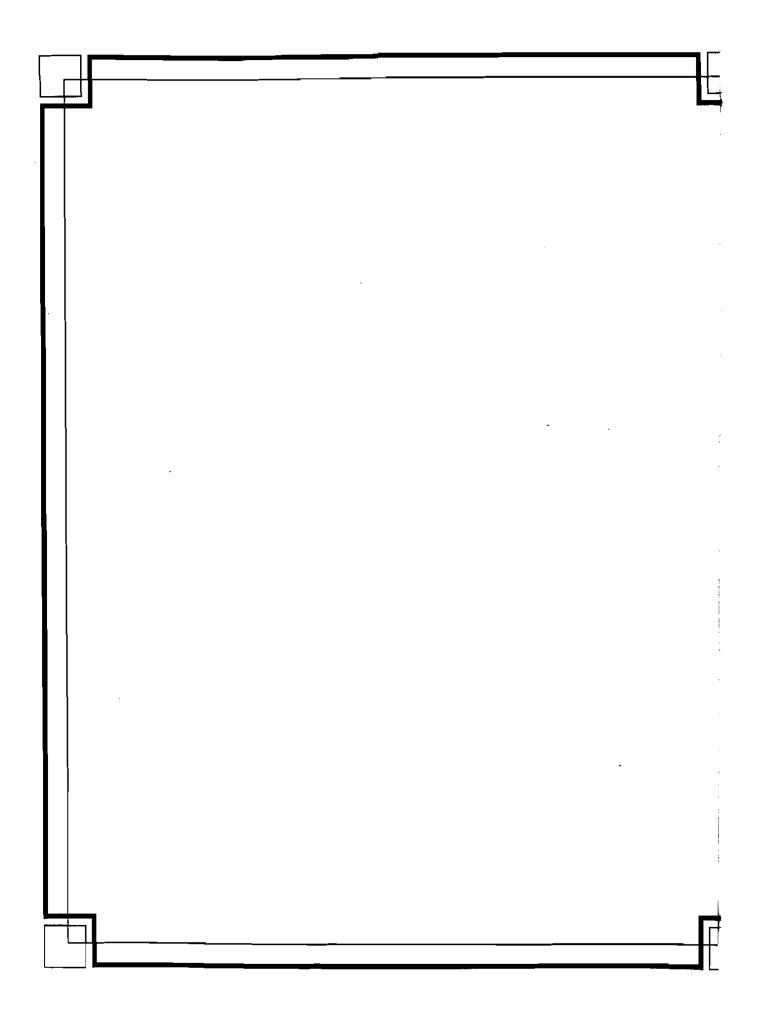
You may wish to make a mind map, a flow chart, an outline or a diagram.

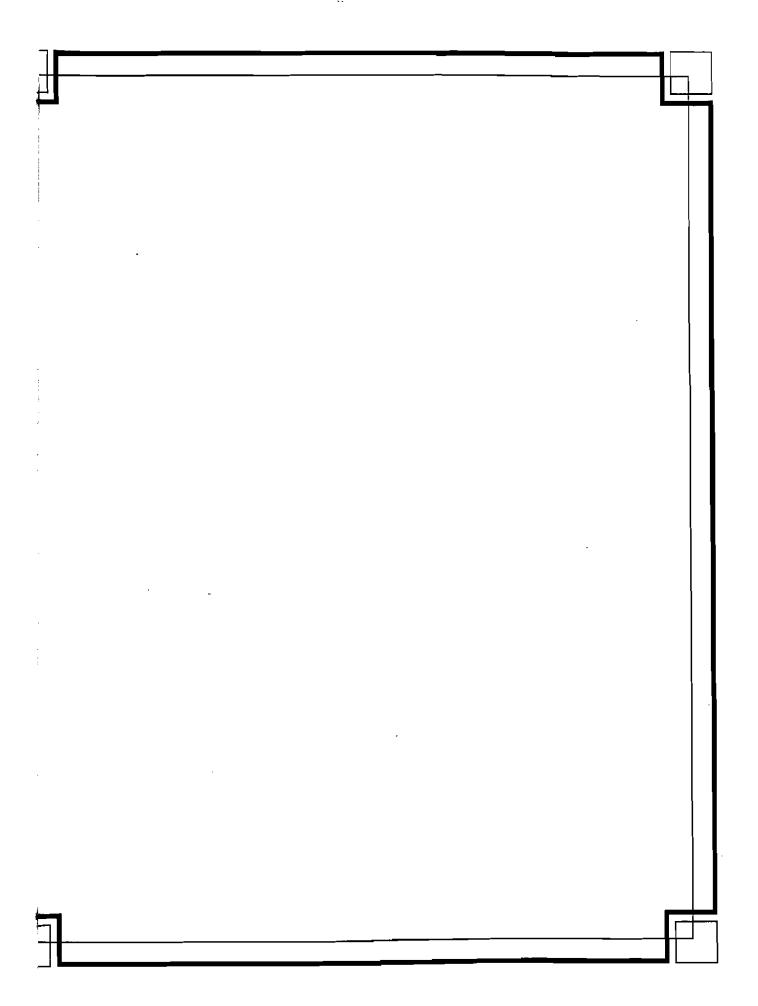


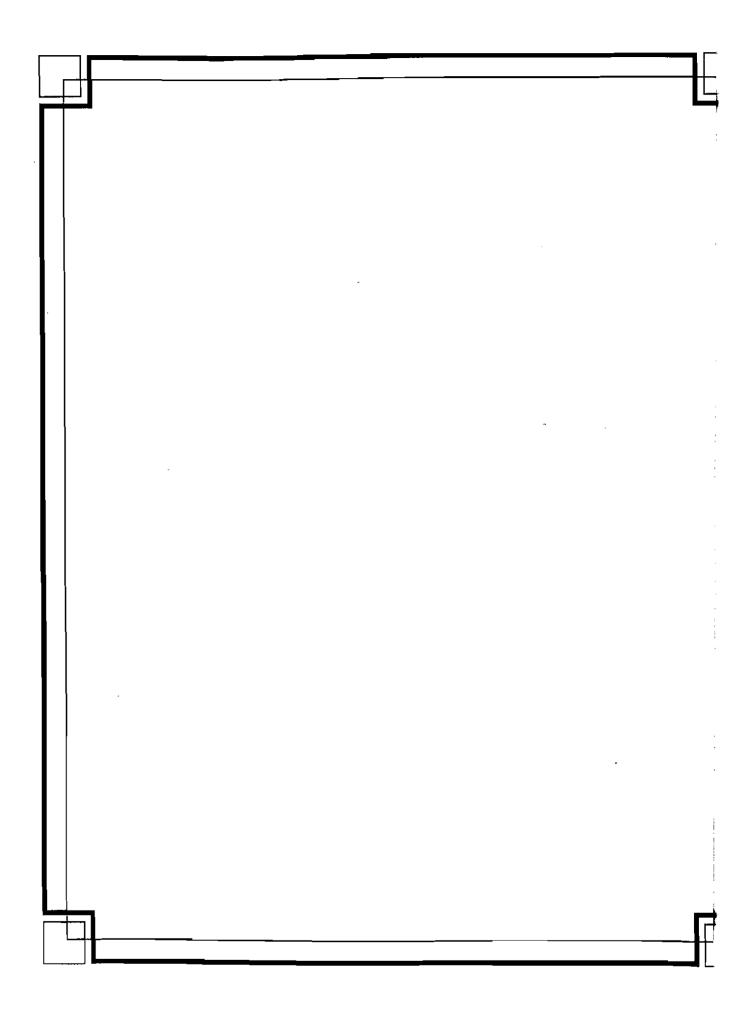
Some starters might include:

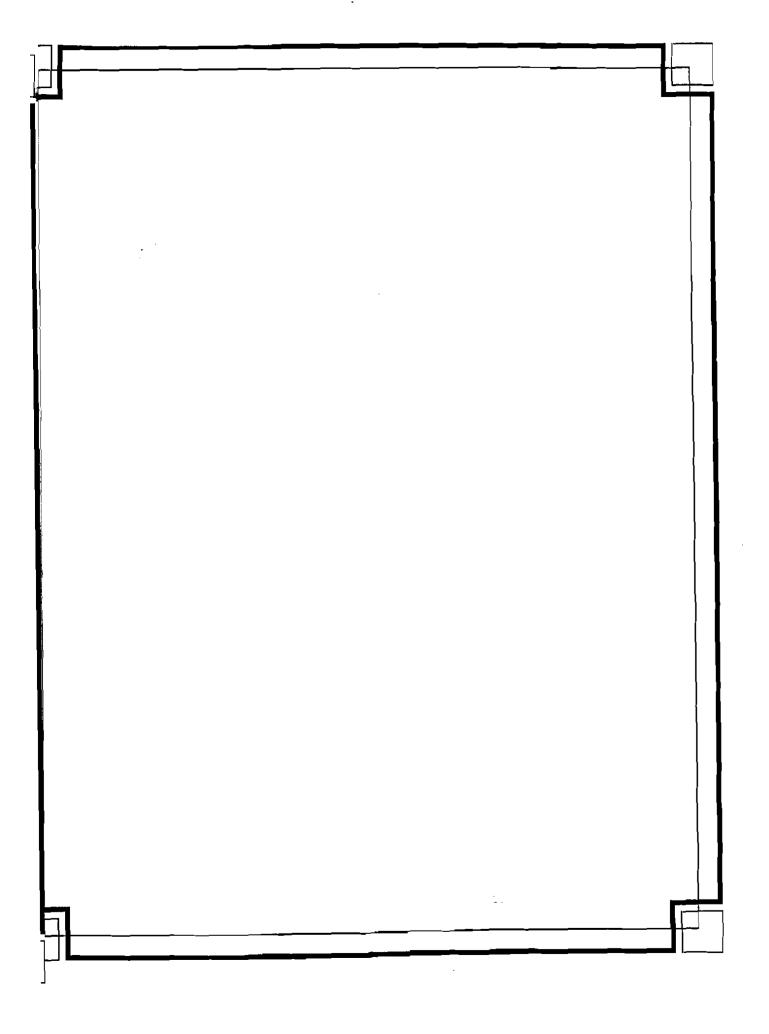
- "What puzzles me is. . . ."
- "A question I have is. . . . "
- "A way to use this idea is. . . ."
- "Another point of view is. . . ."
- "This is similar to what I know about. . .."
- "The big ideas seem to be. . . . "
- "I'm confused about. . . ."
- "I'd like to talk more about. . . . "
- "I've got it! It means. . . ."











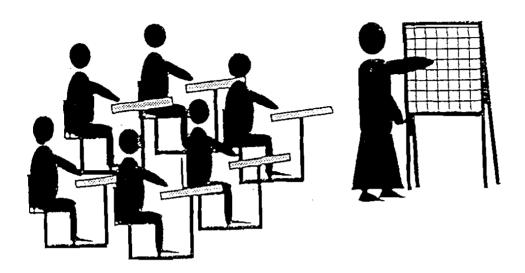
Part I Exploring Habits of Mind

Why Teach Habits of Mind?

What Are Habits of Mind?

What Are Some Examples of Habits of Mind?

10-2 Structure



The 10-2 structure was developed by noted science educator, Dr. Mary Budd Rowe, to allow students time to process information and concepts during large group instruction.

In the 10-2 structure, the instructor lectures or presents material for ten minutes then stops for two minutes. During the "pause," student teams share their notes, fill in gaps in their own notes, and help each other clarify concepts. Students usually are not allowed to ask the instructor questions during these pauses. This builds interdependence among teams, causing students to rely on one another for help instead of assuming the teacher will bail them out.

Unresolved questions and issues are reserved for the last five minutes of the period. During this time, students and teacher interact to sort out misconceptions and gaps in data or logic.

The time structures can be varied, depending on student dynamics and the complexity of the material being presented.

This structure works well with audio-visual presentations. Materials need to be carefully previewed when this is done, to identify logical pausing points.

Experimental groups that followed the 10-2 pattern performed better than control groups on more complex test items, had greater delayed retention of material, and had more positive attitudes toward the subject and instructional method. The quality of student questions and in-class notes also improved.

References:

Rowe, Mary Budd. Wait Time: Slowing Down May Be a Way of Speeding Up! Journal of Teacher Education, Jan.-Feb. 1986, 43-49.

Rowe, Mary Budd. Getting Chemistry off the Killer Course List. Journal of Chemical Education, Vol. 60, Number 11, Nov. 1983, 954-956.

Educating Students for Their Future

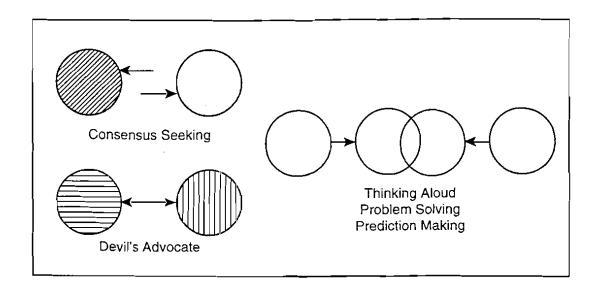
DISPLAYED METACOGNITION

What are implications for education today?

Think, (Write), Pair, Share

To capitalize on the use of wait time to promote student thinking, students are directed to *think* about a topic, recall a piece of information, or respond to a question. They are then asked to turn to a partner, usually a student who sits close by and discuss their responses. As partners, students verify, or refine their thinking and can be asked to generate additional information together.

For example, the teacher might say "Think of one example of how temperature changes affect liquids. Pair with the student to your right. Share your responses and generate two more examples together." (Writing a response before sharing is an option.)



Students can also be directed on *how* to think and work in their pairs. For example, teachers may cue students to seek consensus, engage in problem solving, make a prediction, or assume the role of "devil's advocate."

Cuing students to Listen; Think; Pair; Share is important to ensure wait and think time.

Adapted from Jay McTighe & Frank Lyman (1988)

What do you expect students to do inside their heads when you say, "Think about it", "Think hard", or "Put on your thinking caps"?

The Search for Intelligent Life: What Is It About Your Students that Makes You Think They Need to Learn How to Think?

What do you hear them saying?	
What do you see them doing?	
What are they feeling?	
How would you like them to be?	

What Are Habits Of Mind?

A "Habit of Mind" means having a disposition toward behaving intelligently when confronted with problems, the answers to which are not immediately known. When humans experience dichotomies, are confused by dilemmas, or come face to face with uncertainties—our most effective actions require drawing forth certain patterns of intellectual behavior. When we draw upon these intellectual resources, the results that are produced through are more powerful, of higher quality and greater significance than if we fail to employ patterns of intellectual behaviors.

Employing "Habits of Mind" requires a composite of many skills, attitudes, cues, past experiences and proclivities. It means that we value one pattern of thinking over another and therefore it implies choice-making about which patterns should be employed at this time. It includes a sensitivity to the contextual cues in a situation which signal this as an appropriate time and circumstance in which the employment of this pattern would be useful. It requires a level of skillfulness to employ, carry through the behaviors effectively over time. It suggests that as a result of each experience in which these behaviors were employed, the effects of their use are reflected upon, evaluated, modified and carried forth to future applications.

Habits of Mind Include:

Value: Choosing to employ a pattern of behaviors rather than some other

unproductive patterns.

Inclination: Feeling the tendency toward employing a pattern of intellectual

behaviors.

Sensitivity: Being alert to situations and aware of opportunities in which it would

be appropriate to employ the pattern of intellectual behaviors.

Capability: Possessing the basic skills and capacities to carry through with and

sustain the behaviors.

Policy: Making it a policy to promote and incorporate the patterns of intel-

lectual behaviors into actions, decisions and resolutions of problem-

atic situations.

Commitment: Constantly reflecting on and striving to improve performance of the

pattern of intellectual behaviors.

What Human Beings Do When They Behave Intelligently And How They Can Become More So

In teaching for thinking, we are not only interested in how many answers students know but also in knowing how to behave when they DON'T know. Intelligent behavior is performed in response to questions and problems the answers to which are NOT immediately known. We are interested in observing how students produce knowledge rather than how they merely reproduce knowledge. The critical attribute of intelligent human beings is not only having information, but knowing how to act on it.

By definition, a problem is any stimulus, question, task, phenomenon, or discrepancy, the explanation for which is not immediately known. Thus, we are interested in focusing on student performance under those challenging conditions that demand strategic reasoning, insightfulness, perseverance, creativity, and craftsmanship to resolve a complex problem.

One way to gather evidence of performance and growth in intelligent behavior is to engage in kid-watching. As students interact with real-life, day-to-day problems, in school, at home, on the playground, alone and with friends, we can collect anecdotes and examples of written and visual expressions that indicate students' increasingly voluntary and spontaneous performance of intelligent behavior.

What behaviors are indicative of the efficient, effective problem solver? Just what do human beings do when they behave intelligently? Research in effective thinking and intelligent behavior by Feuerstein (1980), Glatthorn and Baron (1985), Sternberg (1985), Perkins (1985), and Ennis (1985) indicates that there are some identifiable characteristics of effective thinkers. These are not necessarily scientists, artists, mathematicians or the wealthy who demonstrate these behaviors. These characteristics have been identified in successful mechanics, teachers, entrepreneurs, salespeople, parents—people in all walks of life.

Following are a dozen suggested characteristics of intelligent behaviors that teachers and parents can teach and observe. This list is not meant to be complete. As we think and study more about intelligent behavior we will discover additional indicators of growth in student's thinking abilities.

1. Persistence: Persevering When The Solution To A Problem Is Not Readily Apparent

Students often give up in despair when the answer to a problem is not immediately known. They often crumple their papers and throw them away saying, "I can't do this," "It's too hard," or, they write down any answer to get the task over with as quickly as possible. They lack the ability to analyze a problem, to develop a system, structure, or strategy of problem attack.

Students demonstrate growth in thinking abilities by increasing their use of alternative strategies of problem-solving. They collect evidence to indicate their problem-solving strategy is working, and if one strategy doesn't work, they know how to back up and try another. They realize that their theory or idea must be rejected and another employed. They have systematic methods of analyzing a problem, knowing ways to begin, knowing what steps must be performed, what data need to be generated or collected. This is what is meant by perseverance.

2. Managing Impulsivity

Often students blurt the first answer that comes to mind. Sometimes they shout out an answer, start to work without fully understanding the directions, lack an organized plan or strategy for approaching a problem or make immediate value judgments about an idea—criticizing or praising it—before fully understanding it. They may take the first suggestion given or operate on the first idea that comes to mind rather than considering alternatives and consequences of several possible directions.

As students become less impulsive, we can observe them clarifying goals, planning a strategy for solving a problem, exploring alternative problem solving strategies, and considering consequences of actions before they begin. They will decrease trial and error, they will gather much information before they begin a task, take time to reflect on an answer before giving it, make sure they understand directions before beginning a task, and listen to alternative points of view.

3. Listening To Others—With Understanding And Empathy

Some psychologists believe that the ability to listen to another person, to empathize with, and to understand their point of view is one of the highest forms of intelligent behavior. Being able to paraphrase another person's ideas, detecting indicators (cues) of their feelings or emotional states in their oral and body language (empathy), accurately expressing another person's concepts, emotions and problems—all are indications of listening behavior (Piaget called it "overcoming ego-centrism").

Some children ridicule, laugh at, or put down other students' ideas. They are unable to build upon, consider the merits of, or operate on another person's ideas. We will know students are getting better at their listening skills when they can attend to another person, demonstrate an understanding of and empathize with that idea or feeling by paraphrasing it accurately, building upon it, clarifying it, or giving an example of it. When students can say, "Peter's idea is...., but Sarah's idea is...." or "Let's try Shelley's idea and see if it works," or "Let me show you how Gina solved the problem, then I'll show you how I solved it," then we'll know students are listening to and internalizing others' ideas and feelings.

4. Flexibility In Thinking

Some students have difficulty in considering alternative points of view or dealing with several sources of information simultaneously. THEIR way to solve a problem seems to be the ONLY way. They may decide that THEIR answer is the only correct answer. They are more interested in knowing whether their answer is correct, rather than being challenged by the process of finding the answer. They are unable to sustain a process of problem-solving over time and therefore they avoid ambiguous situations. They have a need for certainty rather than an inclination to doubt. Their minds are made up and they resist being influenced by data or reasoning which contradicts their beliefs.

As students become more flexible in their thinking they can be heard considering, expressing, or paraphrasing another person's point of view or rationale. They can state several ways of solving the same problem and can evaluate the merits and consequences of two or more alternate courses of action. When making decisions they will often use such words as "however," "on the other hand," or, "If you look at it another way...." While increasingly they develop a set of moral principles to govern their own behavior, they are also prone to change their mind in light of convincing data, argument or rationale. Working in groups they often resolve conflicts through compromise, express a willingness to experiment with another person's idea, and strive for consensus.

5. Metacognition: Awareness Of Our Own Thinking

Some people are unaware of their own thinking processes while they are thinking. They lack a plan of action to solve a problem before they begin; they are unable to determine if that plan is working or if it should be discarded and another plan employed. They seldom evaluate their strategy to determine it's efficacy or if there could have been a more efficient approach.

When asked, "How are you solving that problem?" they may reply "I don't know, I'm just doing it." They are unable to describe the steps and sequences they are using before, during, and after the act of problem solving. They cannot transform into words the visual images held in their mind. They seldom plan for, reflect on, and evaluate the quality of their own thinking skills and strategies.

We can determine if students are becoming more aware of their own thinking if they are able to describe what goes on in their head when they think. When asked, they can describe what they know and what they need to know. They can describe what data are lacking and their plans for producing those data. They can describe their plan of action before they begin to solve a problem. They can list the

steps and tell where they are in the sequence of a problem solving strategy; they can trace the pathways and blind alleys they took on the road to a problem solution.

They can apply cognitive vocabulary correctly as they describe their thinking skills and strategies. We will hear students using such terms and phrases as: "I have an hypothesis...," "My theory is...," "When I compare these points of view...," "By way of summary...," "What I need to know is...," or "The assumptions on which I am working are...."

6. Checking For Accuracy And Precision

Students are often careless when turning in their completed work. When asked if they have checked over their papers, they might say, "No, I'm done." They seem to feel little inclination to reflect upon the accuracy of their work, to contemplate their precision or to take pride in their accomplishments. Speed of getting the assignment over with surpasses their desire for craftsmanship.

We can observe students growing in their desire for accuracy as they take time to check over their tests and papers, as they grow more conscientious about precision, clarity and perfection. They go back over the rules by which they were to abide, the models and visions they were to follow, and the criteria they were to employ to confirm that their finished product matches exactly.

7. Questioning And Problem Posing

One of the distinguishing characteristics between humans and other forms of life is our inclination and ability to FIND problems to solve. Yet students depend on others to solve problems, to find answers, and to ask questions for them. They sometimes are reluctant to ask questions for fear of displaying ignorance.

Over time, we want to observe a shift from the teacher asking questions and posing problems toward the students asking questions and finding problems for themselves. Furthermore, the types of questions students ask should change and become more specific and profound. For example: requests for data to support others' conclusions and assumptions—such questions as, "What evidence do you have....?" or "How do you know that's true?" will increasingly be heard. We will hear them pose more hypothetical problems characterized by "iffy"-type questions: "What do you think would happen IF.....?" or "IF that is true, then what might happen if....?"

We want students to be alert to and recognize discrepancies and phenomena in their environment and to inquire into their causes: "Why do cats purr?" "How high can birds fly?" "Why does the hair on my head grow so fast, but the hair on my arms and legs grows so slowly? "What would happen if we put the saltwater fish in a fresh water aquarium?" "What are some alternative solutions to international conflicts other than wars?"

8. Drawing On Past Knowledge And Applying It To New Situations

Probably the ultimate goal of teaching is for the students to apply school-learned knowledge to real-life situations and to content areas beyond that in which it was learned. Yet we find that while students can pass mastery tests in mathematics, for example, they often have difficulty deciding whether to buy six items for \$2.39 or seven for \$2.86 at the supermarket.

Too often students begin each new task as if it were being approached for the very first time. Teachers are often dismayed when they invite students to recall how they solved a similar problem previously and students don't remember. It's like they never heard of it before, even though they had the same type of problem very recently. It is as if each experience is encapsulated into a separate episode that has no relationship to anything that came before or that comes afterward.

Intelligent human beings learn from experience. They are able to abstract meaning from one experience, carry it forth, and apply it in a new situation. Students can be observed growing in this ability as they are heard to say, "This reminds me of...." or "This is just like the time when I..." They explain what they are doing now in terms of analogies with or references to previous experiences. They

call upon their store of knowledge and experience as sources of data to support, theories to explain, or processes to solve each new challenge.

When parents and other teachers report how they have observed students thinking at home or in other classes, we know students are transferring. For example: parents report increased interest in school, more planning in their child's use of time and finances, in increased organization of their room, their books and their belongings at home. (During a slumber party a parent reported that his daughter invited her friends to "BRAINSTORM" which activities and games they preferred. This came after she learned brainstorming techniques in school.)

We might hear, for example, the social studies teacher describe how a student used a problem solving strategy which was originally learned in the science class. We might hear the wood shop teacher tell how a student volunteered a plan to measure accurately before cutting a piece of wood: "Measure twice and cut once"; an axiom learned in the algebra class.

9. Precision Of Language And Thought

Some humans' language is confused, vague, and imprecise. They describe attributes of objects or events with such non-specific words as "weird," "nice," or "O.K." Names of objects are such as "stuff," "junk," and "things." Their sentences are punctuated with "ya'know," "er," and "uh."

We might hear the use of vague nouns, and pronouns: "THEY told me to." "EVERYBODY has one." "TEACHERS don't understand me." Verbs are often nonspecific: "Lets DO it." Comparators go unqualified: "This soda is BETTER; I like it MORE."

As students' language becomes more precise, we will hear them using more descriptive words to distinguish attributes. They will use more correct names and when universal labels are unavailable, they will use analogies such as "crescent shaped," or "like a bow tie." They will spontaneously provide criteria for their value judgments describing why they think one product is BETTER than another. They will speak in complete sentences, voluntarily provide supportive evidence for their ideas, elaborate, clarify, and operationally define their terminology. Their oral and written expressions will become more concise, descriptive, and coherent.

10. Using All The Senses

All information gets into the brain through the sensory pathways: visual, tactile, kinesthetic, auditory, olfactory, gustatory. Most language, cultural, and physical learning is derived from the environment by observing or intaking through the senses.

To know a wine it must be drunk; to know a role it must be acted; to know a game it must be played: to know a dance it must be moved; to know a goal it must be envisioned. Those whose sensory pathways are open, alert, and acute absorb more information from the environment than those whose pathways are withered, immune, and oblivious to sensory stimuli.

We can observe students using all the senses as they touch, feel, and rub various objects in their environment. (Young children may put things in their mouths). They will request a story or rhyme be read again and again. They will act out roles and "be" the thing: a father, a flatbed or a fish. "Let me see, let me see." "I want to feel it." "Let me try it." "Let me hold it...," they will plead.

As they mature, we can observe that they conceive and express many ways of solving problems by use of the senses: making observations, gathering data, experimenting, manipulating, scrutinizing, identifying variables, interviewing, breaking problems down into components, visualizing, role playing, illustrating, or model building. Their expressions will use a range and variety of sensory words: "I FEEI like....." "It TOUCHES me." "I HEAR your idea." "It leaves a bad TASTE in my mouth." "Got the PICTURE?"

11. Ingenuity, Originality, Insightfulness: Creativity

"I can't draw," "I was never very good at art," "I can't sing a note." Some people think creative humans are just born that way; that it's in their genes and chromosomes. Increasingly we are coming to realize that all human beings have the capacity to generate novel, original, clever or ingenious products, solutions, and techniques—if that capacity is developed.

Intelligent human beings are creative. They often try to conceive problem solutions differently, examining alternative possibilities from many angles (Lateral thinking). They tend to project themselves into different roles using analogies, starting with a vision and working backward, imagining they are the object being considered. Creative people take risks—they "live on the edge of their competence," testing their limits (Perkins 1985). They are intrinsically rather than extrinsically motivated, working on the task because of the aesthetic challenge rather than the material rewards. Creative people are open to criticism. They hold up their products for others to judge and seek feedback in an ever-increasing effort to refine their technique. They are uneasy with the status-quo. They constantly strive for greater fluency, elaboration, novelty, parsimony, simplicity, craftsmanship, perfection, beauty, harmony, and balance.

12. Wonderment, Inquisitiveness, Curiosity, And The Enjoyment 0f Problem Solving—A Sense Of Efficacy As A Thinker

Some children and adults avoid problems. We may hear them saying, "These types of thinking games turn me off," "I was never good at these brain teasers," or "Go ask your father, he's the brain in this family." While attending high school or college, many people never enrolled in another math class or other "hard" academic subject after they didn't have to. Many people perceive thinking as hard work and therefore recoil from situations which demand "too much" of it.

We want students to move not only from an "I CAN" attitude, but also towards an "I ENJOY" feeling. We want them to seek problems to solve for themselves and to submit to others, to make up problems to solve on their own and request them from others. Furthermore, we want students to solve problems with increasing independence—without parents' or teachers' help or intervention. Such statements as, "Don't tell me the answer, I can figure it out by myself," will indicate growing autonomy. We will see them voluntarily continuing to learn throughout a lifetime.

We will observe them communing with the world around them. They will reflect on the changing formations of a cloud; be charmed by the opening of a bud; sense the logical simplicity of mathematical order. They will find beauty in a sunset, intrigue in the geometrics of a spider web, and exhilaration in the iridescence of a hummingbird's wings. They will see the congruity and intricacies in the derivation of a mathematical formula, recognize the orderliness and adroitness of a chemical change, and commune with the serenity of a distant constellation.

We will see them deriving more pleasure from thinking as they advance to higher grade levels. Their curiosity will become stronger as the problems they encounter become more complex. Their environment will attract their inquiry as their senses capture the rhythm, patterns, shapes, colors, and harmonies of the universe. They will display cognizant and compassionate behavior toward other life forms as they are able to understand the need for protecting their environment; respecting the roles and values of other human beings; and perceiving the delicate worth, uniqueness, and relationships of everything and everyone they encounter. Wonderment, awesomeness, passion: These are the prerequisites for intelligent behavior.

In Summary

This list of intelligent behaviors and the conditions that promote them is not meant to be complete. There are many other indicators: displaying a sense of humor; ethical/moral reasoning, and so forth.

The intent of this article is to clarify the goals of cognitive education, to become more alert to the indicators of intelligent behavior, to realize those conditions in which these behaviors will flourish.

to know how to observe them in problem situations in the everyday life of the classroom, and to know what we must model in our own behavior.

As educators we have great responsibility for instilling these intelligent behaviors in our students. We must teach them to value intelligent, creative, and rational action. To do so, however, we must provide the conditions for the behaviors of intelligence to be practiced and demonstrated. We must believe that ALL students can continue to grow in their ability to behave more intelligently. We must have faith that all humans can become increasingly more gifted than they are presently capable of demonstrating. Finally, we must set an example by becoming models of these intelligent behaviors ourselves.

References

- Ennis, R. (1985). Goals for a critical thinking curriculum. In A. L. Costa (Ed.), *Developing Minds: A Resource Book For Teaching Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development, 1985.
- Feuerstein, R.; Rand, Y.; Hoffman, M.; & Miller, R. (1980). Instrumental Enrichment: An Intervention Program for Cognitive Modifiability. Baltimore: University Park Press.
- Glatthorn, A. & Baron, J. (1985). The good thinker. In A. L. Costa (Ed.), *Developing Minds: A Resource Book For Teaching Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Goleman, D. (1995) Emotional Intelligence: Why it can matter more than I. Q. New York: Bantam Books.
- Perkins, D. (1985). What creative thinking is. In A. L. Costa (Ed.), *Developing Minds: A Resource Book For Teaching Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Perkins, D. (1995) Outsmarting I. Q.: The Emerging Science of Learnable Intelligence. New York: The Free Press.
- Sternberg, R. (1984). Beyond I.Q.: A Triarchic Theory of Human Intelligence. New York: Cambridge University Press.
- Sternberg, R. (1983) How Can We Teach Intelligence? Philadelphia, PA: Research for Better Schools

Habits Of Mind

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1. Persistence	2. Managing impulsivity
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3. Listening with understanding and empathy	4. Flexibility in Thinking
J. Listering with understanding and empatry	1. Heriology in Triming
5. Metacognition	6. Checking for accuracy and precision
	8. Drawing on Past Knowledge and Applying it to
7. Questioning and Problem Posing	New and Novel Situations.
9. Precision of Language and Thought	10. Using all the Senses
11 Inganuity Creaticing 17	12 Williams and Covincia
11. Ingenuity, Creativity and Innovation	12. Wonderment and Curiosity

Part II Cultivating Habits of Mind

What Classroom, School, and Home Conditions are Necessary to Cultivate Habits of Mind?

How Can We Signal Habits of Mind as Goals of Learning?

What Characterizes a School That is a Home for the Mind?

Creating Supportive Environments

What type of environment can be created in which children learn and develop these Habits of Mind? What follows is a brief summary of those school and classroom conditions in which these intelligent behavior become habituated. They are elaborated in the subsequent parts of this syllabus.

Having Faith That All Students Can Think

For many years we thought that thinking skills programs were intended to challenge the intellectually gifted. Indeed, some thought that any child whose I.Q. fell below a certain static score forever rendered him or her doomed to remedial or compensatory drill and practice.

Much research with hydrocephalic, Down's syndrome, senile and brain-damaged persons demonstrates that over time and with proper intervention, they can continue to make amazing growth in intelligent behavior. Until recently, we would have given them up as hopeless. Indeed teachers CAN grow intelligence.

Students Must Realize Thinking As A Goal

Students often expend great amounts of energy trying to figure out their teacher's intentions. Because some students come from homes, previous teachers, or other schools where intelligent behavior was not valued, they often are dismayed by and resistant to the teacher's invitations to think.

We must convey to students that the goal of their education is intelligent behavior—that the responsibility for thinking is theirs, that it is desirable to have more than one solution, that it is commendable when they take time to plan and reflect on an answer rather than responding rapidly or impulsively, and that it is desirable to change an answer with additional information.

Students realize it as a goal when thinking becomes the content. Time should be taken to teach thinking skills and strategies directly. Discussion of students' problem solving processes should be conducted, inviting them to share their metacognition, to reveal their intentions and plans for solving a problem.

Challenging Problem Solving Opportunities Must Be Presented

Teachers questions can stimulate the brain to perform "higher order" thinking skills, problem solving and imagination. They will also want to provide perplexing situations, problems to solve, discrepancies, and intriguing phenomena to students. Day-to-day, real life problems are the best way to practice problem solving: What to take on the field trip, how to return the playground equipment more efficiently, how to make an equitable distribution of limited classroom supplies, etc. Teachers can engage students in the real problems facing them. ("Can someone help me figure out these directions? They're confusing to me").

Creating A Safe, Risk-Taking Environment

Learning to think, as does any form of learning, requires experimentation. If children believe the products of their thought processes will be criticized or evaluated, they will probably learn to refrain from thinking. Teachers' value judgments signal conformity rather than diversity. Listening to, paraphrasing, clarifying, translating, employing student's ideas indicates that they have the power to produce meaningful ideas in the minds of others.

Giving It Time

Unlike many other educational innovations and experiments, educators are viewing the infusion of thinking skills as a three to five year process. They are realizing that such a change cannot be a quick-fix. Research seems to indicate that it takes about two years of well defined instruction with qualified

teachers and carefully constructed curriculum materials before a significant and enduring change in students' intelligent behavior is observed.

We know that the amount of time on task affects student learning. This relationship is as true for academic achievement as it is for acquiring thinking skills. As thinking becomes a goal of instruction, teachers and administrators place greater value on allocating classroom time for learning activities intended to stimulate, practice, and discuss cognitive processes.

Creating A Rich, Responsive Environment

Many resources must be easily available to manipulate, experience, and observe. First and second-hand data sources—books, films, computers, knowledgeable people, and field trips will be available for students to gather data, use as a source of theories and to test ideas.

Attending To Learners' Developmental Readiness And Sequence

The nature of thinking capabilities and the sequence in which they appear have been well established in human beings. Too often, however, educators disregard these theories and present learning activities before students are developmentally ready. The environment for learning intelligent behavior will introduce learnings in a sequence that matches children's development.

One of the chief causes for failure in formal education is that we begin with language rather than beginning with real and material action. Learning progresses through stages of increasing complexity (the number of ideas and factors we can think about), and increasing abstraction, (the greater distance from the real—from the concrete object, to a pictorial representation of the object, to a symbol which stands for the object, to a spoken word which stands for the symbol). Curriculum and instruction can be more meaningful if they are sequenced in a manner consistent with these stages of development.

Modeling

With the understanding that imitation and emulation are the most basic forms of learning, teachers, parents, and administrators are realizing the importance of their own display of desirable intelligent behaviors in the presence of learners. Thus, in the day-to-day events and when problems arise in schools, classrooms, and homes, students must see adults employing the same types of intelligent behaviors listed above. Without this consistency, there is likely to be a credibility gap. As Emerson is often quoted, "What you do speaks so loudly, I can't hear what you say."

Part II-2

An Institution's Values Are Often Expressed or Communicated Through Its Slogans, Logos, Mottoes and/or Heroes:



E PLURIBUS UNUM





What is your school's motto? Slogan? Logo? Hero/Heroine?

Compose a motto, slogan and logo and choose a hero to signal your school's/district's/community's/classroom's value of thinking as a goal of education.

Rate Your Intelligent Behavior

Now that you know what intelligent behavior is, read the following questions and rate yourself on a scale of 1-10. Give evidence to support your rating. Be honest but don't be too hard on yourself. Intelligent behaviors can be learned and practiced. The more you practice the more intelligent YOU WILL become.

1. I am a persistent person. If I don't succeed on the first try, I keep trying until I do succeed.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

2. I manage my impulses and am willing to delay gratification in order to attain long-term goals.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

3. I listen to others with empathy and understanding.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

4. I am a flexible thnker and seek new ways of looking at things.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

5. I try to be aware of HOW I am thinking (Metacognition) when I am trying new ways to solve a problem.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

6. I check my work for quality and try to be accurate and precise no matter what I am doing.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

Rate Your Intelligent Behavior (Continued)

7. I am not afraid to ask questions or to critically analyze data to see if it supports a conclusion.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

8 I draw on past knowledge and apply it to new situations in order to solve problems.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

9. I am constantly adding new words to my vocabulary. I think and speak in a precise manner.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

10. I use all my senses (vision, hearing, touching, smelling, tasting) in order to learn about new subjects.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

11. I am a creative person.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

12. I am curious and have a sense of wonderment about the world in which I live. I enjoy solving problems and always try to do my best.

Not yet, but I'm learning --1--2--3--4--5--6--7--8--9--10--I usually try to behave this way Evidence:

Courtesy Steve Huffman, Kalani High School, Honolulu, Hawaji

	Getting Into The Habit At Springbrook Middle School	
1.	Persistence	Name:
2.	Overcoming Impulsivity	My goal is to improve Habit of Mind
3.	Listening to Others with Understanding and Empathy	Beginning Date:
4.	Flexibility	
5.	Metacognition: Awareness of One's Own Thinking	Completion Date:
6.	Checking for Accuracy and Precision	Teacher's Signature:
7.	Questioning and Problem Posing	De matica Ciamatana
8.	Drawing on Past Knowledge and Applying it to New and Novel Situations	Parent's Signature:
9.	Precision of Language and Thought	
10	. Using all the Senses	
	. Creativity Using Ingenuity, Originality and Insight	Springbrook: A School That's a Home for the Mind
12	Wonderment and Curiosity	Adapted from Costa and Kallick's <i>Teaching</i> and Assessing Habits of Mind

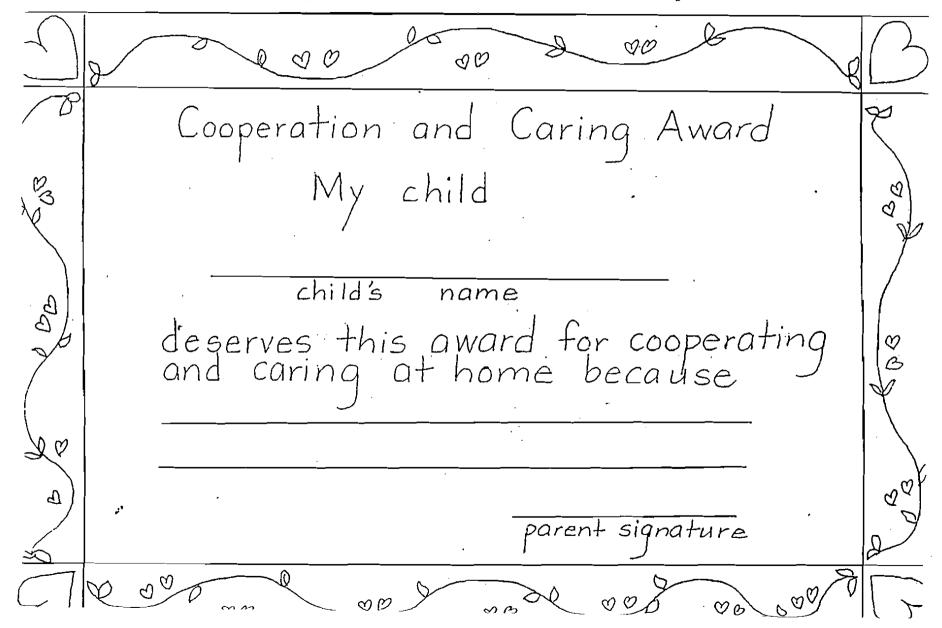
Courtesy Springbrook Middle School, Adrian Michigan

Chartering to Fate at Charlest Thinking	Thought is Taught at Springbrook
Strategies to Extend Student Thinking	Middle School
Share your goals and outcomes	Middle School
Today we are going to learn about (comparing and	You ARE Teaching Thinking Skills
contrasting) (questioning strategies) (Persistence)	
().	Recall - Identifying, gathering, observing,
W 1 WET - 14 PPT	remembering information
Remember Wait Time Provide at least three seconds of thinking time	Who?, What?, When?, Where?, Which? Describe,
after a question and after a response.	define identify.
and a quotion and and a response.	33,
Utilize "Think-Pair-Share"	Process - Organizing, selecting, relating facts
Allow individual thinking time, discussion with a	and ideas; separating wholes into parts
partner and then open up the class discussion.	Retell in your own words.
Ask the follow-up questions	What is the main idea?
Do you agree? Why? Can you elaborate? Tell us	What are the parts or features of?
more. What might be some examples?	Classify according to
	How does (compare) (contrast) with?
Withhold judgment	What conclusions can you draw about?
Respond to student's answers in non-judgmental way: paraphrasing, acknowledging, empathizing.	What inferences are you making about? What patterns do you see in?
way, parapinasing, acknowledging, empatiazing.	What connections are you making between?
Ask for summaries to promote active	, , , , , , , , , , , , , , , , , , , ,
listening	Application - Using conclusions, rules,
Would you please summarize John's explanation.	principles, combinations of ideas, developing
Survey the Class	options, judgments and decisions. Speculating, hypothesizing, evaluating,
"How many agree with the author's point of view?"	predicting.
(Thumbs up, thumbs down) Tell us why.	
	How is an example of? How is related to? Why is significant?
Encourage student calling	How is related to
"Richard, will you please call on someone to respond to share their expectations."	What would you predict/infer from?
respond to share their expectations.	What ideas can you add to?
Encourage reciprocity	How would you create/design a new?
Require students to defend their reasoning for or	What might happen if you?
against different points of view and to defend both sides of an issue.	What solutions would you suggest for? What is your opinion of?
sides of all issue.	What is your opinion of: Which do you prefer?
Invite metacognition	What solutions would you suggest for?
(Think Aloud Problem Solving) "Describe how	What is the most important?
you arrived at your answer."	How would you decide?
Call on students and only	By what criteria would you assess?
Call on students randomly Not just those with raised hands.	How would you prioritize?
Thou just into with raised markets.	
Encourage student questioning	
Invite the students to develop their own questions	
for tests and study guides.	
Cue student responses	
"There is no single correct answer for this	
question. I want you to consider the alternatives."	
Springhoods 4 C.L. 1 - C.T. 14	
Springbrook: A School of Thought	Springbrook: A School of Thought

Courtesy Springbrook Middle School, Adrian Michigan

Dear Parents,

We are learning to cooperate and care for each other at school. It would be nice if your child is using these intelligent behaviors at home as well. Please take the time to complete this award for your child, and color or decorate it. Return it by Wednesday, Nov. 22. We will begin reading the awards to the class one a day to spotlight your child's behavior at home. Thank you!!





Sandra R. Gauher Charles E. Hardaway Keith E. Harding Arlene Schmidt Jan Schneider

Tahoma School District

23015 S.E. 216th Way · Maple Valley, Washington 98038 · (206) 432-4481

Dr. Edward A. Heiser
Superintendent
Michael Maryanski
Deputy Superintendent
Dr. Donald M. Whitney
Director, Special Services
John B. McNaughton
Director, Business/Opergoons

September 18, 1995

Dear Parent,

A component of our multi-aged program is to assist children in the development of their reasoning abilities. We will be working in twelve areas of thinking. Each of these abilities is described on the attached page with specific suggestions for how you can strengthen your child's thinking as you interact with your child at home.

Also attached is a tool for helping us assess your child's growth in thinking behaviors. We would appreciate you completing this form at this time in the fall, and then again in the spring. Your child's teacher will also observe your child and assess for development in each area. Please complete the top section on the back page as well. Setting goals for improvement both at home and at school is an important step toward growth in thinking and reasoning abilities.

Thank you very much for your assistance. We are eager to support your child's growth in all possible areas including social, academic and thinking abilities. Please feel free to call Nancy Skerritt at 432-4481 or Joan Watt at 432-4418 if you have questions or concerns. Again, we thank you.

Joan Watt, Principal Shadow Lake Elementary

Namey Shervith

Nancy Skerritt, Curriculum Manager Tahoma School District

Paired Verbal Fluency

• Paired Verbal Fluency is a strategy for getting students verbally active prior to studying or discussing a new topic. It works well to activate prior knowledge and experience before holding a class discussion. The act of constructing language and listening to the ideas of others stimulates thinking and helps students recall knowledge about the topic at hand. Paired Verbal Fluency is also a good prewriting activity.

• Sample topics: Bicycle Safety, Respiratory System, Healthy Snacks, Substance Abuse Prevention, AIDS

1. Establish partners in the class. Have each team decide which partner will be person #1 and which partner will be person #2.

2. Assign a topic which each partner will discuss in turn. Partners listen carefully to each other and during their own turn do not repeat anything said by the other person. Students should not use notes.

3. The teacher says "GO" and partner #1 begins. After the selected time elapses the teacher says, "SWITCH" and person #2 takes over. The rounds go as follows:

ROUND ONE

Teacher: "GO"

Person #1 Talks for 60 Seconds

Teacher: "SWITCH"

Person #2 Talks for 60 Seconds

Teacher: "SWITCH"

ROUND TWO

Teacher: "GO"

Person #1 Talks for 40 Seconds

Teacher: "SWITCH"

Person #2 Talks for 40 Seconds

Teacher: "SWITCH"

ROUND THREE

Teacher: "GO"

Person #1 Talks for 20 Seconds

Teacher: "SWITCH"

Person #2 Talks for 20 Seconds/

Teacher: "SWITCH"

4. Partners may record their ideas and information for large group sharing, or for later use.

NOTE: The timing of the rounds can be adjusted for the dynamics of the class, the grade level and the content knowledge of the students.

Twelve Ways Your Child/Student Shows Growth in Thinking Skills

This is a parent/teacher tool for rating a student's home/school thinking behaviors at the beginning and end of a school year. It should identify student strengths and weakness and promote some parent/teacher "team" goal setting to help the student develop more successful thinking strategies.

* Mark each behavior using:	N-Not Yet;	S-Sometim	nes; F	F-Frequently	
During the 1996-1997 school	year I notice	that			
Name:		Age:	does th	ne following:	

	Parent		Tea	cher	
	Fall	Spring	Fall	Spring	
1.					Keeps trying; does not give up easily.
2.					Shows less impulsivity; thinks more before answering a question.
3.					Listens to others with understanding and empathy.
4.					States several ways to solve a problem (shows flexibility in thinking).
5.					Puts into words how he/she solved a problem; is aware of his/her own thinking.
6.					Checks for accuracy and precision; checks completed work without being asked.
7.					Asks questions; wants to find out new information.
8.					Uses knowledge already learned in new situations; can solve problems in everyday living like using allowance, taking messages, going to the store, and practicing safety.
9.					Uses words more carefully to describe feelings, wants, other things.
10.					Uses touch, feel, taste, smell, sound and sight to learn; enjoys art, music, experimenting, and active play.
11.					Enjoys making and doing original things; likes to show individuality in thought and dress.
12.	5				Enjoys problem-solving; curiosity, wonderment, and inquisitiveness.

Twelve Ways You Can Show Growth In Behaving Intelligently

This is a student/teacher tool for assessing a student's progress in acting intelligently. It should help you identify your strengths and weaknesses and help develop more successful thinking strategies.

Mark e Name: _	each behavior with: N-Not Yet; S-Sometimes; F-Frequently Section: Unit:		<u>_</u>
		Student	Teacher
1.	Did I keep on trying and not giving up easily?		
2.	Did I show less impulsivity and think more before answering a question?		
3.	Did I listen to others with understanding and empathy?		
4.	Was I able to think of more than one way to solve a problem?		
5.	Am I able to put into words how I solved a problem?		
6.	Did I check my completed work for accuracy and precision without being asked?		
7.	Did I ask questions to find out new information?		
8.	Did I use knowledge already learned to solve problems in a new situation?		
9.	Did I use words more carefully to describe feelings and occurrences?	_	
10.	Did I use all my senses to learn and experiment and participate?		
11.	Did I enjoy making and doing original things?		-
12.	Did I enjoy learning and did I show curiosity?		

Parent Suggestions for Strengthening Each of the Twelve Thinking Behaviors

As you read through these suggestions, try to identify two or three behaviors to focus on with your child this year.

- 1. **PERSISTENCE**: "If at first you don't succeed, try, try, again." Make it fun and OK to try again. Play board games, work jigsaw puzzles or read solve-it-yourself mystery books. Do experiments or plant a little garden for fun.
- 2. <u>DECREASING IMPULSIVITY</u>: Build models, work connect the dots, word searches, and crossword puzzles. Make your own mazes. Play video games, "Operation," "Perfection," or pickup sticks. Look for experiences that show that "haste makes waste."
- 3. <u>LISTENING TO OTHERS</u>: Play charades or telephone. Analyze characters' feelings in comic strips, television programs, and stories read and listened to. Role play how the other person feels in situations where your child experiences conflict.
- 4. **FLEXIBILITY IN THINKING:** Try group problem solving and team tasks. Compare notes on how you do routine tasks like tying bows, mowing the lawn, drying dishes, and cleaning your room -- to playing a video game, shooting a basket, or catching a pop fly. Try your child's way of doing a task and encourage him/her to try yours.
- 5. **AWARENESS OF OUR OWN THINKING**: Play checkers, chess, or some other strategy game and describe to an observer why you make each of your own moves. Have your opponent do the same. Challenge the child to give a step-by-step explanation of how he/she makes something, then guess what the outcome will be.
- 6. <u>CHECKING FOR ACCURACY AND PRECISION</u>: Check your child's homework, home jobs. or other tasks such as picking up his or her room. Help your child to notice what is and is not completed.
- 7. QUESTIONING AND PROBLEM SOLVING: Ask, "Have you asked any good questions today?" When questions are asked, help the child locate the answer. Tell them why you chose a particular source of information to get an answer. Play "Question Me An Answer." Give a fact -- your answer -- then challenge students to ask different questions your fact would answer.

- 8. DRAWING ON PAST KNOWLEDGE AND APPLYING IT TO NEW SITUATIONS: Help students to apply their school knowledge in real life situations. Practice counting, adding, reading whenever possible. Give limited responsibility for running errands, taking messages, caring for animals, etc.
- 9. PRECISION OF LANGUAGE AND THOUGHT: Encourage your child to speak in complete sentences and to use descriptive words rather than vague words like "nice," "stuff," and "things." Act for clarification and elaboration.
- 10. <u>USING ALL THE SENSES</u>: Play tasting, smelling, feeling, and sound location games. Draw pictures to music. Encourage field trips, "hands-on" experiments in class, cooking, model building, sewing and carpentry at home. Do role-playing, put on plays. Play "Jr. Pictionary," or "Win, Lose, or Draw."
- 11. <u>INGENUITY, ORIGINALITY, INSIGHTFULNESS, CREATIVITY</u>: Try dress up and lip syncs for fun. Do some scrap art or junk puppets. Create a diorama or make your own holiday decorations. Find a new use for familiar items.
- 12. WONDERMENT, INOUISITIVENESS, CURIOSITY, AND THE ENJOYMENT OF PROBLEM SOLVING: Share with your child the beauty of a sunset, the geometry of a spiders web, the colors of a rainbow, the changing of the seasons. Encourage your child to ask questions about the natural world. Visit the library to investigate together the many wonders of our environment.

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^{*} These suggestions should stimulate your thinking to come up with your own ideas for using each of the twelve thinking skills. You know your child and how best to motivate his/her interest and inspiration.

Have fun together. Encourage a sense of humor.

The School As A Home for the Mind

A quiet revolution is taking place across America in corporate offices, industrial factories, government offices—and in schools as well. It is a revolution of the intellect, placing a premium on our greatest natural resource, the human mind. Increasingly, those attributes of a climate conducive to intellectual growth and self-fulfillment are becoming universally recognized and accepted. The conditions that maximize creativity are being described, understood, and replicated (Perkins 1983, Kohn 1987, Deal 1987, Boyer 1988, McClure 1988, Saphier 1987). The new paradigm of industrial management emphasizes an environment in which growth and empowerment of the individual are the keys to corporate success. Pascarella writes in *The New Achievers* (1984):

Management is heading toward a new state of mind—a new perception of its own role and that of the organization. It is slowly moving from seeking power to empowering others, from controlling people to enabling them to be creative.... As managers make a fundamental shift in values...the corporation undergoes a radical reorientation to a greater world view.

Many educators have advocated similar school conditions for years, believing that a climate which maximizes human potential can be developed, monitored, and sustained. These conditions are equally applicable at all levels of the educational organization: classrooms, schools, and school districts.

SHAPING TEACHERS' THINKING

Many factors influence teachers' thinking as they make decisions about curriculum, instruction, and content. Their own cultural background, cognitive style, and professional values and beliefs about education all subconsciously enter their daily decision making. Knowledge of students' needs and perceptions of students' abilities and backgrounds influence teacher judgments about when to teach what to whom. The available resources for instruction—tests, materials, equipment, textbooks, and time and space—all have an impact on teachers' instructional planning.

Less obvious influences on teacher thought, but vastly more compelling, are the norms, culture, and climate of the school setting. Hidden but powerful cues emanate from the school environment. They signal the institutional value system that governs the operation of the organization (Saphier and King 1985). Similarly, classroom cues signal a hidden, implicit curriculum that influences student thinking as well.

Recent efforts to bring an intellectual focus to our schools most likely will prove futile unless we create a school environment that signals the staff, students, and community that development of the intellect is of prime importance as the school's goal. While efforts to enhance the staff's instructional competencies, develop curriculum, revise instructional materials and testing procedures, and pilot and adopt published programs are important components in implementing cognitive education, it is crucial that the school climate in which teachers make their decisions be aligned with the goals of full intellectual development.

Unfortunately, schools can be intellectually depressing, not only for students but for teachers as well. John Goodlad (1984) found that:

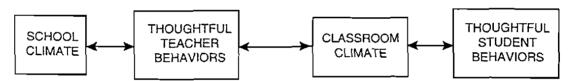
- Teachers are extremely isolated. They perform their craft behind closed doors and have little time within rigid daily schedules to meet, plan, observe, and talk with each other.
- Teachers often lack a sense of power and efficacy. Some feel they are at the bottom of hierarchy while the decisions and evaluations affecting them are being made "up there" someplace.
- The complex, intelligent act of teaching is often reduced to formulas or series of steps and competencies, the uniform performance of which supposedly connotes excellence in the art and elegance of teaching.

- Information about student achievement is for political, evaluative, or coercive purposes; it neither involves nor instructs the school staff members in reflecting on, evaluating, and improving curriculum and instruction.
- Educational innovations are often viewed as mere "tinkering" with the instructional program. There are so many of them, and their impact is so limited, that teachers sometimes feel, "If I do nothing, this, too, shall pass." Instead of institutionalizing change, traditional practices and policies so deeply entrenched in the educational bureaucracy remain static. Testing, reporting, securing parent understanding and support, teacher evaluation, scheduling, school organization, and discipline procedures are seldom revised to harmonize with the overall innovation.

When such a dismal school climate exists, teachers understandably become depressed. Their vivid imagination, altruism, creativity, and intellectual prowess may soon succumb to the humdrum dailiness of unruly students, irrelevant curriculum, impersonal surroundings, and equally disinterested co-workers. Under such conditions, the likelihood that teachers will value the development of students' intellect is marginal.

TOWARD THE SCHOOL AS A HOME FOR THE MIND

Teachers are more likely to teach for thinking in an intellectually stimulating environment. When the conditions in which teachers work signal, promote, and facilitate their intellectual growth, they will gradually align their classrooms and instruction to promote student's intellectual growth as well. As teachers teach students to think, become more aware of conditions that promote student thinking, and become more powerful thinkers themselves, they will demand and create school climate conditions that are intellectually growth-producing as well. Thus, respect for intelligent behavior grows to pervade all levels of the institution.



Three climate conditions, in particular, facilitate intellectual growth: (1) all participants share a common vision of the school as a home for the mind, (2) the process of thinking is the content of curriculum and instruction, and (3) schools and classrooms are interdependent communities. These conditions provide a sharper image of a climate for thinking in schools and classrooms that are dedicated to becoming homes for the mind.

A COMMON VISION

Effective organizations are characterized by a deep sense of purposefulness and a vision of the future. Members at all levels share a commitment to that vision, a sense of ownership, and an internal responsibility for performance (Harmon 1988). This shared vision is evident in several ways.

Faith in Human Intellectual Potential

In a school that is a home for the mind there is an inherent faith that all people can continue to improve their intellectual capacities throughout life; that learning to think is as valid a goal for the "at-risk," the handicapped, the disadvantaged, and the foreign-speaking as it is for the "gifted and talented"; and that all of us have the potential for even greater creativity and intellectual power. Students, teachers, and administrators realize that learning to use and continually refine their intelligent behavior is the purpose of their life-long education. Such a belief is expressed in many ways.

Thinking is valued not only for all students and certificated staff, but for the classified staff as well. A principal of a "thinking school" in Davis, California, reported that a newly hired custodian constantly asked her to check on how well he was cleaning the classrooms and to tell him whether he was doing an adequate job. She decided to help him develop a clear mental image of what a clean classroom looked like and then worked

School staff members continue to define and clarify thinking as a goal and seek ways to gain assistance in achieving it. Their commitment is reinforced when they are able to report and share progress toward installing thinking in their schools and classrooms. The superintendent of Manheim Township in Lancaster, Pennsylvania, reviews with site administrators their long-range goals and progress toward including the development of intelligent behaviors in the school's mission. In classrooms in Wayzata, Minnesota, students keep journals and periodically report new insights about their own creative problem-solving strategies.

Philosophy, Policies, and Practices

The vision is also expressed in the district's board-adopted mission statement, purposes, and policies. In Hopkins, Minnesota, enhancing intelligent behavior is explicitly stated in the school district's adopted philosophy and mission. District policies and practices are constantly scrutinized for their consistency with and contribution to that philosophy. Evidence of their use as criteria for decision making is examined. Furthermore, procedures for continuing to study, refine, and improve district-wide practices encourage schools to keep growing toward more thoughtful practice.

Personnel practices, for example, reflect the desire to infuse thinking. Job specifications for hiring new personnel include skills in teaching thinking. Teachers are empowered to make decisions that affect their jobs. Supervision, evaluation, and staff development practices enhance the perceptions and intellectual growth of certificated staff and honor their role as professional decision-makers (Costa and Garmston, 1985; Costa, Garmston, and Lambert, 1988).

Selection criteria for texts, tests, instructional materials, and other media include their contribution to thinking. Counseling, discipline, library, and psychological services are constantly evaluated for their enhancement of and consistency with thoughtful practice.

In schools and classrooms, discipline practices appeal to students' thoughtful behavior. Students participate in generating rational and compassionate classroom and school rules and continually strive to evaluate their own behavior in relation to those criteria (Curwin & Mendler, 1988).

Protecting What's Important—Saying "No" to Distractions

Sometimes our vision of the desired school is temporarily blurred or obscured. We are distracted from our intellectual focus by fads, bandwagons, other educational "panaceas," and by pressures from public and vocal special-interest groups. Our purposes may be temporarily clouded by politically and financially expedient decisions. We must ignore all of these distractions as irrelevant to our central issue.

On the other hand, we need to encourage philosophical discussion because it gives voice to alternative views. Considering other perspectives—as expressed in such books as Bloom's CLOSING OF THE AMERICAN Mind (1987), Ravitch and Finn's WHAT DO OUR 17-YEAR-OLDS KNOW? (1987), and Hirsch's CULTURAL LITERACY (1987)—creates tensions, honors divergent thinking, and expands and refines our vision. Such discussion encourages staff members to include modes of thinking and inquiring in their definition of literacy. Discussion strengthens the staff's commitment to the principle that to learn anything—to gain cultural literacy or basic skills—requires an engagement of the mind.

Knowing that thinking is the important goal, all inhabitants of the school believe that their right to think will be protected. District leaders keep this primary goal in focus as they make day-to-day decisions. Teachers' rights to be involved in the decisions affecting them are protected, as are the rights of those who choose not to be involved in decision making.

Since change and growth are viewed as intellectual processes, not events, we value the time invested in ownership, commitment, and learning.

Communications

Embedded in an organization's communications are expressions of what it prizes. Pick up any newspaper and you see a reflection of society's values in its major sections: sports, business and finance, and entertainment.

As a school becomes a home for the mind, the vision increasingly pervades all of its communications. In Palmdale, California and Pinellas Park, Florida report cards, parent conferences, and other progress reports include indicators of the growth of students' intelligent behaviors: questioning, metacognition, flexibility of thinking, persistence, listening to others' points of view, and creativity (Costa, 1985b).

Growth in student's thinking abilities is assessed and reported in numerous ways, including teacher-made tests, structured observations, and interviews. Students maintain journals to record their own thinking and metacognition; they share, compare, and evaluate their own growth of insight, creativity, and problem-solving strategies over time. Parents, too, look for ways in which their children are transferring intellectual growth from the classroom to family and home situations. In Westover Elementary school in Stamford, Connecticut, portfolios of students' work show how their organizational abilities, conceptual development, and creativity are growing. Test scores report such critical thinking skills as vocabulary growth, syllogistic thinking, reasoning by analogy, problem solving, and fluency.

Parents and community members in Sorento, Illinois, receive newspaper articles, calendars, and newsletters informing them of the school's intent and ways they can engage children's intellect (Diamandis and Obermark 1987-1988). "The Rational Enquirer" is the name given to the Auburn, Washington School District's Thinking Skills network newsletter. In Verona, Wisconsin, parents attend evening meetings to learn how to enhance their children's intelligent capacities and behaviors (Feldman 1986).

Mottoes, slogans, and mission statements are visible everywhere. "LINCOLN SCHOOLS ARE THOUGHT-FULL SCHOOLS" is painted on one district's delivery trucks for all to see. In the Plymouth-Canton, Michigan, Public Schools, the superintendent distributes bookmarks reminding the community that thinking is the schools' goal; "THOUGHT TAUGHT AT HUNTINGTON BEACH HIGH" is emblazoned on that school's note pads. "MAKING THINKING HAPPEN" is printed on Calvin Coolidge Elementary School's letterhead in Shrewsbury, Massachusetts. "THINKING SPOKEN HERE" is a constant classroom reminder of Stockton, California, history teacher Dan Theile's explicit goals for students. "WE'RE TRAINING OUR BRAINS" is the motto on buttons proudly produced, sold, and worn by the special education students at Jamestown, Pennsylvania, Elementary School.

Tangible Support

How teachers, school administrators, and other leadership personnel expend their valuable and limited resources—time, energy, and money—signals the organization's value system. The Hanford, California, School Board provides a profound example of this point. The Board requires elementary school principals to spend 50 percent of their time in curriculum and instructionally related activities. To ensure that this happens administrative assistants were hired to provide support for principals.

The school that is becoming a home for the mind allocates financial resources to promote thinking. Irvine, California Schools hired a full-time thinking skills resource teacher. Substitutes are hired so that teachers can be released to visit and coach each other. Staff members and parents are sent to workshops, courses, conferences, and in-service sessions to learn more about effective thinking and the teaching of thinking.

Instructional materials and programs related to thinking are purchased, and time is provided to plan for and to train teachers in the use of these materials and to gather evidence of their effectiveness. Consultants

discuss and report new learnings about intellectual development and implications for program improvement. Vignettes and "critical incidents" are recorded, described, and analyzed as indicators of students' application of critical and creative thinking skills and dispositions.

Administrators use their time and energy to visit classrooms to learn more about and to coach instruction in thinking. Teachers spend time planning lessons and observing each other teach for thinking. Time in classrooms, as well, is allocated to thinking skills and talking about thinking.

Thus, we see that the whole school community—students, teachers, administrators, classified personnel, board members, and parents—share a common vision of the school as a home for the mind. They continually work to sharpen that image, to clarify their goals, and to align daily practices with that vision of the future.

PROCESS AS CONTENT

In the school that is becoming a home for the mind, development of the intellect, learning to learn, knowledge production, metacognition, decision making, creativity, and problem solving are the subject matter of instruction. Content is selected because of its contribution to process and thus becomes a vehicle for thinking processes.

Problem Solving, Decision Making, and Open Communication

Being committed to the improvement of intellectual growth, everyone in the school is willing to discuss their strategies for improving school climate, interpersonal relationships, and the quality of their interactions and problem solving. Students and school personnel practice, evaluate, and improve their listening skills of paraphrasing, empathizing, and clarifying and understanding.

At school board, administrative, and faculty meetings, decision-making processes are discussed, explained, and adopted. Process observers are invited to give feedback about the group's effectiveness and growth in decision-making, consensus-seeking, and communication skills.

Each group member's opinions and questions are respected. Disagreements are stated without fear of damaging relationships. Debates and critical assessment of alternate points of view are encouraged. Responsibility for "errors, omissions, and inadequacies" is accepted without blaming others. Responses are given and justified, and new ideas are advanced without fear of criticism or judgment. Group members' differing priorities, values, logic, and philosophical beliefs become the topics of analysis, dialogue, understanding, and further questions.

Continuing to Learn—Expanding the Knowledge Base

Knowledge about thinking and the teaching of thinking is vast, complex, uncertain, and incomplete (Marzano, Brandt, Hughes, Jones, Presseisen, Rankin. & Suhor, 1987). We will never know it all, nor would we wish to reduce teaching thinking to a simplistic, step-by-step lesson plan (Brandt, 1987). In a school that is a home for the mind, the inhabitants continually expand their knowledge base: gaining more content, learning more about learning, and thinking more about thinking. They add to their repertoire of instructional skills and strategies, seeking greater diversity rather than conformity.

Knowing that the school's mission is to develop the intellect, teachers increasingly strive to invest thoughtful learning, craftsmanship, metacognition, and rigor into curriculum and instruction. They expand their repertoire of instructional skills and strategies to develop a wide range of reasoning, creative, and cooperative abilities in students.

Teachers increase their knowledge of the sciences, math, and humanities because it helps them ask more provocative questions that invite inquiry and critical thinking. A wider knowledge base supports the transfer of concepts across several subject areas and encourages appreciation for the disciplined methodologies of great thinkers throughout history.

Teachers draw from their growing repertoire of knowledge about instructional techniques and strategies to make decisions based on goals, students' characteristics, and the context in which they are working. They vary their lesson designs according to students' developmental levels, cognitive styles, and modality preferences (Jones, 1987).

While their students expand their range of intelligent behaviors, teachers and administrators improve their own thinking skills and strategies by pursuing course work in philosophy, logic, and critical thinking. Thinking skills include not only knowing how to perform specific thought processes (Beyer, 1985) but also knowing what to do when solutions to problems are not immediately known; study skills and learning-to-leam, reasoning, problem-solving, and decision-making strategies are important (Marzano & Arredondo, 1986). Teachers and administrators learn about their own cognitive styles and how to cooperate with and value others who have differing styles. They learn how to cause their own "creative juices" to flow through brainstorming, inventing metaphor, synectics, and concept mapping.

Modeling

Thinking is probably best learned through imitation and emulation of good thinkers. Adults in the school that is becoming a home for the mind try to model the same qualities and behaviors they want students to develop. Teachers and administrators share their metacognitive strategies in the presence of students and others as they teach, plan, and solve problems (Jones, 1987).

Staff members restrain their impulsiveness during emotional crises. They listen to students, parents, and each other with empathy, precision, and understanding. They reflect on and evaluate their own behaviors to make them more consistent with the core value that thoughtful behavior is a valid goal of education.

THE SCHOOL AS A COMMUNITY

Humans, as social beings, mature intellectually in reciprocal relationships with other people. Vygotsky (1978) points out that the higher functions actually originate in interactions with others.

Every function in...cultural development appears twice: first, on the social level, and later on the individual level; first between people (interpsychological), and then inside (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation concepts. All the higher functions originate as actual relationships between individuals.

Together, individuals generate and discuss ideas, eliciting thinking that surpasses individual effort. Together and privately, they express different perspectives, agree and disagree, point out and resolve discrepancies, and weigh alternatives. Because people grow by this process, collegiality is a crucial climate factor.

Collegiality

The essence of collegiality is that people in the school community are working together to better understand the nature of intelligent behavior. Professional collegiality at the district level is evident when administrators form support groups to assist each other: when teachers and administrators from different schools, subject areas, and grade levels form networks to coordinate efforts to enhance intelligent behavior across all content areas and in district policies and practices. Committees and advisory groups assess staff needs, identify

and locate talent, and participate in destrict level prioritizing and decision making. They support and provide liaison with school site efforts; plan districtwide inservice and articulation to enhance teachers' skills; and develop an aligned, coordinated, and developmentally appropriate curriculum for students.

Selection committees for instructional materials review and recommend adoption of materials and programs to enhance students' thinking. Through districtwide networks, teachers share information and materials and teach each other about skills, techniques, and strategies they have found to be effective. The staff at Tigard, Oregon, call this "Think Link."

In schools, teachers plan, prepare, and evaluate teaching materials. In St. Paul, Minnesota, teachers visit each other's classrooms frequently to coach and give feedback about the relationship between their instructional decisions and student behaviors. In Chugiak, Alaska, high school teachers are members of "instructional skills teams." Together they prepare, develop, remodel, and rehearse lessons. They then observe, coach, and give feedback to each other about their lessons.

Teachers and administrators continue to discuss and refine their vision of the school as a home for the mind. Definitions of thinking and the teaching and evaluation of students' intellectual progress are continually clarified. Child-study teams keep portfolios of students' work and discuss each student's developmental thought processes and learning styles. Teams explore instructional problems and generate experimental solutions. Faculty meetings are held in classrooms where the host teacher shares instructional practices, materials, and videotaped lessons with the rest of the faculty. Teacher teams sequence, articulate, and plan for continuity, reinforcement, and assessment of thinking skills across grade levels and subject areas.

An Environment of Trust

People are more likely to engage and grow in higher-level, creative, and experimental thought when they are in a trusting, risk-taking climate (Kohn, 1987). MacLean's (1978) concept of the triune brain illuminates the need for operating in an environment of trust. For the neo-mammalian brain (the neo-cortex) to become fully engaged in its functions of problem solving, hypotheses formation, experimentation, and creativity, the reptilian brain (R-Complex) and the paleomammalian brain (Limbic System) need to be in harmony. Under stress or trauma, the more basic survival needs demanded by the reptilian brain and the emotional security and personal identity required by the paleomammalian brain can override and disrupt the more complex neo-cortical functioning.

Because higher-order thinking is valued as a goal for everyone in the school, the school's climate is monitored continually for signs of stress that might close down complex and creative thinking. Risk-taking requires a nonjudgmental atmosphere where information can be shared without fear that it will be used to evaluate success or failure.

A climate of trust is evident when experiments are conducted with lesson designs, instructional sequences, and teaching materials to determine their effects on small groups of students (or with colleagues before they're used with a group). Various published programs and curriculums are pilot-tested, and evidence is gathered over time of the effects on students' growth in thinking skills. Teachers become researchers when alternate classroom arrangements and instructional strategies are tested and colleagues observe student interactions.

Appreciation and Recognition

Whether a work of art, athletic prowess, acts of heroism, or precious jewels, what is valued in society is given public recognition. Core values are communicated when people see what is appreciated. If thinking is valued, it, too, is recognized by appreciation expressed to students and to teachers and administrators as well.

Students are recognized for persevering, striving for precision and accuracy, cooperating, considering another person's point of view, planning ahead, and expressing empathy. Students appliand each other for acts of ingenuity, compassion, and persistence. The products of their creativity,

cooperation, and thoughtful investigation are displayed throughout the school.

Teachers at Wasatch Elementary School in Salt Lake City award blue ribbons to students who display intelligent behaviors. Similarly, teachers in East Orange, New Jersey, give certificates for "good thinking."

One form of appreciation is to invite teachers to describe their successes and unique ways of organizing for teaching thinking. In faculty meetings, teachers share videotaped lessons and showcase the positive results of their lesson planning, strategic teaching, and experimentation.

Schools within the district receive banners, flags, trophies, or certificates of excellence for their persistence, thoughtful actions, creativity, cooperative efforts, or meritorious service to the community. Some schools have even established a "Thinkers Hall of Fame."

Given for Excellence in Thinking and/or Institute in Thinking and/or Institute in the institute in Thinking and/or Institute in the institute in Institute in in Institute in Institute

Sharing, Caring, and Celebrating

Thinking skills are pervasive in schools that value thinking. They are visible in the traditions, celebrations, and everyday events of school life.

Staff members are often overheard sharing humerous anecdotes of students who display their thought processes. ("I saw two 7th grade boys on the athletic field yesterday ready to start duking it out. Before I could get to them, another boy intervened and said, 'Hey, you guys, restrain your impulsivity."")

Teachers and administrators share personal, humerous, and sometimes embarrassing anecdotes of their own problems with thinking (tactics for remembering peoples' names, finding their car in the parking lot, or solving the dilemma of locking the keys in the car.)

At career days, local business and industry leaders describe what reasoning, creative problem-solving, and cooperative skills are needed in various jobs. At school assemblies, students and teachers are honored for acts of creativity, cooperation, thoughtfulness, innovation, and scholarly accomplishments. Academic decathlons, thinking and science fairs, problem-solving tournaments, dialogical debates, invention conventions, art exhibits, and musical programs all celebrate the benefits of strategic planning, careful research, insightfulness, sustained practice, and cooperative efforts.

THE ULTIMATE PURPOSE: ENHANCING STUDENT THINKING

A common vision, process as content, and the school as a community are not ends in themselves. We must constantly remind ourselves that the reason we construct our schools is to serve our youth.

As cornerstones and building blocks of school climate are gradually cemented into a sturdy foundation, teachers will in turn create a classroom with corresponding climate factors that recognize and support growth in students' intelligent behaviors.

The vision of education as the development of critical thinking abilities is evident as students deliberate and persevere in their problem solving, as they work to make their oral and written work more precise and accurate, as they consider others' points of view, as they generate questions, and as they explore the alternatives and consequences of their actions. Students engage in increasingly rigorous learning activities that challenge the intellect and imagination. Such scholarly pursuits require the acquisition, comprehension, and application of new knowledge and activate the need for perseverance, research, and increasingly complex forms of problem solving.

explicitly stated as the content of lessons, they become the "tasks that students are on." The metacognitive processes engaged in while learning and applying the knowledge are discussed. Thus students' thinking becomes more conscious, more reflective, more efficient, more flexible, and more transferable.

Collegiality is evident as students work together cooperatively with their "study-buddies," in learning groups, and in peer problem solving. In class meetings, students are observed learning to set goals, establish plans, and set priorities. They generate, hold, and apply criteria for assessing the growth of their own thoughtful behavior. They take risks, experiment with ideas, share thinking strategies (metacognition), and venture forth with creative thoughts without fear of being judged. Value judgments and criticisms are replaced by accepting, listening, empathizing with, and clarifying each other's ideas (Costa, 1985a).

The Greeks had a word for it: paideia. The term, popularized by Adler's PROPOSAL (1983), is an ideal concept we share: a school in which learning, fulfillment, and becoming more humane are the primary goals for all students, faculty, and support staff. It is the Athenian concept of a learning society in which self-development, intellectual empowerment, and life-long learning are esteemed core values and all institutions within the culture are constructed to contribute to those goals.

REFERENCES

- Adler, M. J. (1983). The Paideia Proposal: An Educational Manifesto. New York, NY: Macmillan.
- Beyer, B. (April 1985). Teaching critical thinking: A direct approach. Social Education, 49(4), 297-303.
- Bloom, A. (1987). The Closing of the American Mind. New York, NY: Simon and Schuster.
- Boyer, E. (September 1988). On the high school curriculum: A conversation with Ernest Boyer. *Educational Leadership*, 46(1).
- Brandt, R. (October 1987). On teaching thinking skills: A conversation with B. Othanel Smith. *Educational Leadership*, 45(2).
- Costa, A. (1991a). Teacher behaviors that enable student thinking. In A. Costa (Ed.), *Developing Minds: A Resource Book for Teaching Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Costa, A. (1991b). How can we recognize improved student thinking? In A. Costa (Ed.), *Developing Minds: A Resource Book for Teaching Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Costa, A., & Garmston, R. (February 1985). Supervision for intelligent teaching. *Educational Leadership*, 42(5), 70-80.
- Costa, A.; Garmston, R.; & Lambert, L. (1988). Teacher evaluation: A cognitive development view. In S. Stanley & J. Popham (Eds.), *Teacher Evaluation: Six Prescriptions for Success.* Alexandria, VA: Association for Supervision and Curriculum Development.
- Curwin, R., & Mendler, A. (1988). Discipline with Dignity. Alexandria, VA: Association for Supervision and Curriculum Development.
- Deal, T. (1987). Presentation made at the 1987 ASCD Annual Conference, New Orleans, LA.

- Diamandis, L., & Obermark, C. (December-January 1987-1988). Bright Ideas—A Newsletter for Parents: Critical Thinking Activities for Kindergarten Children. Sorento, IL, II(2).
- Feldman, R. D. (November 11, 1986). 25 ways to teach your child to think. Woman's Day, 60-68.
- Goodlad, J. I. (1984). A Place Called School: Prospects for the Future. New York, NY: McGraw Hill.
- Harmon, W. (1988). *Global Mind Change*. Indianapolis, IN: Knowledge Systems, Inc. Published in cooperation with the Institute of Noetic Sciences, Sausalito, CA.
- Hirsch, E. D. (1987). Cultural Literacy. Boston, MA: Houghton Mifflin.
- Jones, B. F. (1987). Strategic teaching: A cognitive focus. In B. F. Jones, A. S. Palinscar, D. Ogle, & E. Carr (Eds.), Strategic Teaching and Learning: Cognitive Instruction in the Content Areas. Alexandria, VA: Association for Supervision and Curriculum Development.
- Kohn, A. (September 1987). Art for art's sake. Psychology Today, 21, 52-57.
- MacLean, P. (1987). A mind of three minds: Educating the triune brain. In J. Chall & A. Mirsky (Eds.), Education and the Brain. Chicago, IL: University of Chicago Press.
- McClure, R. (1988). Visions of School Renewal. Washington, DC: National Education Association.
- Marzano, R., & Arredondo, D. (1986). *Tactics for Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Marzano, R.; Brands, R.; Hughes, C.; Jones, B. F.; Presseisen, B.; Rankin, S.; & Suhor, C. (1987). *Dimensions of Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Pascarella, P. (1984). The New Achievers. New York, NY: Free Press.
- Perkins, D. (1983). The Mind's Best Work: A New Psychology of Creative Thinking. Cambridge, MA: Harvard University Press.
- Ravitch, D., & Finn, C. (1987). What Do Our 17-Year-Olds Know? New York, NY: Harper and Row.
- Saphier, J. (1987). Strengthening School Culture. Presentation made at the 1987 ASCD Annual Conference, New Orleans, LA.
- Saphier, J., & King, M. (March 1985). Good Seeds Grow in Strong Cultures. *Educational Leadership*. Vol. 42(6), 67-74.
- Sizer, T. (1984). Horace's Compromise: The Dilemma of the American High School. Boston, 'MA: Houghton Mifflin.
- Vygotsky, L. (1978). Society of Mind. Cambridge, MA: Harvard University Press.

Part III Activating and Engaging Habits of Mind

What Language Patterns Support Habits of Mind?

How Can Student's Intellect and Imagination Be Challenged?

Some Questioning DON'Ts

Some questions may place limits on other's thinking. Limits to thinking are to be avoided if the Habits of Mind are to be exercised. Therefore, before presenting some questioning "do's" lets examine some questioning patterns to avoid.

There are at least five types of questions which mis-cue student's thinking because they send confusing and mixed messages. They do NOT belong in Habits of Mind lesson designs:

1. <u>Verification questions</u>: The answers to which are already known by you or by the student:

What is the name of.....?
How many times did you?

2. Closed questions that can be answered "yes", "no", or "I can".

Can you recite the poem?
Can you tell us the name of?
Who can remember.....?
Who can state the formula for.....?

3. Rhetorical questions in which the answer is given within the question:

"In what year was the War of 1812?"
"Since when has Mikhail Gorbaches

"Since when has Mikhail Gorbachev had his birth mark?"

"So how much is 3 x 4: twelve. OK?"

"Who can name the three basic parts of a plant? Root, stems and leaves, right?"

4. <u>Defensive questions</u> which cause justification, resistance and self-protection:

"Why didn't you complete your homework?"

"Why would you do a thing like that?"

"Are you misbehaving again?"

5. Agreement questions the intent of which is to invite others to agree with our opinion or answer

"This is really the best solution, isn't it?

"Let's do it my way, O. K.?

"We really should get started now, shouldn't we?

Characteristics of Powerful Questions

Desirable questions intended to elicit in students their awareness of and engagement if the Habits of Mind have three characteristics:

• 1. They are invitational.

An approachable voice is used. There is a lilt and melody in the questioner voice rather than a flat, even tenor.

Plurals are used to invite multiples rather than singular concepts:

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"What are <u>some</u> of your <u>goals</u>?",
"What <u>ideas</u> do you have?"
"What <u>outcomes</u> do you seek?"
"What <u>alternatives</u> are you considering?
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Words are selected to express tentativeness:

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"What conclusions might you draw?",
"What may indicate his acceptance?
"What hunches do you have to explain this situation?
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Invitational stems are used to enable the behavior to be performed:

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"As you think about......"

"As you consider......"

"As you reflect on......"
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Positive Presuppositions assume capability and empowerment:

"What are <u>some</u> of the <u>benefits you will derive</u> from <u>engaging</u> in thi activity?"

"As you anticipate your project, what are <u>some indicators</u> that you are <u>progressing and succeeding?</u> "

• 2. They engage specific cognitive operations

Input

- Recall
- Define
- Describe
- Identify
- Name
- List

Process

- Compare/Contrast
- Infer
- Analyze
- Sequence
- Synthesize
- Summarize

Output

- Predict
- Evaluate
- Speculate
- Imagine
- Envision
- Hypothesize

• 3. They address content which is either external or internal to the other person

External Content might be what is going on in the environment outside the student:

A lesson

Another Student

A meeting

A project

A playground experience

A home experience

<u>Internal Content</u> might be what is going on inside the other person's mind, heart or emotion.

Satisfaction

Puzzlement

Frustration

Thinking processes (Metacognition)

Feelings/Emotions

The Language Of Positive Presuppositions

Example I	Example II
1. Did you forget to do your assignment again?	As you plan for your assignment, what materials will you need?
2. Why don't you like to paint?	2. We need you to paint a picture to add to our gallery of outstanding artists.
3. Did you forget again?	3. Tell us what you do to help you remember.
4. When will you grow up?	4. How can we use this experience to learn better ways to solve such problems?
5. Here, I'll give you and easier puzzle, then you'll be successful.	5. As the puzzles get more difficult, how will you use planning like this again?
What do these examples have in common?	What do these examples have in common?
How are these two	examples different?

Presuppositions

Our language contains overt and covert messages. The deeper meanings w interpret from the language of others is not always communicated by the surface structure of the words and syntax. The subtle and, at times, not so subtle ways in which the embedded presuppositions in our language can be hurtful to others,

For instance, the statement, "Even Bill could pass that class", means that (a) Bill is not a great student and (b) the class is not difficult. Neither of those pieces of information is present in the surface structure of the sentence. The sentence could read, "Even Bill (who is not a good student) could pass that class (which is not difficult)". Nevertheless, that is what the sentence communicates. The two unstated pieces are inferred by the listener as presuppositions or assumptions underlying the sentence (Elgin, 1980).

By paying attention to the presuppositions that we use and choosing our words with care, we can more positively influence the thinking and feelings of others with whom we are communicating.

Analyzing Questions And Statements For Presuppositions

Identify the presupposition)s) in each question. Describe the possible impact on the person's feelings and cognition. Modify the question to communicate a more positive presupposition.

- 1. Have you been able to come up with a goal?
- 3. How can you possibly solve such a difficult problem?
- 4. What could you have done to make it more successful?
- 5. Why don't you try....?

2. Why did you do that?

- 6. How can I help you improve?
- Elgin, S. H. (1980) The Gentle Art of Verbal Self-Defense. New York, NY: Prentice Hall Inc.

Limiting Presuppositions

"Do you have an objective?"

"Why were you unsuccessful?"

"What two things went well?"

"If only you had listened!"

Empowering Presuppositions

"What are some of the goals that you have in mind for this meeting?"

"As you consider your alternatives, what seems most promising?"

"How will you know that the meeting is successful?"

"What personal learnings or insights will you carry forward to future situations?"

The Three Story Intellect

There are one-story intellects, two-story intellects, and three-story intellects with skylights.

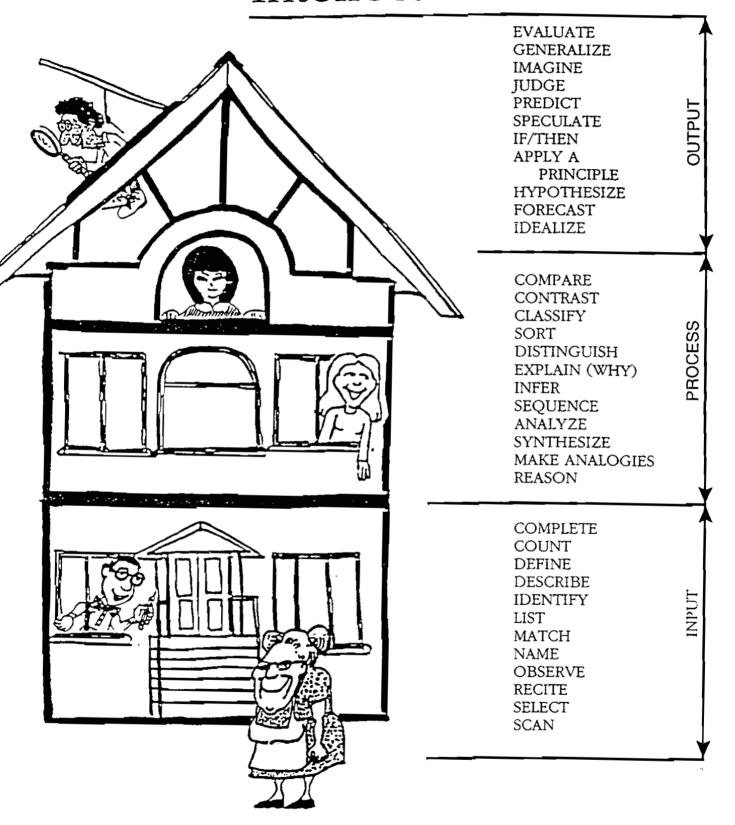
All fact collectors, who have no aim beyond their facts, are one-story men.

Two-story men compare, reason, generalize, using the labors of the fact collectors as well as their own.

Three-story men idealize, imagine, predict--their best illumination comes from above, through the skylight.

Oliver Wendell Holmes

The Three-Story Intellect



Question Syntax

Who? Gather and When? Recall Data Where? Process the Data: What do Inference you think? Analysis How do you Apply think _____ might be Hypothesize different if?

Composing Powerful Questions

Taking an invitational stem from the first column, a cognitive operation from the second column and a piece of content from the third column, powerful questions can be composed which include all three of the above criteria:

INVITATIONAL STEMS	COGNITIVE OPERATIONS	CONTENT
As you	<u>Input</u>	<u>Internal</u>
What are some of How might you What led to What possible What might How might	 Recall Define Describe Identify Name List Process Compare/Contrast Infer Analyze Sequence Synthesize Summarize 	Reaction Feelings Thoughts Emotions External Project Other Students Group Event Goals Lesson
	Output Predict Evaluate Speculate Imagine Envision Hypothesize	

For example:

"As you compare this project with others you have done......""

"How might you sequence these events in such a way as to?"

"What led you to these inferences about your performance's success?"

"In what ways might your emotions have influenced your decisions about ...?"

Questioning To Engage The Habits Of Mind

If we want others to become aware of and to practice the use of the Habits o Mind, teachers and parents can learn to pose questions which are intended to draw forth or cause others to becoming aware of one or more of the Habits of mind. Following are "categorical questions" which are intended to invite others to draw forth one of the Habits of mind. Please notice the invitational stems, the positive presuppositions, the plural and tentative language, the level of cognition and the content. For example:

Categorical Questions

Metacognition

"While you were reading, what was going one inside your head to monitor you comprehension of the story?"

Listening with Empathy

"If you were John, how do you think he would react to what you said about him?"

Flexibility

"What are some other ways you could solve this problem?"

Questioning

"What questions will you ask to gather the data you need to solve this problem?"

Checking for Precision and Accuracy

"How do you know your answer is correct?"

Wonderment

"What intrigues you about this experiment?"

Cross-Categorical Questions

The following questions are intended to invite others to draw upon at two or more of the Habits of Mind. For Example:

Metacognition, Listening and Flexibility:

"As you listen to others' points of view, what metacognitive strategies do you employ to see the situation from their perspective?"

Persistence, Metacognition

"As you are reading, what do you do when your mind wanders but you want to remain on task?"

Managing Impulsivity, Flexibility

"When you find yourself tempted to respond emotionally to a situation, what alternatives do you consider?"

Precision of Language and Thought, Metacognition

"When you are communicating with others, what indicators are you aware of in yourself and others that signal you are being understood?"

Metacognition, Creativity

"As you talk to yourself about this problem, what new insights were generated?"

Skillful teachers use the Habits of Mind as a mental map to monitor their questioning and to compose questions with the specific intention of having their students engage one or more or the Habits of Mind. These questions build heightened consciousness, students hear the vocabulary, and they soon learn that these Habits are valued and recurring behaviors that may be employed in many life situations.

Enhancing Cognitive Levels of Classroom Interaction

I. Gathering and Recalling Information (INPUT)

To cause the student to INPUT data, questions and statements are designed to draw from the student the concepts, information, feelings or experiences acquired in the past and stored in long or short-term memory. They can also be designed to activate the senses to gather data which the student can then process at the next higher level. There are several cognitive processes included at the INPUT level of thinking. Some verbs that may serve as the predicate of a behavioral objective statement are:

completing	identifying	observing
counting	listing	reciting
defining	matching	scanning
describing	naming	selecting

Examples of questions and statements designed to elicit these cognitive objectives are:

Question/Statement Desired Cognitive Behavior

"Name the states which bound California."	Naming
"How does the picture make you feel?"	Describing
"What word does this picture go with?"	Matching
"Define the word, 'haggard.'"	Defining
"What were the names of the children in the story?"	Naming
"What did you see the man doing in the film?"	Observing
"Which ball is the blue one?"	Identifying
"How does the Gettysburg Address begin?"	Reciting
"How many coins are there in the stack?"	Counting
"Which words in this list are rhyming words?"	Selecting
"The Mexican houses were made of mud bricks called what?"	Completing
"Watch what color it turns when I put the litmus paper in the liquid."	Observing
"List the first four numbers in a set of positive integers."	Listing
"How did you feel about the grade you received in science?"	Recalling

II. Making Sense Out of the Information Gathered (Processing)

To cause the student to PROCESS the data gathered through the senses and retrieve from long and short-term memory, questions and statements are designed to draw some relationships fo cause and effect, to synthesize, analyze, summarize, compare, contrast, or classify the data that he/she has acquired or observed. Following are verbs that may serve as the predicate of a behavioral objective statement if the desired cognitive behavior of students is at the level of processing.

analyzing	distinguishing
categorizing	experimenting
classifying	explaining
comparing	grouping
contrasting	inferring

making analogies organizing sequencing synthesizing

Examples of questions designed to elicit these cognitive objectives are:

Desired Cognitive Behavior

Composino

Explaining
nferring
equencing
explaining Cause and Effect
Grouping
faking Analogies
Distinguishing
xperimenting
ontrasting
rganizing
nalyzing
equencing
omparing
n e Sar Si A. On ar e

III. Applying and Evaluating Actions in Novel Situations (Output)

Questions and statements which cause OUTPUT are designed to have the student go beyond the concept or principle that he/she has developed and to use this relationship in a novel or hypothetical situation. Application invites the student to think creatively and hypothetically, to use imagination, to expose a value system or to make a judgment. Verbs that may serve as the predicate of a behavioral objective statement if your desired cognitive behaviors of students is at the level of application include:

applying a principle evaluating extrapolating forecasting generalizing hypothesizing imagining judging model building predicting speculating

Examples of questions designed to elicit these cognitive objectives are:

Question/Statement	Desired Cognitive Behavior
"What do you suppose will happen to our weather if a high pressure area moves in?"	Forecasting
"If our population continues to grow as it does, what might life b like in the twenty-first century?"	e Speculating
"Since the amount of heat does affect the speed of movement of the molecules, what do you think will happen when we put the liquid in the refrigerator?"	Predicting
"Imagine what life would be like if there were no laws to govern us."	Imagining
"What might you say about all countries' economies that are depedent upon only one crop?"	en- Generalizing
"Is there a way you can think of to use this bimental strip to make a fire alarm?"	e Applying
"With this clay make a model of a plant cell."	Model Building
"What would be a fair solution to this problem?"	Evaluating
"Which of the two paintings do you think is more unique?"	Judging .
"From what we have learned, what other examples of romantic music can you cite?"	Applying a Principle
"What do you think might happen if we placed the saltwater fish the tank of fresh water?"	in Hypothesizing

Compare and Contrast Questioning Strategy

1.	Gather the necessary information through reading, observing, listening and/or experimenting. (Input)
2.	According to which attributes, are they similar? (Process)
3.	According to which attributes, are they different? (Process)
4.	What similarities and differences seem most significant? (Application) Why? (Process)
5.	What categories or patterns do you see in the significant similarities and differences? (Application)
6.	What interpretations, conclusions or generalizations are suggested by these significant similarities and differences? (Application)

Part IV Metacognition: Becoming Aware of Our Habits of Mind

How Can Students Become Alert to Opportunities to Employ Habits of Mind?

How Do Students Become Aware of Their Own Patterns of Intellectual Behavior?

How Can Students Describe Their Own Processes?

Opportunities To Become Aware Of, Practice And Apply Habits Of Mind

Some questions may be designed to call attention to, awareness of and reflection on the use of one or more of the Habits of Mind. Following are some examples:

• Prior to beginning a learning activity, questions may be posed to cue and focus the importance of and employment of the one or more of the Habits of Mind:

"As you anticipate your projects, which of the Habits of Mind might we need to use?"

"In working these math problems, which of the Habits of Mind will help us?

"As we are reading, which of the Habits of Mind will we be using to help understand the story?"

• After a learning activity, questions may be posed to cause reflection on and synthesis of the Habits of Mind.

"As you reflect on your work on this project, which of the Habits of Mind did you find yourself using?"

"As you were solving these problems, which of the Habits of Mind did you employ?"

"As you were working in groups to design a plan, what metacognitive strategies did you use to monitor your performance of the Habits of Mind?"

• Transference and applications of the Habits of Mind to other settings and situations may also be cued through well constructed questions:

"In what other classes might you use these Habits of Mind?"

"What other situations in your life would your use of these Habits of Mind be beneficial?"

"In what careers or professions would people have to draw forth these Habits of Mind?"

Some intriguing questions might be posed to stimulate discussion of the Habits of Mind:

"How might an intelligent person use the Habits of Mind to choose a doctor?"

"How would the Habits of Mind be used in purchasing an automobile?"

"Which of the Habits of Mind would be helpful in intelligently reading a newspaper (or watching television)?"

Mediating the Metacognitive

Try to solve this problem in your head:

How much is one half of two plus two?

Did you hear yourself talking to yourself? Did you find yourself having to decide if you should take one half of the first two (which would give the answer, three) or if you should sum the two's first (which would give the answer, two)?

If you caught yourself having an "inner" dialogue inside your brain, and if you had to stop to evaluate your own decision making/problem-solving processes, you were experiencing METACOGNITION.

Occurring in the neocortex and therefore thought by some neurologists to be uniquely human, metacognition is our ability to know what we know and what we don't know. It is our ability to plan a strategy for producing what information is needed, to be conscious of our own steps and strategies during the act of problem solving, and to reflect on and evaluate the productiveness of our own thinking. While "inner language," thought to be a prerequisite, begins in most children around age five, metacognition is a key attribute of formal thought flowering about age eleven. Interestingly, not all humans achieve the level of formal operations (Chiabetta, 1976). And as Alexander Luria, the Russian psychologist found, not all adults metacogitate (Whimbey, 1976).

We often find students following instructions or performing tasks without wondering why they are doing what they are doing. They seldom question themselves about their own learning strategies or evaluate the efficiency of their own performance. Some children virtually have no idea of what they should do when they confront a problem and are often unable to explain their strategies of decision making (Sternberg and Wagner, 1982). There is much evidence, however, to demonstrate that those who perform well on complex cognitive tasks, who are flexible and persevere in problem solving, who consciously apply their intellectual skills, are those who possess well-developed metacognitive abilities (Bloom, & Broder, 1950), (Brown, 1978), (Whimbey, 1980). They are those who "manage" their intellectual resources well: 1) their basic perceptual-motor skills; 2) their language, beliefs, knowledge of content, and memory processes; and 3) their purposeful and voluntary strategies intended to achieve a desired outcome (Aspen Institute, 1982).

If we wish to install intelligent behavior as a significant outcome of education, then instructional strategies, purposefully intended to develop children's metacognitive abilities, must be infused into our teaching methods, staff development, and supervisory processes (Costa, 1981). Interestingly, DIRECT instruction in metacognition may NOT be beneficial. When strategies of problem solving are imposed by the teacher rather than generated by the students themselves, their performance may become impaired. Conversely, when students experience the need for problem solving strategies, induce their own, discuss and practice them to the degree that they become spontaneous and unconscious, their metacognition seems to improve (Sternberg and Wagner, 1982). The trick, therefore, is to teach metacognitive skills without creating an even greater burden on their ability to attend to the task. Probably the major components of metacognition are developing a plan of action, maintaining that plan in mind over a period of time, then reflecting back on and evaluating the plan upon its completion. Planning a strategy before embarking on a course of action assists us in keeping track of the steps in the sequence of planned behavior at the conscious awareness level for the duration of the activity. It facilitates making temporal and comparative judgments, assessing the readiness for more or different activities, and monitoring our interpretations, perceptions, decisions and behaviors. An example of this would be what superior teachers do daily: developing a teaching strategy for a lesson, keeping that strategy in mind throughout the instruction, then reflecting back upon the strategy to evaluate its effectiveness in producing the desired student outcomes.

Rigney (1980) identified the following self-monitoring skills as necessary for successful performance on intellectual tasks:

- Keeping one's place in a long sequence of operations;
- Knowing that a subgoal has been obtained; and
- Detecting errors and recovering from those errors either by making a quick fix or by retreating to the last known correct operation.

Such monitoring involves both "looking ahead" and "looking back." Looking ahead includes:

- Learning the structure of a sequence of operations, Identifying areas where errors are likely;
- Choosing a strategy that will reduce the possibility of error and will provide easy recovery; and
- Identifying the kinds of feedback that will be available at various points, and evaluating the usefulness of that feedback.

Looking back includes:

- Detecting errors previously made;
- Keeping a history of what has been done to the present and thereby what should come next;
 and
- Assessing the reasonableness of the present immediate outcome of task performance.

A simple example of this might be drawn from a reading task. It is a common experience while reading a passage to have our mind "wander" from the pages. We "see" the words but no meaning is being produced. Suddenly we realize that we are not concentrating and that we've lost contact with the meaning of the text. We "recover" by returning to the passage to find our place, matching it with the last thought we can remember, and, once having found it, reading on with connectedness. This inner awareness and the strategy of recovery are components of metacognition.

STRATEGIES FOR ENHANCING METACOGNITION*

Following are a dozen suggestions that teachers of any grade level can use to enhance metacognition. Whether teaching vocational education, physical education, algebra, or reading skills, teachers can promote metacognition by using these and similar instructional techniques.

1. STRATEGY PLANNING

PRIOR to any learning activity, teachers will want to take time to develop and discuss strategies and steps for attacking problems, rules to remember, and directions to be followed. Time constraints, purposes, and ground rules under which students must operate should be developed and "interiorized". Thus, students can better keep these in mind during and evaluate their performance after the experience.

^{*} For several of these techniques I am deeply indebted to Fred Newton, Multnomah County (Oregon) Superintendent of Schools Office: Juanita Sagan, a therapist in Oakland, California: and Ron Brandt of A.S.C.D.

DURING the activity, teachers can invite students to share their progress, thought processes, and perceptions of their own behavior. Asking students to indicate where they are in their strategy, to describe the "trail" of thinking up to that point, and what alternative pathways they intend to pursue next in the solution of their problem, helps them become aware of their own behavior. (It also provides the teacher with a diagnostic "cognitive map" of the student's thinking which can be used to give more individualized assistance.)

Then, AFTER the learning activity is completed, teachers can invite students to evaluate how well those rules were obeyed, how productive were the strategies, whether the instructions were followed correctly, and what would be some alternative, more efficient strategies to be used in the future.

I know a kindergarten teacher who begins and ends each day with a class meeting. During these times, children make plans for the day. They decide upon what learning tasks to accomplish and how to accomplish them. They allocate classroom space, assign roles, and develop criteria for appropriate conduct. Throughout the day the teacher calls attention to the plans and ground rules made that morning and invites students to compare what they are doing with what was agreed. Then, before dismissal, another class meeting is held to reflect on, evaluate, and plan further strategies and criteria.

2. QUESTION GENERATING

Regardless of the subject area, it is useful for students to pose study questions for themselves prior to and during their reading of textual material. This self-generation of questions facilitates comprehension. It encourages the student to pause frequently and perform a "self-check" for understanding, to determine whether or not comprehension has occurred. If, for example: they know the main characters or events; they are grasping the concept; it "makes sense"; they can relate it to what they already know; they can give other examples or instances; they can use the main idea to explain other ideas; or they can use the information in the passage to predict what may come next. They then must decide what strategic action should be taken to remove obstacles that thereby increase comprehension. This helps students become more self-aware and to take conscious control of their own studying (Sanacore, 1984).

3. CONSCIOUS CHOOSING

Teachers can promote metacognition by helping students explore the consequences of their choices and decisions prior to and during the act of deciding. Students will then be able to perceive causal relationships between their choice, their actions, and the results they achieved. Providing nonjudgmental feedback about the effects of their behaviors and decisions on others and on their environment helps students become aware of their own behaviors. For example, a teacher's statement, "I want you to know that the noise you're making with your pencil is disturbing me," will better contribute to metacognitive development than the command, "John, stop tapping your pencil!"

4. DIFFERENTIATED EVALUATING

Teachers can enhance metacognition by causing students to reflect upon and categorize their actions according to two or more sets of evaluative criteria. An example would be: inviting students to distinguish between what was done that day that was was helpful and hindering; what they liked and didn't like; or what were plusses and minuses of the activity. Thus, students must keep the criteria in mind, apply them to multiple classification systems, and justify their reasons accordingly.

5. TAKING CREDIT

Teachers may cause students to identify what they have done well and invite them to seek feedback from their peers. The teacher might ask, "What have you done that you're proud of?" "How would you like to be recognized for doing that?" (name on the board, hug, pat on the back, handshake, applause from the group, etc.). Thus students will become more conscious of their own behavior and apply a set of internal criteria for that behavior which they consider "good."

6. OUTLAWING "I CAN'T"

Teachers can inform students that their excuses of "I can't," "I don't know how to," or "I'm too slow to" are unacceptable behaviors in the classroom. Rather, having students identify what information is required, what materials are needed, or what skills are lacking in their ability to perform the desired behavior is an alternative and acceptable response. This helps students identify the boundaries between what they know and what they need to know. It develops a perservering attitude and enhances the student's ability to create strategies that will produce needed data.

7. PARAPHRASING OR REFLECTING BACK STUDENT IDEAS

Paraphrasing, building upon, extending, and using student ideas can make students conscious of their own thinking. Some examples might be by saying: "What your telling me is. . .," or "What I hear in your plan are the following steps. . .," or "Let's work with Peter's strategy for a moment."

Inviting students to restate, translate, compare, and paraphrase each other's ideas causes them to become not only better listeners of other's thinking, but better listeners to their own thinking as well.

8. LABELING STUDENT BEHAVIORS

When the teacher places labels on students' cognitive processes, it can make them conscious of their own actions: "What I see you doing is making out a plan of action for. . ."; "What you are doing is called an experiment."; or "You're being very helpful to Mark by sharing your paints. That's an example of cooperation."

9. CLARIFYING STUDENT TERMINOLOGY

Students often use "hollow," vague, and nonspecific terminology. For example, in making value judgments students might be heard saying: "It's not fair. . ."; "He's too strict"; or "It's no good." Teachers need to get in the habit of clarifying these values: "What's TOO strict?" "What would be more fair?"

We sometimes hear students using nominalizations: "They're mean to me." (Who are they?) "We had to do that." (Who is we?) "Everybody has one." (Who is everybody?" Thus, clarifying causes students to operationally define their terminology and to examine the premise on which their thinking is based. It is desirable that, as a result of such clarifying, students would become more specific and qualifying in their terminology.

For older children, above age eleven or so, it appears helpful to invite them to clarify their problem-solving processes. Causing them to describe their thinking while they are thinking seems to beget more thinking. Some examples might be: inviting students to talk aloud as they are solving a problem; discussing what is going on in their heads, for example, when they confront an unfamiliar word while reading; or what steps they are going through in deciding whether to buy some article at the store. After solving a problem, the teacher can invite a clarification of the processes used: "Sarah, you figured out that the answer was 44; Shawn says the answer is 33. Let's hear how you came up with 44; retrace your steps for us." Thus clarifying helps students to reexamine their own problem-solving processes, to identify their own errors and to self-correct. The teacher might ask a question such as: "How much is three plus four?" The student may reply, "12." Rather than merely correcting the student, the teacher may choose to clarify: "Gina, how did you arrive at that answer?" "Well, I multiplied four and three and got. . . oh, I see, I multiplied instead of added."

10. ROLE PLAYING AND SIMULATIONS

Having students assume the roles of other persons causes them to consciously maintain in their head the attributes and characteristics of that person. Dramatization serves as an hypothesis or prediction of how that person would react in a certain situation. This also contributes to the reduction of ego-centered perceptions.

11. JOURNAL KEEPING

Writing and illustrating a personal log or a diary throughout an experience over a period of time causes the student to synthesize thoughts and actions and to translate them into symbolic form. The record also provides an opportunity to revisit initial perceptions, to compare the changes in those perceptions with the addition of more data, to chart the processes of strategic thinking and decision making, to identify the blind alleys and pathways taken, and to recall the successes and the "tragedies" of experimentation (a variation on writing journals would be making video and/or audio tape recordings of actions and performances over time).

12. MODELING

Of all the instructional techniques suggested, the one with the probability of greatest influence on students is that of teacher modeling. Since students learn best by imitating the significant adults around them, the teacher who publicly demonstrates metacognition will probably produce students who metacogitate. Some indicators of teacher's public metacognitive behavior might be:

- Sharing their planning by describing their goals and objectives and giving reasons for their actions;
- Making human errors but then being seen to recover from those errors by getting "back on track";
- Admitting they do not know an answer but designing ways to produce an answer;
- Seeking feedback and evaluation of their actions from others;
- Having a clearly stated value system and making decisions consistent with that value system;
- Being able to self-disclose by using adjectives that describe their own strengths and weaknesses; and
- demonstrating understanding and empathy by listening to and accurately describing the ideas and feelings of others.

EVALUATING GROWTH IN METACOGNITIVE ABILITIES

We can determine if students are becoming more aware of their own thinking as they are able to describe what goes on in their head when they are thinking. When asked, they can list the steps and tell where they are in the sequence of a problem solving strategy. They can trace the pathways and dead ends they took on the road to a problem solution. They can describe what data are lacking and their plans for producing those data.

We should see students perservering more when the solution to a problem is not immediately apparent. This means that they have systematic methods of analyzing a problem, knowing ways to begin, knowing what steps must be performed and when they are accurate or are in error. We should see students taking more pride in their efforts, becoming self-correcting, striving for craftsmanship and accuracy in their products, and becoming more autonomous in their problem-solving abilities.

Teaching for thinking is becoming the great educational emphasis for the 80's. Metacognition is an attribute of the "educated intellect." It must be included if thinking is to become a durable reality for the 90's and beyond.

REFERENCES

- Aspen Systems (1982). *Topics in Learning and Learning Disabilities*. Gaithersburg, MD: Aspen Systems Corp. April, 2(1).
- Bloom, B. S., & Broder, L. J. (1950). *Problem-Solving Processes of College Students*. Chicago, IL: University of Chicago Press.
- Brown, A. L. (1978). Knowing when, where, and how to remember: A problem of metacognition. In Glaser, (Ed.), *Advances in Instructional Psychology*. Hillsdale, NJ: Erlbaum.
- Chiabetta, E. L. A. (1976). Review of piagetian studies relevant to science instruction at the secondary and college level. *Science Education*, 60, 253-261.
- Costa, A. L. (1981). Teaching for intelligent behavior. Educational Leadership, October, 39(1).
- Rigney, J. W. (1980). Cognitive learning strategies and qualities in information processing. In R. Snow, P. Federico & W. Montague (Eds.), *Aptitudes, Learning, and Instruction*, Volume 1. Hillsdale, NJ: Erlbaum.
- Sanacore, J. (1984) Metacognition and the improvement of reading: Some important links. *Journal of Reading*, May, 706-712.
- Sternberg, R., & Wagner, R. (1982). Understanding intelligence: What's in it for education? Paper submitted to the National Commission on Excellence in Education.
- Whimbey, A. (1980). Students can learn to be better problem solvers. Educational Leadership, April, 37(7).
- Whimbey, A., & Whimbey, L. S. (1976). Intelligence Can Be Taught. New York: Bantam Books.

Engaging And Sustaining Metacognition

1. Pose Questions Which Cause The Student To Check For Accuracy?

- "How do you know your are right?"
- "What other ways can you prove that you are correct?

2. Pause And Clarify But Don't Interrupt

- "Explain what you mean when you said you 'just figured it out'".
- "When you said you started at the beginning, how did you know where to begin?"

3. Provide Data, Not Answers

- "I think you heard it wrong; let me repeat the question......"
- "You need to check your addition."

4. Resist Making Value Judgments Or Agreeing With Students' Answers

- "So, your answer is 48. Who came up with a different answer?"
- "That's one possibility. Who solved it another way?"

5. Stay Focused On Thinking Processes

- "Tell us what strategies you used to solve the problem"
- "What steps did you take in your solution?"
- "What was going on inside your head as you solved the problem?"

6. Encourage Persistence

• "C'mon, you can do it!"

Do You Speak Cogitare?

Embedded in the vocabulary, inflections, and syntax of the language of adults lie the cognitive processes derived by children. Research over many years has demonstrated the close, entwined relationship of language and thought. From birth, children imitate the sounds, then words, phrases and thought patterns of the significant adults who mediate their environment (Vygotsky, 1962) (Feuerstein, 1980) (Flavell, 1977).

Through interaction with adults during children's formative, early years, they develop the foundations of thought that endure throughout their lifetimes. Environments and interactions that demand and provide models of more complex language and thought contribute to the ability to handle complex thinking processes as children mature (Sternberg and Caruso, 1985).

In the past two decades there has been a significant transformation of the American family. With increases in the amount of time passively spent watching television, both parents working or traveling, single parent families, children giving birth to children, and "latch-key kids," family life sometimes lacks meaningful verbal interaction. Some children are parentally and therefore linguistically deprived. When children enter school lacking the complexity of language and thought needed to master academic demands, they are often disadvantaged (Bronfenbrenner, 1975).

With the recent educational emphasis on the education of the intellect, we wish to have students acquire the ability and inclination to perform discrete thinking skills, cognitive processes, and problem solving strategies (Ennis, 1985). Success in school and future careers is dependent upon autonomous application of the skills of problem solving, innovation, and decision making.

Educators often assume that students know how to perform these skills. They are asked daily by the teacher or the instructional materials, for example, to summarize, to draw conclusions, to infer, to categorize or to compare. Yet these processes are often omitted as essential skills to be taught. Students may be at a loss to know what to do when the task is to classify a word list, to infer the author's intent in a reading passage, or to draw conclusions from a set of data.

Adults in the child's environment can subtly and carefully compose language using selected syntax, vocabulary, and inflection to stimulate, engage, and practice desired cognitive processes in children. Teachers can consciously select key cognitive terminology so that students will encounter those words in common, everyday dialogue. We can formulate questions to cause students to exercise certain cognitive functions. We can provide data which students must interpret for themselves. We can remain non-judgmental so that children must make their own judgments. It is believed that if adults will monitor their own language for the embedment of cognitive terminology and if they will seize opportunities for thinking in the day-to-day interactions of the classroom, a positive effect will result in students' cognitive structures which, in turn, will produce an increase in their academic success.

What follows are some suggestions for monitoring our language and some ways to enhance children's thinking during the daily interactions of classroom life.

1. Thinking Words

Teachers are often heard to admonish students to think: "Think hard!" Students are sometimes criticized for not having the inclination to do so: "these kids just go off without thinking."

The term "think" is a vague abstraction covering a wide range of mental activities. Two possible reasons why students fail to engage in it are: 1) the vocabulary is a foreign language to them, and 2) they may not know how to perform the specific skills that term implies. When

adults speak COGITARE – using specific cognitive terminology and instruct students in ways to perform those skills – they will be more inclined to use them (Astington & Olson, 1990). For example:

Instead of saying:	Speak COGITARE by saying:	
"Let's look at these two pictures"	"Lets COMPARE these two pictures."	
"What do you think will happen when?"	"What do you PREDICT will happen when?"	
"How can you put into groups?"	"How can you CLASSIFY?"	
"Lets work this problem."	"Let's ANALYZE this problem."	
"What do you think would have happened if"	"What do you SPECULATE would have happened if"	
"What did you think of this story?"	"What CONCLUSIONS can you draw about this story?"	
"How can you explain?"	"What HYPOTHESES do you have that might explain?"	
"How do you know that's true?"	"What EVIDENCE do you have tosupport?"	

As children hear these cognitive terms in everyday use and experience the cognitive processes that accompany these labels, they will internalize the words and use them as part of their own vocabulary. Teachers will also want to give specific instruction in those cognitive functions so that students possess experiential meaning along with the terminology (Beyer, 1985).

"How could you APPLY this...?"

2. Discipline

"How else could you use this...?"

When disciplining children, teachers often make the decisions about which behaviors to desist and which to reinforce. Teachers can speak COGITARE – posing questions that cause children to examine their own behavior, search for the consequences of that behavior, and choose more appropriate actions for themselves (Bailis and Hunter, 1985). For example:

Instead of saying:	Speak COGITARE by saying:
"Be quiet!"	"The noise you're making is disturbing us. Is there a way you can work so that we don't hear you?"
"Sarah, get away from Shawn!"	"Sarah, can you find another place to do your best work?"
"Stop interrupting!"	"Since it's Maria's turn to talk what do you need to do?"
"Stop running!"	Why do you think we have the rule about always walking in the halls?"

Discussions with children about appropriate behavior, classroom and school rules, and courtesy will be necessary if they are to learn appropriate alternatives. Then, when they occasionally forget, they can go back in their memory for what was learned. Soon they will monitor their own behavior – an important dimension of metacognition (Costa, 1984).

3. Provide Data, Not Solutions

Sometimes we rob children of the opportunity to take charge of their own behavior by providing solutions, consequences, and appropriate actions for them. If adults would merely provide data as input for children's decision making, we can cause them to act more autonomously, to become aware of the effects of their behavior on others, and to become more empathic by sensing the verbal and non-verbal cues from others. We can speak COGITARE by giving data, divulging information about ourselves, or sending "I" messages:

"I want you to know that your pencil tapping is disturbing me."	
"It hurts my ears."	
"I liked it when you came in so quietly and went right to work."	
"I want you to know that gum-chewing in my class disturbs me."	

Some children, of course, will be unable to detect these data as cues for self-control. In such cases, we may have to step in an~ provide more specific directions for appropriate behavior. We can start, however, by allowing the student to control him or herself.

4. Classroom Management

When communicating instructions on how to perform a task, teachers can SPEAK COGITARE which will cause students to analyze a task, decide On what is needed, then act autonomously. Too often teachers may give all the information so that students merely perform the task without having to infer meaning. For example:

Instead of saying:	Speak COGITARE by saying:
"For our field trip, remember to bring spending money, comfortable shoes and a warm jacket."	"What must we remember to bring with us an our field trip?"
"The bell has rung; it's time to go home. Clear off your desks, slide your chairs under the desk quietly, and line up at the door."	"The bell has rung. What must we do to get ready to go home?"
"Get 52 cups, 26 scissors and 78 sheets of paper. Get some butcher paper to cover the desks."	"Everyone will need two paper cups, a pair of scissors and three sheets of paper. The desk tops will need to be protected. Can you figure out what you'll need to do?"

"Remember to write you name in the upper right hand corner of your paper."

"So that I easily can tell who the paper belongs to, what must you remember to do?"

Speak COGITARE by saving-

"You need to start each sentence with a capital and end with a period."

"This sentence would be complete with two additions. Can you figure out what they are?"

5. Probing For Specificity

When we hear-

Oral language is filled with omissions, generalizations, and vaguenesses. Our language is conceptual rather than operational, value-laden, and sometimes deceitful. Speaking COGITARE causes others to define their terms, become specific about their actions, make precise comparisons, and use accurate descriptors (Laborde, 1984).

Being alert to certain vague or unspecified terms cues our need to speak COGITARE the language of specifics, these vague terms fall into several categories:

- 1) Universals including "always," "never," "all," or "everybody";
- 2) Vague action verbs - "know about," "understand," "appreciate";
- Comparators such as "better," "newer," "cheaper," "MORE nutritious"; 3)
- 4) Unreferenced pronouns - "they," "them," "we";
- 5) Unspecified groups - "the teachers," "parents," "things";
- 6) Assumed rules or traditions including "ought," "should," or "must."

When such words or phrases are heard in the speech or writings of others, we speak

COGITARE by having them specify, define, or reference their terms:

when we hear.	speak COGITARE by saying:
"He NEVER listens to me."	"Never?" "Never, ever?"
"Everybody has one."	"Everybody?" "Who, exactly?"
"THINGS go better with"	"Which things specifically?"
"Things GO better with"	"Go? Go – how specifically?"
"Things go BETTER with"	"Better than what?"
"You SHOULDN'T do that"	"What would happen if you did?"
"The PARENTS"	"Which parents?"
"I want them to UNDERSTAND"	"What exactly will they be doing if they understand"
"This cereal is MORE NUTRITIOUS"	"More nutritious than what?"
"THEY won't let me"	"Who is 'they'?"
"ADMINISTRATORS"	"Which administrators?"

"Critical thinkers" are characterized by their ability to use specific terminology, to refrain from overgeneralization, and to support their assumptions with valid data. Speaking COGITARE by having children use precise language develops those characteristics (Ennis, 1985).

6. Metacognition

Thinking about thinking begets more thinking (Costa, 1984). Having children describe the mental processes they are using, the data they are lacking, and the plans they are formulating causes them to think about their own thinking – to metacogitate. When teachers speak COGITARE they cause the covert thought processes that students are experiencing to become overt. Whimbey refers to this as "Talk Aloud Problem Solving" (Whimbey, 1985).

When children say:	Speak COGITARE by saying:	
"The answer is 43 pounds, 7 ounces,"	"Describe the steps you took to arrive at that answer."	
"I don't know how to solve this problem."	"What can you do to get started?"	
"I'm comparing"	"What goes on in your head when you compare?"	
"I'm ready to begin."	"Describe your plan of action."	
"We're memorizing our poems."	"What do you do when you memorize?"	
"I like the large one best."	"What criteria are you using to make your choice?"	
"I'm finished."	"How do you know you're correct?"	

As teachers probe students to describe what's going on inside their head when thinking is taking place, students become more aware of their own thinking processes; and, as they listen to other students describe their metacognitive processes, they develop flexibility of thought and an appreciation that there are several logical ways to solve the same problem.

7. Presuppositions

Language may be interpreted in terms of its "surface" meaning and its "structural" meaning. Surface meaning refers to the word definitions, syntax, semantics, grammar, verb forms, modifiers, etc. Structural meaning, on the other hand, refers to the subtle nuances, connotations, feelings and images conveyed by the words.

A presupposition is a hidden, covert, implicit meaning buried within the structure of the statement or sequence of language. For example: "Even Richard could pass that course." Hidden with the sub-structure of this sentence are several implied meanings: That Richard is not too bright a student, and further, that the course must be a cinch! Neither of these pieces of information is overtly present in the surface structure of the sentence. It does not say, "Even Richard, who is not too bright a student, could pass that course which is a cinch!" The implicit meaning or presupposition, however, is blatant (Elgin, 1980).

Over time, these messages "seep" into children's awareness below the level of consciousness. Often they are unaware that such verbal violence is being used against them. They feel hurt or insulted in response to language that may sound, on the surface, like a compliment. Interestingly, people behave in response to other's perceptions of them – they

behave as if they are expected to behave that way. Over time, these negative presuppositions accumulate and produce in students poor self-esteem and a negative self-concept as a thinker. Their negative behavior follows.

Interestingly, we can also use POSITIVE presuppositions. Teachers can purposely select language to convey a positive self-concept as a thinker: "As you plan your project, what criteria for your research report will you keep in mind?" Notice the positive presuppositions: that you are planning, that you know the criteria for the research report, that you can keep them in your mind, and that you can metacognitively apply them as you work.

Teachers never purposely set out to deprecate student's self-esteem. Unconsciously, however, these negative presuppositions may creep into the language of classroom interaction. Teachers who speak COGITARE will monitor their own language for their positive rather than negative presuppositions.

Instead of saying:	Speak COGITARE by saying:	
Why did you forget to do your assignment?	As you plan for your assignment, what materials will you need?	
Why don't you like to paint?	We need you to paint a picture to add to our gallery of outstanding artists.	
Did you forget again?	Tell us what you do to help you remember.	
When you will grow up?	As we grow older, we learn how to solve these problems from such experiences.	
Here, I'll give you an easier puzzle; then you'll be successful.	As the puzzles get more difficult, how will you use planning like this again?	

8. The Study Of Cogitare

Like any language, COGITARE is dynamic. It can be analyzed, refined, transmitted to others, created, and can became archaic. Students, too, can explore the linguistic structure of COGITARE.

We can, for example, focus on word clusters or syntactical cues within the language that give clues as to what cognitive operations those words evoke. This is sometimes referred to as discourse analysis. It includes such cognitive processes as concept formation, relationship identification, and pattern recognition.

For example, students can search for relationships as a way of "linking" information. They can find the word or word cluster that cues the thinking process of that relationship. This process is called "relationship identification." It requires students to:

Identify separate ideas that are related within a sentence.

Identify the type of relationship between the ideas: addition, comparison, causality, sequence, or definition.

Identify the linguistic cue for the performance of that cognitive relationship (and, or, but, after, while, etc.).

COGNITIVE PROCESS	TYPE OF RELATIONSHIP	EXAMPLE OF LINGUISTIC CUE
ADDITION	Two ideas go together in same way.	"He is intelligent AND he is kind."
COMPARISON	Common attributes are shared.	"Shaun AND Sarah BOTH play the violin."
CONTRAST	Two ideas don't go together.	"He is healthy BUT he doesn't exercise."
CAUSALITY	One event causes another.	"Peter went home BECAUSE his work was finished."
SEQUENCE	One event happens before, during or after another event.	"He went home THEN he went to the library."

It is believed that teaching students to be alert to the cognitive process embedded in written and spoken language can help them become aware of their own language and thought. It can help them decode the syntactic, semantic and rhetorical signals found in all languages, and it can help them integrate the complex interaction of language, thought, and action (Marzano and Hutchins, 1985).

In Summary

Our language is a tool. As a tool we can use it to enhance others. Speaking COGITARE simply means that we consciously use our language to evoke thinking in others by:

- 1. Using specific cognitive terminology rather than vague abstract terms.
- 2. Posing questions that cause children to examine their own behavior, search for the consequences of that behavior, and choose more appropriate actions for themselves.
- 3. Giving data, divulging information about ourselves, or sending "I" messages so that students must "process" the information.
- 4. Causing students to analyze a task, decide on what is needed, then act autonomously.
- 5. Causing others to define their terms, become specific about their actions, make precise comparisons, and use accurate descriptors.
- 6. Causing the covert thought processes that students' are experiencing to become overt (metacognition).
- 7. Employing positive presuppositions to enhance self-concept as a thinker.
- 8. Helping children study and become alert to the cues in the structure of language which evoke thought processes.

By asking questions, selecting terms, clarifying ideas and processes, providing data, and withholding value judgments we can stimulate and enhance the thinking of others. COGITARE is the language we use to grow intelligent behavior.

References

- Astington, S., & Olson, D. (1990). Metacognition and metalinguistic language: Learning to talk about thought. Applied Psychology: An International Review, 39(1), 77-87.
- Bailis, & Hunter, M. (1985). Do your words get them to think? Learning, August, 14(1).
- Beyer, B. (1985). Practical strategies for the direct teaching of thinking skills. In A. L. Costa (Ed.), *Developing Minds: A Resource Book for Teaching Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Bronfenbrenner, U. (1975). Influences on Human Development. Hillsdale, IL: Erlbaum.
- Costa, A. (1984). Mediating the metacognitive. *Educational Leadership*, November, 42, 3, 57-62.
- Elgin, S. (1980). The Gentle Art of Verbal Self Defense. United States: Dorset Press.
- Ennis, R. (1985). Goals for a critical thinking curriculum. In A. Costa (Ed.), *Developing Minds: A Resource Book for Teaching Thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Feuerstein, R. (1980). Instrumental Enrichment. Baltimore, MD: University Park Press.
- Flavell, J. (1977). Cognitive Development. Englewood Cliffs, NJ: Prentice-Hall.
- Laborde, G. (1984). Influencing with Integrity. Palo Alto, CA: Syntony Press.
- Marzano, R., & Hutchins, C. L. (1985). *Thinking Skills: A Conceptual Framework*. Aurora, CO: Mid-continent Regional Educational Laboratory.
- Sternberg, R., & Caruso, S. (1985). Practical modes of knowing. In E. Eisner (Ed.), *Learning and Teaching the Ways of Knowing*. 84th Yearbook of the National Society for the Study of Education. Chicago, IL: University of Chicago Press.
- Vygotsky, L. S. (1962). Thought and Language. Cambridge, IL: Massachusetts Institute of Technology Press.
- Whimbey, A. (1985). Test results for teaching thinking. In A. Costa (Ed.), *Developing Minds:*A Resource Book for Teaching Thinking. Alexandria, VA: Association for Supervision and Curriculum Development.

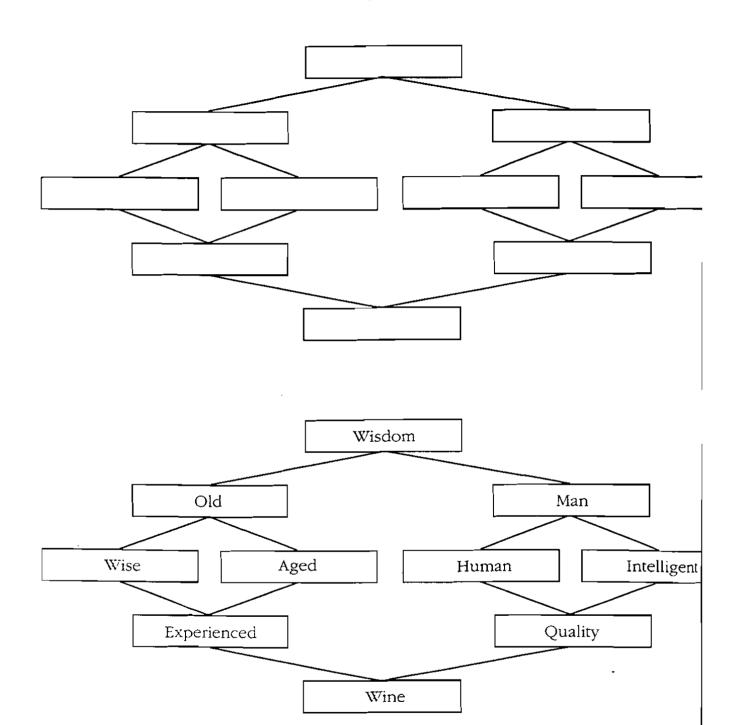
Displayed Metacognition

Another way to help students think about their own thinking is to represent various thought processes visually. This provides yet another way for students to understand and use the steps and strategies of thinking skills.

In addition to the compare/contrast chart presented in the previous section, following are several more ways of displaying thinking.

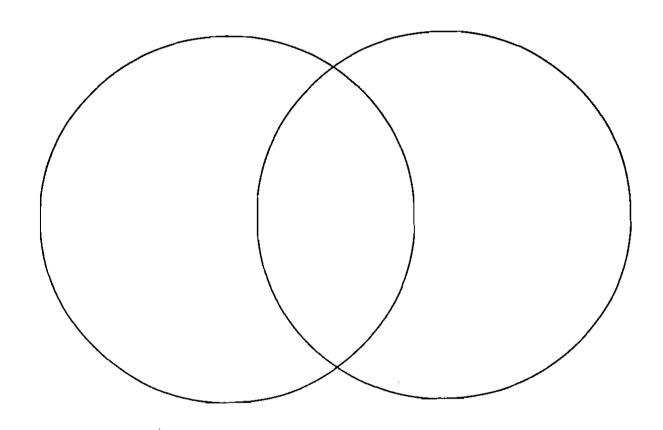
Have students solve problems, then draw diagrams of the steps and interrelationships of their thinking processes.

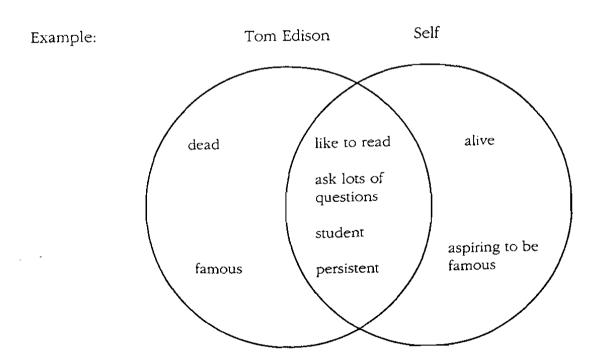
Thought Tree



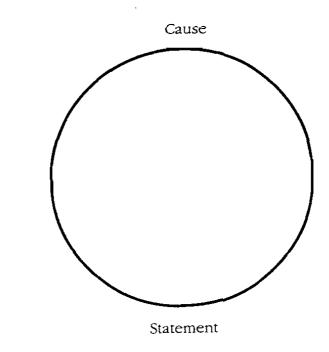
Comparison: "Wisdom is like wine because both improve with age."

Venn Diagram

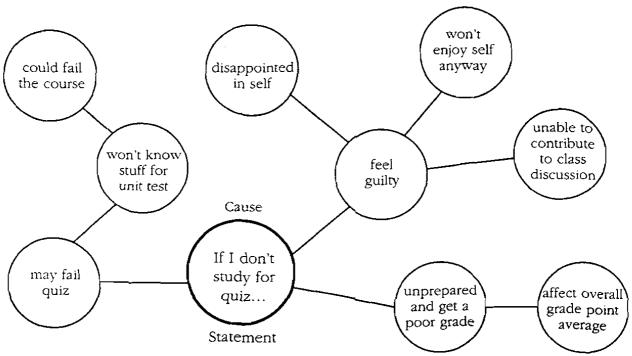




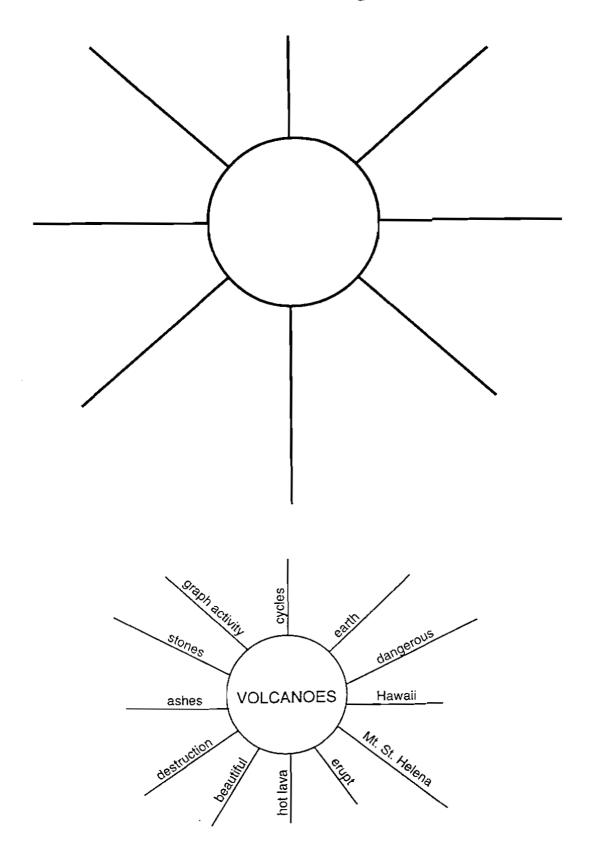
Cause and Effect Circles



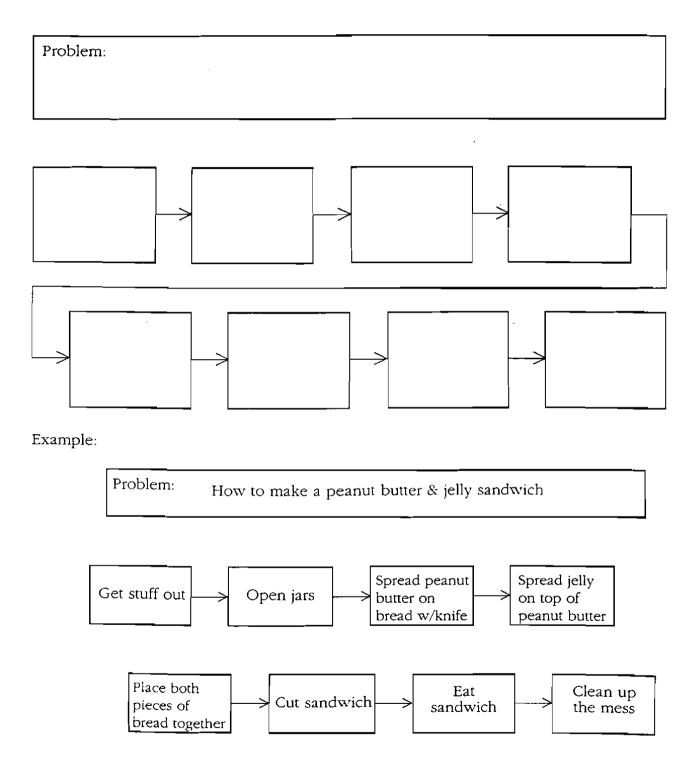
Example:



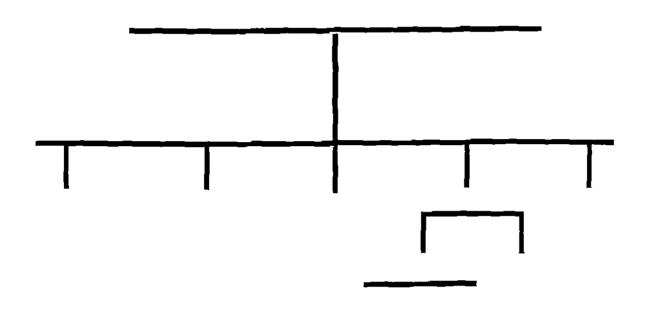
Brainstorming

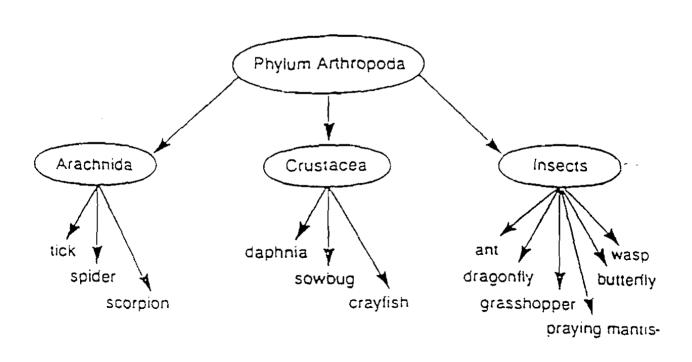


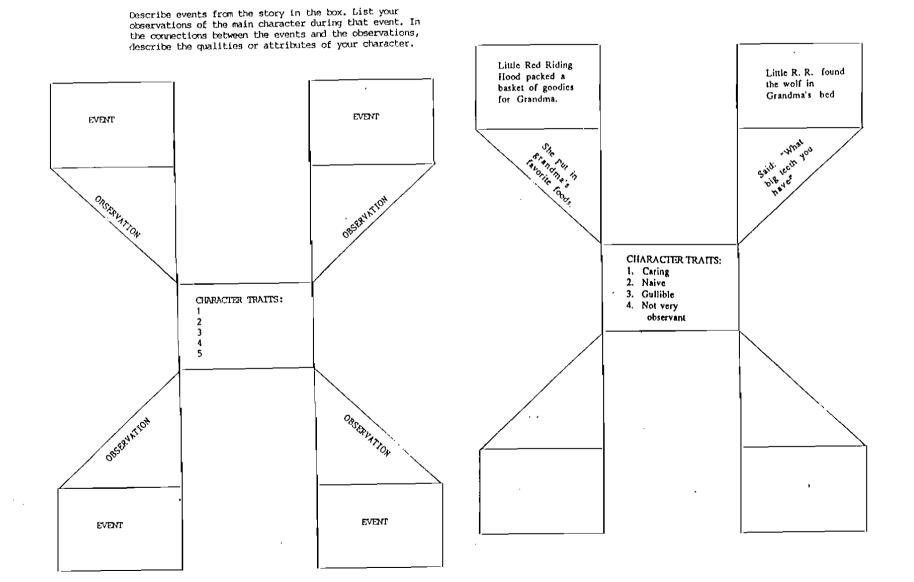
Sequencing



Classifying







References

- Bellanca, J. (1991). *The Cooperative Think Tank.* Arlington Heights, Ill: Skylight Publishing Inc.
- Black, H. and Parks, S. (1991). Organizing Thinking, Books I and II. Pacific Grove, CA: Critical Thinking Press and Software.
- Clark, J. (1991). Patterns of Thinking. Needham Heights, MA: Alyn and Bacon.
- Hyerle, D. (1996). *Thinking Maps: Seeing is Understanding. Educational Leadership.*December 95/January 96. pp 85-89.
- Hyerle, D. (1996). Visual Tools for Constructing Knowledge. Alexandria, VA: Association for Supervision and Curriculum Development.
- Parks, S. (1997). Process Tools To Enhance Thinking and Learning. In Costa, A. and Liebmann, R. (Eds.) *Supporting the Spirit of Learning When Process is Content.* Thousand Oaks, CA: Corwin Press.

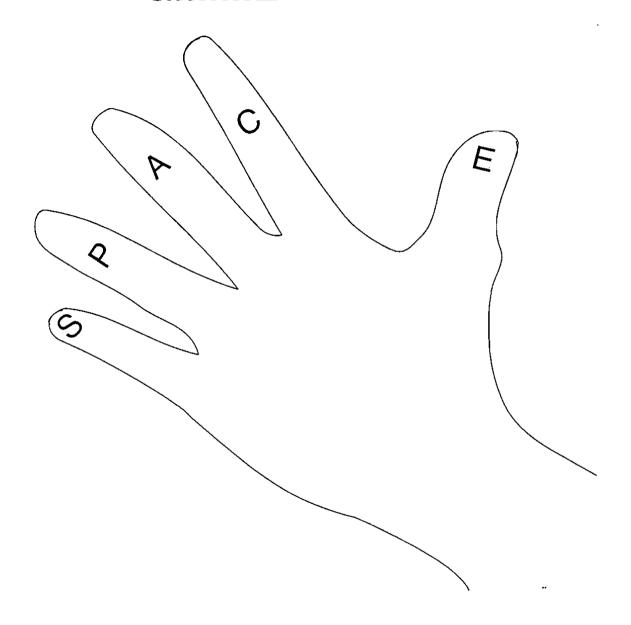
Part V Creating Environments to Support Habits of Mind

What School and Classroom Conditions Encourage Habits of Mind?

How Can an Atmosphere of Trust, Warmth and Risk-Taking be Created and Sustained?

When I feel trust in a relationship	p I	
·		
To create a classroom and schoo taking I	l atmosphere of trust,	warmth, and risk

GIMME SPACE!



SILENCE

Provide data

Accept non-judgmentally

CLARIFY

Empathize

Silence: Using Wait Time

In some classrooms, the teacher dominates the interaction using a rapid-fire pace and lower cognitive level questions. The teacher may wait less than one second after posing a question before doing one of several things: repeating the question, commenting on a student answer, redirecting the question to a new student, answering the question himself or starting a new questioning sequence. Students' answers are often terse, fragmentary or show a lack of confidence with inflected tones. After a student replies, the teacher may wait less than one second before commenting or asking another question. There is little chance for students to have second thoughts or to extend their ideas. Many teachers appear to be programmed to accept one predetermined "right" answer. There is little room left for alternate answers or differing opinions. The message students receive is that "the teacher's way of knowing is the only way of knowing."

RESEARCH HISTORY

The concept of Wait Time was first developed by Dr. Mary Budd Rowe in the late 1960's. In observing classrooms, she noticed that some teachers were using "purposeful pauses" as they conducted lessons and class discussions. She noted students making speculations, holding sustained conversational sequences, posing alternative explanations and arguing over the interpretation of data. She noted positive changes in the affective climate and the quality of classroom interactions. She also noticed an increase in the level of cognitive functioning and academic achievement; and a decrease in the number of behavior problems.

WAIT TIME DEFINED

Wait Time I is the length of time a teacher pauses after asking a question. Wait Time II is the length of time a teacher waits after a student comments or asks a question. A minimum of three seconds of pausing is recommended. With higher level cognitive tasks, five seconds or more of wait time may be required to achieve positive results. Wait Time III is pausing and modeling thoughtfulness after the student asks the teacher a question.

The use of longer pauses in whole group lecture settings has also been examined by Dr. Rowe. Students need mental processing time in information dense subjects like chemistry, physics and geology. Her research indicates that retention and understanding increase when two to three minutes of discussion, note clarification and question raising with seatmates are provided after every eight to ten minutes of instruction. All unresolved student questions are reserved for the last five minutes of the class period.

LEARNING TO CONTROL WAIT TIME

Learning to monitor and control wait time takes patience and some effort. Tape recording lessons and transcribing them with watch in hand is an effective means of gaining insight into your own teaching. This does not interrupt the flow of the lesson and allows you to monitor your language use, pacing and the cognitive level of your questions. Having a peer observe you and give feedback is another means of increasing wait time. In either case be sure to let your students know what you are up to. They will notice the change in the operation of the class and can be enlisted to help you monitor the wait time you provide them and the wait time they provide you and each other.

CLASSROOM CHANGES WITH INCREASED WAIT TIME

- 1. 300-700% increase in the length of student responses.
- 2. The number of unsolicited but appropriate student responses increases.
- 3. Failures to respond decrease.
- 4. Confidence increases—there are fewer inflected responses.
- 5. Speculative responses increase.
- 6. Teacher-centered show & tell decreases; student-student interaction increases.
- 7. Teacher questions change in number and kind:

 The number of divergent questions increase;

 Teachers ask higher level questions (Bloom's Taxonomy); and

There is more probing for clarification.

- 8. Students make inferences & support inferences with data.
- 9. Students ask more questions.
- 10. Contributions by "slow" students increase.
- 11. Disciplinary moves decrease—more students are on task.
- 12. Achievement on logic tests improves.

Providing Data

If one of the objectives of cognitive education is for students to process data by comparing, classifying, making inferences, or drawing causal relationships, then data must be available for the student to process. Facilitating the acquisition of data means that when the teacher perceives the student needs information, or when the student requests additional information, the teacher provides it or makes it possible for the student to acquire the data, facts, or information needed or requested.

The teacher, therefore, creates a climate that is responsive to the student's quest for information. Teachers do this in a variety of ways. Several ways teachers can facilitate data are as follows:

- a. By providing data (feedback) about a student's performance:
 - "No, three times six is not twenty-four. Three times eight is twenty-four."
 - "Yes, you have spelled 'rhythm' correctly."
- b. By providing personal information or data (self-divulgence). (These are often in the form of "I" messages.):
 - "I want you to know that chewing gum in this classroom really disturbs me."
 - "John, your pencil tapping is distracting me."
 - "The way you painted the tree makes me feel like I'm on the inside looking out."
- C. By making it possible for students to experiment with equipment and materials to find data or information for themselves:
 - "Here's a larger test tube if you'd like to see how your experiment would turn out differently."
 - "We can see the film again if you want to check your observations."
- d. By making primary and secondary sources of information accessible:
 - "Mary, this almanac gives information you will need for your report on the world's highest mountain ranges."
 - "Here's the dictionary. The best way to verify the spelling is to look it up."

e. By responding to a student's request for information:

Student: "What's this thing called?"

Teacher: "This piece of equipment is called a bell jar."

f. By surveying the group for its feelings or for input of its information.

"On this chart we have made a list of what you observed in the film. We can keep this chart in front of us so that we can refer to it as we classify our observations."

"Let's go around the circle and share some of the feelings we had when we found out the school board decided to close our school."

g. By labeling a thinking process or behavior:

"That is an hypothesis you are posing, Gina."

"Sharing your crayons like that is an example of cooperation, Mark."

"The question you are asking is an attempt to verify the data."

Knowledge of results is the single most important variable governing the acquisition of skillful habits.

Praising seems best used with only certain students and for certain tasks.

With lower grade level students

While praise may seem to be more appropriate with young, morally immature students, we want to help them progress beyond that stage. Teachers, therefore, must soon abolish praising and replace it with the type of internal motivation system which is consistent with the higher stages of moral development.

Younger children may need more praise than older children. In kindergarten through second or even third grades, most children are compliant and oriented toward conforming to and pleasing their teachers. They are learning classroom and school rules, procedures, and routines, as well how to function as a member of a group. Praise and rewards seem appropriate in the socialization process at an early grade level. As children mature, however, from about grades two to three and beyond, they have learned what they need to know about school and classroom routines and procedures and less time needs to be spent on such conformity. Where a first grade boy might be delighted when his teacher points out his behavior, the same boy in the fifth grade would be horrified if the teacher said, "I like the way John is sitting nice and tall, ready to begin work." Flanders (1970) stated:

"The pupil growth index which involves memory, a relatively low level cognitive task, can tolerate lower levels of teacher indirectness...yet higher levels of cognitive reasoning are associated with more indirect...teacher influence patterns: Creativity appears to flourish most with the most indirect patterns."

Student performance on routine, familiar procedures is not adversely affected by rewards and praise. In fact, when students do not particularly like assignments that are repetitious and of a practice nature, rewards seem to enhance their performance. On the other hand, rewards have a detrimental effect on student performance on tasks requiring higher level problem solving. The learning PROCESS is different from the learning PRODUCT. The process is detrimentally effected by rewards. The effects of rewards differ depending on the extent to which the student has already learned the subject matter. Thus, rewards for tasks already learned are not detrimental because the process of learning had already occurred and the focus is now on learner production of what he or she already knows.

In contrast, the **process** of learning **is** detrimentally affected by rewards. The performance of learning new tasks, skills and processes require cognitive risks and exploration which is inhibited by praise and promised reward. Evidently rewards are best administered in well learned tasks where specific rules need to be followed as opposed to learnings which are in the process of being learned or are problem solving/exploratory in nature. Seatwork, which is of a practice nature, is likely to be facilitated by rewards, while rewards for students learning a new skill are likely to have a detrimental effect.

With low level cognitive tasks

Input or knowledge level questions are used for the purpose of having students confirm or produce an answer from memory or from sensory observations. It is probable that the answer the student gives is predictable and therefore "correct." The teacher's response to the student's answer to an

input question may warrant validation. For example:

Teacher: "What is the largest city in California?"

Student: "San Francisco?"

Teacher: "No, Jane, not San Francisco."

Student: "Los Angeles?"

Teacher: "Yes, Bill, that's correct. Los Angeles is the largest."

SOME GUIDELINES FOR USING PRAISE

If praise is used, there are some guidelines that can help students decrease their dependence on it:

Give the criteria or rationale for the value judgment.

If praise is given, it is important that the criteria for the praise be described. What makes an act "good," or "excellent," must be communicated along with the praise. Thereby, the student understands the reason or criteria that makes the act acceptable and thus that performance can be repeated.

Help students analyze their own answer.

Teacher: "Jane says San Francisco is the largest city in California. Bill says Los Angeles is the largest. Would each of you please tell us what is the population of the two cities? One way to find out is to compare our data."

Most teachers enjoy rewarding and praising their students. Brophy (1981), however, found that the one person in the classroom for whom praise has the most beneficial effect is, indeed, the teacher. It is understandable, therefore, that research studies showing the detrimental effects of rewards are met with resistance.

Much teacher praise is associated with lower pupil nonverbal creativity (Kohn, 1987). Reinforcement through the use of such comments as "uh-huh" and "okay" was positively related to some achievement scores, while frequent use of stronger praise is not (Wallen and Woodke, 1963).

While teachers may have good intentions in using praise or rewards, what is more important is how the student interprets it. That determines whether the reward will have its intended effect. Teachers must be sensitive to individual student's interpretation of rewards and praise and will therefore, choose to praise or reward according to the timing, circumstances, and type of rewards and praise to be given.

CLARIFYING

Clarifying is similar to accepting in that both behaviors reflect the teacher's concern for fully understanding the student's idea. While active acceptance demonstrates that the teacher DOES understand, CLARIFYING means that the teacher DOES NOT understand what the student is saying and, therefore, more information is needed.

When a student uses some terminology, expresses a concept or idea, or asks a question that the teacher does not understand, the teacher may wish to CLARIFY both the CONTENT of that idea AND/OR the PROCESS by which that idea was derived. The teacher may express a lack of understanding of the student's idea and seek further explanation of it. She/he may invite the student to become more specific by requesting the student to elaborate or rephrase the idea, or to seek descriptions of the thinking processes underlying the production of that idea.

The intent of clarifying is to help the teacher better understand the students' ideas, feelings and thought processes (cognitive mapping). Clarifying is NOT a devious way of changing or redirecting what the student is thinking or feeling. It is not a way of directing the class' attention to the "correct answer."

Clarifying is often stated in the form of an interrogative but could also be a statement inviting further illumination. For example:

"Could you explain to us what you mean by 'charisma'?"

"What you are saying is that you'd rather work by yourself than in a group. Is that correct?" "Go over that one more time, Shelley, I'm not sure I understand you."

"You say you are studying the situation. Tell us just exactly whatyou do when you 'study' something."

"Explain to us the steps you took to arrive at that answer."

By **clarifying**, teachers show the students that their ideas are worthy of exploration and consideration; the full meaning, however is not yet understood. Clarifying demonstrates that the teacher is interested in values, and wants to pursue students' thinking.

When a teacher responds to students' comments by encouraging them to elaborate further, it has a positive effect on achievement. Students become more purposeful in their thinking and behaving.

Empathizing

Sometimes students come to school from abusive, drug-dependent, impoverished environments. The emotions and feelings they bring to school affect their learning and motivation.

Empathic acceptance is a response that accepts feelings in addition to cognition. Teachers respond this way when they want to accept a student's feelings, emotions, or behaviors. Often teachers show empathy when they express similar feelings from their own experiences. Such responses communicate that the teacher not only "hears" the student's idea but also the emotions underlying the idea. Empathic acceptance does not mean that the teacher condones acts of aggression or destructive behavior. Some examples of this type of response are:

"I can see why you're confused. Those directions are unclear to me, too."

"You're frustrated because you didn't get a chance to share your idea. We've all got to take turns and that requires patience. It's hard to wait when you're anxious to share."

The student enters the room and slams a math workbook on the desk. The teacher responds empathically to this behavior by saying: "Something must be upsetting you today. Did you have difficulty with that assignment?"

"The way of being with another person which is termed empathic...means temporarily living in their life, moving about in it delicately, without making judgments...to be with another in this way means that for the time being you lay aside the views and values you hold for yourself in order to enter the other's world without prejudice...a complex, demanding, strong yet subtle and gentle way of being." (Carl R. Rogers)

References

- Brophy, J. E. (1981). *Teacher Praise: A Functional Analysis*. East Lansing, MI: Michigan State University Institute for Research on Teaching, October, (Occasional Paper No. 28).
- Flanders, N. (1970). Analyzing Teacher Behavior. Reading, MA: Addison Wesley.
- Joyce, B., & Showers, B. (1988). Student Achievement Through Staff Development. New York: Longman.
- Kohn, A. (1987). Art for art's sake. Psychology Today, September, 21(9).
- Kohn, A. (1994). Punished by Rewards: The Trouble with Gold Stars, Incentive Plans, A's, Praise and Other Bribes. Houghton-Mifflin.
- Lepper, M., & Green, D. (Eds.) (1978). The Hidden Cost of Rewards: New Perspectives on the Psychology of Human Motivation. New York: Erlbaum.
- Rowe, M. B. (1974). Wait time and rewards as instructional variables: Their influence on language, logic and fate control. *Journal of Research in Science Teaching*, 11, 81-94.
- Wallen, N. W., & Woodke, J. H. (1963). Relationships between Teacher Characteristics and Student Behavior, Part I. Salt Lake City, UT: Department of Educational Psychology, University of Utah.

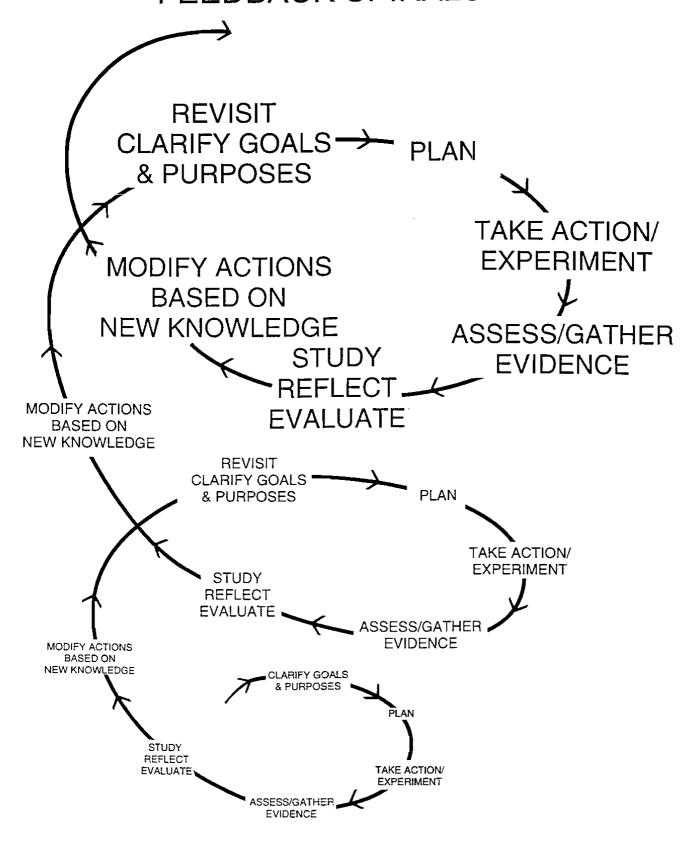
Part VI Assessing and Reporting Growth in Habits of Mind

How Do We Know That Students are Getting Better in Their Habits of Mind?

How Do We Communicate Growth?

How Do We Help Students Manage, Monitor and Modify Their Habits of Mind?

CONTINUOUS GROWTH THROUGH FEEDBACK SPIRALS



Assessing Habits Of Mind

What gets measured gets done. Measurement is the heart of any improvement process. It must begin at the outset of the program, be visible, and done by the natural work group itself.

Tom Peters

When we are serious about students developing habits of mind, we find ways to make them important in terms of assessment, feedback and provide opportunities for building the skills of self-evaluation. Self-evaluation builds from internal and external reflections and observations. Feedback from teachers serves as a rich data source. Teachers give feedback regarding thinking by focusing on (1) what is the student's disposition or attitude toward learning? (2) how do students think about accessing information; what do they consider important? (3) how do they use a reasoning process to think about the information they are gathering? (4) how do they use strategies to problem solve? (5) how do they communicate the results of their learning? and (6) what is evidenced in their performance as they apply their learning to new situations?

MEASURING DISPOSITIONS

The Habits of Mind define what is meant by being "smart". We need a way to make those attributes visible to students and to observers. The following assessment strategies have become useful ways of helping students assess themselves individually and the groups in which they work.

YOU CANNOT MEASURE PROCESS-ORIENTED OUTCOMES USING PRODUCT-ORIENTED ASSESSMENT TECHNIQUES

Developing And Keeping Checklists

Invite students to describe how we can determine if they are becoming more aware of their own thinking (metacognition) for example, What would it look like and sound like? When asked, they can:

- list the steps and tell where they are in the sequence of a problem solving strategy.
- trace the pathways and dead ends they took on the road to a problem solution.
- describe what data are lacking and their plans for producing those data.

Or, for persistence: What would we see or hear a person doing if they are persistent?

- Sticking to it when the solution to a problem is not immediately apparent.
- Employing systematic methods of analyzing a problem.
- Knowing ways to begin, knowing what steps must be performed and when they are accurate or are in error.
- Taking pride in their efforts.
- Self-correcting.
- Striving for craftsmanship and accuracy in their products.
- Becoming more self-directed in their problem-solving abilities.

Checklists are developed through conversations in the classroom. Students are asked, "what would it look like if a person were a good listener?" "what would it sound like if a person were a good listener?" Students generate a list of positively constructed observable behaviors. For example, in the "looks like" category there might be responses such as, "establishes eye contact" or "nods head when agreeing". In the sounds like category there might be responses such as, "builds on the other person's ideas" or "clarifies when does not understand". Finally, the students and teacher agree to observe for these behaviors as students work individually or in groups. Here is an example of a student/teacher developed checklist for Flexibility:

How Are We Doing Checklist

HABIT OF MIND: Flexibility	Often	Some- times	Not Yet
Restates/paraphrases a person's idea before offering personal opinion.			
Clarifies a person's ideas, concepts or terminology			
Expresses empathy for other's feelings/emotions			
Takes an allocentric point of view e.g.: "If I were in your position" or: "Looking at it from your point of view, I would"			
Changes mind with addition of new information. E.g.: "As a result of our discussion, I'm seeing it differently now."			
Approaches problems from different perspectives			
Generates multiple and alternative statements of a problem			
Displays a sense of Humor			
Laughs at him or herself			

How Are We Doing Checklist

Translate these characteristics into lists of observable behaviors. What might you see your students doing, or hear them saying, that would indicate to you their performance of each of these attributes?

ATTRIBUTE:	Often	Some- times	Not Yet
Observable Indicators			
	,		

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ATTRIBUTE:	Often	Some- times	Not Yet	
Observable Indicators				
		_	_	
		-	<u>-</u> -	
•				
			-	
		_		
		_		
			,	

Building Scoring Rubrics

Another model for assessing the habits of mind is to develop a scoring rubric. The descriptions for each scoring category can be developed with students. Each category should be sufficiently clear so that students can learn from the feedback about their behavior and how to improve. Here is an example of a scoring rubric for group cooperation developed by 6th graders at Tamalpias School in California. Following are some examples of scoring rubrics for some of the Habits of Mind:

GROUP COOPERATION A Scoring Rubric

- Demonstrates interdependence. All members contribute. Shows indicators of cooperation and working together, compromising and, staying on task. Disagreements are welcomed as learning opportunities. Completes task with accuracy and within time limits. Members listen to others points of view. Paraphrasing, clarifying and empathizing are in evidence.
- Members disagree but reach agreements through arguing and debate. Some paraphrasing and clarifying is in evidence. Group sometimes strays from task. Some members remain silent or refrain from participating.
- 2 Some members are off task. Group rushes to complete task in the most expedient way due to the pressure of time. Evidence of arguing or encouraging others to get it over with.
- 1 Few on task. Evidence of arguing and disinterest. Some members occupied with other work.
- O Chaos. Task not completed. Many put downs. Some members leave before task is complete. Complaints about having to participate in task.

Habits Of Mind Rubrics

	1. METACOGNITION
EXPERT	Describes in detail the steps of thinking when solving a problem or doing other kinds of mental tasks. Explains in detail how thinking about thinking helps improve work and how it helps to be a better learner. Describes a plan before starting to solve a problem; monitors steps in the plan or strategy; reflect on the efficiency of the problem solving strategy.
PRACTITIONER	Describes his/her thinking while solving a problem or doing other kinds of mental tasks. Explains how thinking about thinking helps learning and helps to improve work.
APPRENTICE	Includes only sparse or incomplete information when describing how they are thinking and solving a problem or doing other kinds of mental tasks. Sees only small benefits gained from thinking about thinking and learning.
NOVICE	Is confused about the relationship between thinking and problem solving. Sees no relationship between thinking and learning. Is unable to describe thinking when problem solving.

	2. PERSISTENCE
EXPERT	Does not give up do matter how difficult it is to find the answers to solutions. Evaluates the use of a variety of strategies to stay on task
PRACTITIONER	Does not give up when trying to find the answers or solutions. Stays on task
APPRENTICE	Tries to complete tasks when the answers or solutions are not readily available, but gives up when task is too difficult. Gets off task easily.
NOVICE	Gives up easily and quickly on difficult tasks.

	3. MANAGING IMPULSIVITY
EXPERT	Sets clear goals and describes each step to be taken to achieve goals. Schedules each step and monitors progress.
PRACTITIONER	Sets clear goals and describes some of the steps to be taken to achieve the goals and sequences some of the steps.
APPRENTICE	Begins to work with unclear goals. Describes only a few of the steps to bet taken to achieve the goals. Becomes distracted from schedule
NOVICE	Begins to work in random fashion. Is unclear about or unable to state goals or outcomes or steps in achieving goals.

	3A. MANAGING IMPULSIVITY
EXPERT	Evaluates a situation carefully and seeks advice from other sources to decide whether more information is needed before action. Looks for sources of information that might help and studies them to find important information
PRACTITIONER	Evaluates a situation to decide if more information is needed before acting. Information is searched for if needed.
APPRENTICE	Evaluates a situation quickly to decide if more information is needed before acting. Searches for only the most obvious information
NOVICE	Acts with inadequate or incomplete information and shows little inclination to gather further data to inform decisions.

	4. FLEXIBILITY	
	In Repertoire	In Perspective
Uses time and resources creatively to find as many ways as possible to look at a situation. Evaluates these many ways to see how useful they might be. Expresses appreciation for other's point of view. Changes mind and incorporates other's point of view in own thinking.		Consistently explores as many alternatives as time and resources will allow and analyzes how the identified alternatives will affect outcomes. The alternatives illustrate extremely diverse but highly useful ways of looking at situations
PRACTITIONER	Finds a variety of ways of looking at a situation and evaluates how useful they are. Describes some ways others' points of view are found to be new and different from his/her own.	Consistently generates alternative ways of approaching tasks and analyzes how the alternatives will affect those tasks. Some alternative show originality in the approach.
APPRENTICE Describes different ways of looking at a situation from own perspective.		Sporadically generates alternative ways of approaching tasks and analyzes hot the alternative will affect those tasks. Some alternatives show originality in the approach to the tasks.
NOVICE Looks at a situation in only one way and that way is often his/her own. Looks in further even when it is clear that it would be helpful to do so.		Rarely generates alternative ways of approaching tasks. The few alternative lack originality.

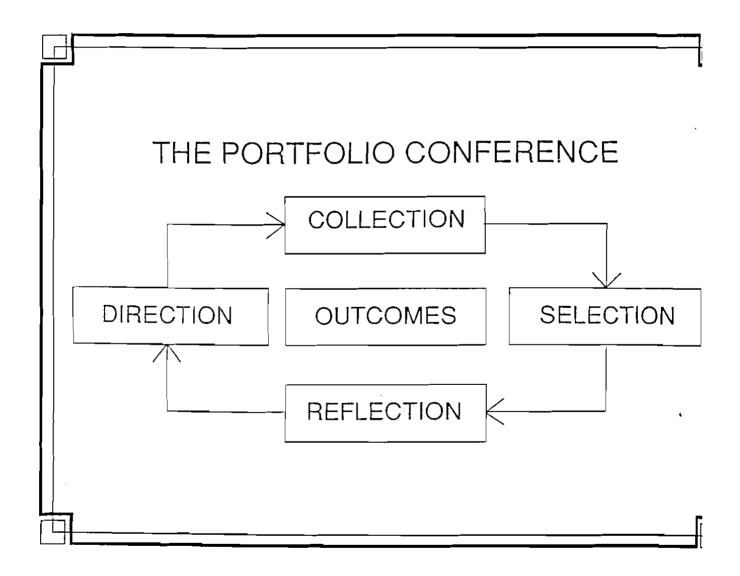
Composing A Scoring Rubric

Using the examples as models, develop a scoring rubric using the developmental continuum from novice to expert for the Habit of Mind: Striving for Accuracy and Precision.

	STRIVING FOR ACCURACY AND PRECISION				
EXPERT					
PRACTITIONER					
APPRENTICE					
NOVICE					

Maintaining Portfolios

The habits of mind may be used as an organizer for a student's portfolio. The portfolio is sectioned with folders, each with an attribute as a heading. Students choose work based on their be example of when they were persistent in their work, or when they felt that their work reflected the flexibility. The work is entered in the portfolio and the student reflects on why that work has been chosen and what it should say to the reader of the portfolio. Students coach one another as they buil these portfolios by having peer conferences. One teacher asks the students to read the work in the portfolio and help the learner reflect on why they have chosen particular pieces. When portfolios are developed around the habits of mind, they are transdisciplinary—one portfolio can include artifact from all subjects. This is an especially useful design for high school students.



Performances

In addition to focusing on the content and form of a student's work, teachers focus on the process the student was involved with to arrive at the final presentation. One science teacher uses the habits of mind as a part of student goal setting. She asks the students to choose one habit they feel especially strong in and one that they need to work on. When they are engaged in lab work, she has them consider how they are doing. Which of the habits was most called for? Finally, they write a reflection on their behaviors as they solved the problems presented in preparation for their final performance. She then maintains a record of how students are doing with the goals they set. Finally, she has the students plot graphs describing their growth and learning in the development and demonstration of the habits of mind.

EXHIBITIONS

Exhibitions are displays of student work compiled and organized around one or more of the Habits of Mind. Building a set of criteria with the students before they construct their exhibits causes them to apply a set of standards to evaluating their own and each other's design. Visiting an exhibit such as in a fair or museum and asking students to describe what makes the exhibit visually appealing? What is it that captures their interest? How is the viewer drawn into the exhibit? What has the exhibitor done to engage learning in the viewer? Invite the students to observe other viewers to discover in which exhibits to the viewers become most involved and which exhibits hold the viewers interest for the greatest period of time.

At the Bleyle Junior High School in Houston, Texas, parents became involved as students exhibited their work that demonstrated their checking for accuracy and precision while parents displayed their work showing how they had to employ this Habit of Mind in their work as well.

ANECDOTAL RECORDS

As students demonstrate particular habits of mind, teachers document their work. The most significant part of this strategy is to be systematic about record keeping. One teacher found that she was able to observe all of the children in her class when she designed a notebook, tabbed each section with a student's name, and used post its to note information about the child's intelligent behaviors. At the end of the first marking period, when she wanted to write narrative comments about students, she had a good data base to draw from.

In addition to the anecdotal records a teacher keeps, there are also the anecdotal records from home. Many teachers send a copy of the Habits of Mind home and ask parents to notice when the child is using the behaviors in the home environment. When conference time comes, the parents share their observations with the teacher.

INTERVIEWS

Oprah Winfrey, Larry King, Barbara Walters--all are master interviewers. They have the capacity to charm even the most diffident stoic, to place the most timid at ease by creating trust and rapport, and to cause the most reticent to reveal their deepest of emotions and secrets.

Teachers, too, can use the interview to cause students to share their reflections and accomplishement of the Habits of Mind. By creating an atmosphere of trust and by constructing well designed questions, students can reveal their insights, understandings, and applications of the Habits of Mind. Posing such questions as:

- "As you reflect on this semesteer's work, which of the Habits of Mind were you most aware of in your own learnings?
- "Which Habit of Mind will you focus your energies on as you begin our next project?"
- "What insights have you gained as a result of employing these Habits of Mind?"
- "As you think about your future, how might these Habits of Mind be used as a guide in you life?"

Interviews provide teachers with opportunities to model their listening with understanding and empathy, their precise language, and their questioning strategies. Teaching students to conduct inerviews provide situations in which they must practice these Habits of mind themselves.

JOURNALS

Consciousness about the behaviors often begins with journal entries designed to help students focus on how they are developing. Thought starters can help students use the lens of the habits as a way of documenting their learning. Some examples are:

- One thing that surprised me today was....
- I felt particularly flexible when I...
- I used my senses to...
- As I think about how I went about solving the problem I ...
- A question I want to pursue is...
- When I checked my work I found...
- Because I listened carefully I learned...

Collecting Evidence: A Planning Matrix

The matrix below might serve in planning how to collect evidence of each of the Habits of Mind using a variety of alternative assessment strategies.

Assessments	Checklist	Portfolio	Rubric	Interview	Anecdotal	Performance	Exhibition	Journal		
Habits of Mind									<u>_</u>	
1. Persistence						E				
2. Managing impulsivity										
3. Listening with understanding and empathy										
4. Flexibility in Thinking				,						
5. Metacognition										
6. Striving for accuracy and precision										
7. Questioning and Problem- Posing								_		
8. Drawing on past knowledge and applying it to new situations										
9. Precision of Language and Thought										
10. Using all the Senses										
11. Ingenuity, Creativity and Innovation										
12. Wonderment and Curiosity										

Part VII Resources for Integrating Habits of Mind

What Resources Are Available to Support the Infusion of Habits of Mind into the School and Community?

What are Models, Artifacts and Examples of Implementing Habits of Mind?

Problems To Engage, Enhance And Extend Metacognition

On the following pages are some examples of problems which can serve as the beginning of a collection of metacognitive "brain benders". You will want to add to this collection and soon your students will begin bringing similar problems to class to tease the curiosity, engage metacognition, and delight the intellect.

The answers to these problems are not to be found. If you know the answers it removes you from the role of colleague inquirer--"co-metacogitator". You and your students, of course, will figure out the answers; but it is important to focus on the metacogntive process rather than getting the correct answer. Being always doubtful, seeking other ways to prove, living with ambiguity, continuously checking for accuracy and precision, using each other as resources--these are the attributes of intelligent people; these are the processes which these problems are meant to evoke.

Following are a few of the types of books which are useful sources of problems which and engage and enhance metacognition. You will want to add to this list.

Black, H. and Parks, S. *Building Thinking Skills* Book 1: Grades 2-4; Book 2: Grades 4-7; Book 3: Grades 7-10

Gardner, M. Classic Brainteasers

Hardendeck, A. *Mind Benders* (A collection of 11 books, ranging from easy through difficult problems.)

Sloane, P. Lateral Thinking Puzzlers

Summers, G. The Great Book of Mind Teasers and Mind Puzzlers.

Whimbey, A, Lochhead, J. Teaching Through Math Word Problems

Teaching Thinking And Problem Solving In Math

Problem Solving and Comprehension

Beyond Problem Solving And Comprehension

Metacognitive Brain-Teasers

Find the pattern:

AEFHI KLMNT VWXYZ

- 1. Develop a strategy for adding the column of figures below.
- 2. Use that strategy to sum the figures.
- 3. Describe to your neighbor the strategy you employed.
- 4. Compare your strategy with your neighbors.

1

2

3

4 5

6

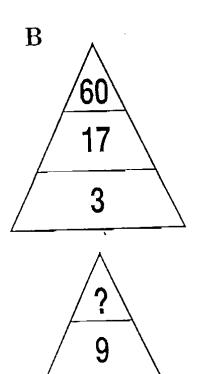
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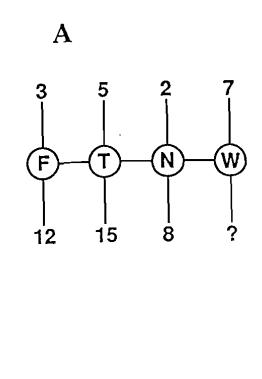
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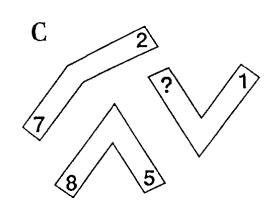
10

If day before yesterday were ______ what would day after tomorrow be?

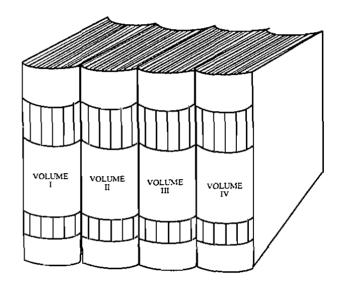


5





The Bookworm



There are four books on the shelf.

Each book is two inches thick.

Each cover is an additional one-sixth of an inch thick.

A bookworm starts eating at page one of volume one and eats to the last page of volume four.

How far does the bookworm travel?

Aptitude Test

- 1. A person goes to bed at 8:30. They set their non-digital alarm clock for 9:00 to get up. How many hours of sleep could take place before the alarm rings?
- 2. Do they have a 4th of July in England?
- 3. How many birthdays does the average person have?
- 4. How far can a dog run into the woods?
- 5. You walk into a cabin with a single match in need of shelter. There is a fireplace, a wood burning stove, and kerosene lamp. Which would you light first?
- 6. A doctor gives you three pills and instructs you to take one every half hour. How long until the pills are gone?
- 7. A house is built with four sides, each with a southern exposure. A bear walks by. What color is the bear?
- 8. Why can't a person living in Wyoming be buried in Minnesota?
- 9. Some months have 30 days; some months have 31; how many have 28 days?
- 10. What is the maximum number of active baseball players on the field at any given time? How many outs in an inning?

11.	I have in my hand two U.S. coins that total 55 cents. One of them is <u>not</u> a nickel. Keeping that in mind, what are the two coins?
12.	A farmer had 17 sheep; all but 9 died; how many are left?
13.	Divide 30 by 1/2 and add 10.
14.	Two women were playing checkers. They played five games, and each one won the same amount of games. There were no ties. How is this possible?
15.	According to the Bible, how many of each species did Moses take on the arc with him?
16.	Take two apples from three apples; what do you have?
17.	An archaeologist claimed that he had some gold coins dated 46 BC. Do you believe him? Why?
18.	A woman gives a beggar 50 cents. The woman is the beggar's sister, but the beggar is not the woman's brother. How is this possible?
19.	Is it legal in Minnesota for a man to marry his widow's sister?
20.	What word is misspelled in this "test?"

More Advanced Brain Teasers

1.	drawer withou	at looking at th	s and 40 brown e socks, what is have a matched (C) 3	the smallest nu	ver. If I reach into the mber of socks I must (E) 5
2.	of the houses	have more that	ses. Ten of the n 7 rooms. 4 hos that are 6, 7 or (C) 11	ouses have more	ver than 6 rooms. Ten than 8 rooms. What (E) 40
3.		to sonnet is to relics hymn	analogy:		
4.	GEORGE WA (A) Albert Eir. (B) Abraham (C) Richard N (D) Thomas J	etes the correct SHINGTON is to istein is to the a Lincoln is to er fixon is to Wate efferson is to the cock is to signa	to CHERRY TRE atomic bomb mancipation ergate ae Constitution	E as	·
5.		ext number in t , 5, 6, 4, 8, 5,			
6.	people with b	lue eyes and 2	yed blondes. If people who are are there in the (C) 19	e neither blonde	re are 14 blondes, 8 e nor have blue eyse in (E) 29
7.	(A) C-B is alw(B) C-B is alw(C) C-B is alw	vays greater tha vays less than A vays equal to A	n A	. Which is true?	between C and A.

8.	Suppose you have a 12 hour digital clock where the minute digit is always the same as the hour digit. That is, the clock can read only times like 10:10, 8:08, 9:09, etc. What is the smallest time difference between such two acceptable double-digit times? (A) 101 minutes (B) 61 minutes (C) 60 minutes (D) 49 minutes (E) 11 minutes
9.	A square ABCO is inscribed in a quarter-circle with center O, point B on the circumference of the circle. One of the verticies of the square is at O. What is the length of diagonal AC of the square if the radius of the circle is 5? (A) 3 (B) 4 (C) 5 (D) 6
10.	A ship is twice as old as the ship's boiler was when the ship was as old as the boiler is. The ratio of the boiler's age to the ship's age is: (A) 2/3 (B) 3/4 (C) 4/5 (D) 5/6 (E) 6/7
11.	50 times itself 100 times is how many times 100 times itself 50 times? (A) 25x25x25x25(50 times) (B) 4x4x4x4(50 times) (C) 2x2x2x2(50 times) (D) 1 times (E) None of these
12.	Suppose you are given a triangle ABC with sides AB equals AC. Draw a line from C to side AB. Call the line CD. Now draw a line from B to side AC. Call that line BE. Now draw line ED. If angle EBC equals 60 degrees, angle BCD equals 70 degrees, angle ABE equals 20 degrees and angle DCE equals 10 degrees, find what angle EDC is. (Do not do this problem trigonometrically, that is don't do it using the "law of sines"; do it geometrically to get an exact answer.) (A) 10 degrees (B) 15 degrees (C) 20 degrees (D) 25 degrees (E) none of these

Habits Of Mind: A Bibliography

On the following pages is a list of books suitable for students from pre-school through adult levels. It is categorized by the 12 Habits of Mind. While any bibliography is immediately incomplete and dated, you will find this to be a valuable organizational system by which to collect and classify additional books to illuminate, exemplify and characterize the Habits of Mind.

For example:

Habit of Mind

Book or Story

Persistence

The Little Engine that Could

Precision of Language and Thought

Amelia Bedelia

Empathy

The True Story of the Three Little Pigs

from the Wolf's Point of View

Managing Impulsivity

The Diary of Anne Frank

Drawing forth Past Knowledge

I Know Why the Caged Bird Sings

If you have students prepare book reports, you may wish to include in them a discussion of which of the Habits of Mind this story illustrated. Which of the Habits of mind did the characters display? How did your familiarity with the Habits of Mind help you understand the tensions, conflicts, characters, climax and plot of the story?

Great appreciation is expressed to Cathy Lobuglio at Washington Intermediate School, Honolulu, Hawaii, and Dina Shein at Friendship Valley Elementary School, Westminster, Maryland for organizing and compiling this bibliography.

INTELLIGENT BEHAVIORS BOOKLIST

by Kathy Lobuglio
Washington Intermediate School
Honolulu, Hawaii
and
Dina Shein
Friendship Valley Elementary School
Westminster, Maryland

PRESCHOOL/PICTURE BOOKS

1. PERSISTENCE: PERSERVERING WHEN THE SOLUTION TO A PROBLEM IS NOT READILY APPARENT

Are You My Mother (P.D. Eastman)

Baby bird searches for his mother, questioning everyone and everything in sight. His efforts are rewarded.

Caps for Sale (Esphyr Slobodkina)

The peddler carefully and precisely arranges his caps repeatedly. When the caps are stolen by the monkeys, he uses the monkeys' own tricks to get them back.

Dr. DeSoto (William Steig)

Can a "mousey" dentist pull a tooth and out-fox his "foxy" patient?

Horton Hatches the Egg (Dr. Seuss)

Despite everything, Horton the elephant keeps his promise to take care of Maizie's egg. "An elephant's faithful, One hundred percent!"

Make Way for Ducklings (Robert McCloskey)

Join a tour of Boston with the ducklings as they make their way to a new home.

Mike Mulligan and His Steam Shovel (Virginia Lee Burton)

Mike and his steam shovel, Mariannne, are determined to get the difficult job done and prove their worthiness.

Noisy Nora (Rosemary Wells)

Nora needs attention and will do anything to get it.

Old Woman and Her Pig (Paul Galdone)

The old woman must follow a sequence of events in order to get her pig home.

The Tortoise and the Hare (Aesop fable)

The tortoise's steady pace wins the race.

2. DECREASING IMPULSIVITY

Curious George (H.A. Rey)

Being curious and impulsive gets George into lost of mischief.

The Frog Prince (Paul Galdone)

The princess makes a hasty promise to the frog that she later regrets.

Owl Moon (Jane Yolen)

Though it's hard to be quiet, a little girl finds a winter night's walk with her father to be an awesome experience.

Rotten Raiph (Jack Gantos)

Sarah's cat just can't stop his nasty deeds until the consequences of a visit to the circus make him change his rotten ways.

The Story About Ping (Marjorie Flack)

A night of adventure on the Yangtze River for a little duck who gets separated from his family.

The Tale of Peter Rabbit (Beatrix Potter)

Classic tale of Peter's adventures in Farmer McGregor's garden.

The Three Wishes (Margot Zemach)

A woodcutter and his wife waste their big chance by making foolish and trivial wishes.

3. LISTENING TO OTHERS WITH UNDERSTANDING AND EMPATHY

Alexander and the Terrible, Horrible, No Good, Very Bad Day (Judith Viorst)

"Some days are like that." Everyone can emphathize with Alexander.

Androcles and the Lion (Aesop fable)

In this fable, a rescued lion returns the favor in kind.

Beauty and the Beast (Traditional)

Beauty can understand the Beast because she sees through his rough exterior to his essence.

Bedtime for Frances (Russel Hoban)

Frances's bedtime delaying tactics are amusing and her parents patience is admirable.

Best Friends (Miriam Cohen)

Kindergartners, Paul and Jim, learn about friendship - its difficulties and rewards.

George and Martha (James Marshall)

Simple tales of two hippo friends sharing the lessons of friendship.

The Story About Ping (Marjorie Flack)

A night of adventure on the Yangtze River for a little duck who gets separated from his family.

The Story of Ferdinand (Munro Leaf)

This Spanish bull doesn't want to fight in the bullring - he loves life and flowers.

Why Mosquitos Buzz in People's Ears (Verna Aardema)

Misunderstandings start a chain of events in the jungle. King Lion calls upon the animals to think and problem solve.

The Wreck of the Zephyr (Chris Van Alisburg)

The memories of an old sailor are inspired by a wrecked sailboat.

4. FLEXIBILITY IN THINKING

Black and White (David Macaulay)

A unique and challenging picture book for thinkers. Is it one story or four?

Cloudy With the Chance of Meatballs (Judi Barrett)

The town of Chewandswallow enjoys its unusually delicious weather until its very existence is threatened.

Dr. DeSoto (William Steig)

Can a "mousey" dentist pull a tooth and out-fox his "foxy" patient?

Each, Peach, Pear, Plum (Janet Ahlberg)

Can you find the nursery rhyme characters hiding in these pictures?

Jumanji (Chris Van Allsburg)

After Peter and Judy find a game in the park, they have an extraordinary adventure that blends fantasy and reality.

Miss Nelson books (Harry Allard)

Outside Over There (Maurice Sendak)

An unusually ambiguous story to ponder and interpret.

Pecos Bill (Steven Kellogg)

A western tall tale of crazy situations and impossible doings.

What Happened to Patrick's Dinosaurs (Carol Carrick)

Patrick wants the facts about dinosaurs. Illogical and impossible ideas are countered in his discussion with his brother Hank.

5. METACOGNITION: AWARENESS OF OUR OWN THINKING

Anno's Alphabet (Mitsumasa Anno)

Uniquely imaginative alphabet book with surrealisitic and visual paradoxes to examine and enjoy.

Anno's Counting House (Mitsumasa Anno)

A multitude of mathematical concepts can be found in this fascinating wordless picture story.

Black and White (David Macaulay)

A unique and challenging picture book for thinkers. Is it one story or four?

Each, Peach, Pear, Plum (Janet Ahlberg)

Can you find the nursery rhyme characters hiding in these pictures?

Fables (Arnold Lobel)

The moral of each fable will be best understood when it can be applied to personal situations.

Koko's Kitten (Francine Patterson)

Koko is a gorilla who communicates in sign language. Her interpretations provoke a close look at language and its reflection of the thinking process.

Puss in Boots (Traditional)

Puss devises a clever and logical plan that benefits himself and his master.

There's an Alligator Under My Bed (Mercer Mayer)

A small boy wants to get rid of the alligator under his bed. He devises a plan and follows it through.

Why Mosquitos Buzz in People's Ears (Verna Aardema)

Misunderstandings start a chain of events in the jungle. King Lion calls upon the animals to think and problem solve.

6. CHECKING FOR ACCURACY AND PRECISION

Dr. DeSoto (William Steig)

Can a "mousey" dentist pull a tooth and out-fox his "foxy" patient?

Each, Peach, Pear, Plum (Janet Ahlberg)

Can you find the nursery rhyme characters hiding in these pictures?

The 500 Hats of Barholomew Cubbins (Dr. Seuss)

Careful counting solves the mystery of Bartholomew's hats.

The Little House (Virginia Lee Burton)

Changes occur as a little house in the country gets crowded out by the encroaching city.

Miss Nelson books (Harry Allard)

Old Woman and Her Pig (Paul Galdone)

The old woman must follow a sequence of events in order to get her pig home.

One Fine Day (Nonny Hogrogian)

As Fox negotiates with others to complete a chain of events, he must listen so that the sequence can be retraced and he can get his tail back.

There's a Nightmare in My Closet (Mercer Mayer)

Find out what to do if you're afraid to open your closet door.

What Happened to Patrick's Dinosaurs (Carol Carrick)

Patrick wants the facts about dinosaurs. Illogical and impossible ideas are countered in his discussion with his brother Hank.

What Happens Next? (Janina Domanska)

To win his freedom, a peasant tells a tall tale of contradictions to the Baron in which the inaccuracies provide the humor.

7. QUESTIONING AND PROBLEM POSING

Are You My Mother (P.D. Eastman)

Baby bird searches for his mother, questioning everyone and everything in sight. His efforts are rewarded.

The Day Jimmy's Boa Ate the Wash (Trinka Hakes Noble)

When a Mom asks her child a series of questions about a field trip to a farm, the answers add up to an amazing tale.

The Emperor's New Clothes (Hans Christian Anderson)

Being afraid and hesitant to ask questions lead to blind acceptance of an absurd situation.

Little Red Riding Hood (Traditional)

Little Red Riding Hood must use her perceptions and questioning skills to figure it all out.

Miss Nelson books (Harry Allard)

Polar Express (Chris Van Allsburg)

A beautifully illustrated Christmas story of a boy who receives a special gift after a magical train ride to the North Pole.

The Snowy Day (Ezra Jack Keats)

Peter discovers the magic of snow - how it feels and other physical properties.

The Story About Ping (Marjorie Flack)

A night of adventure on the Yangtze River for a little duck who gets separated from his family.

The Tale of Peter Rabbit (Beatrix Potter)

Classic tale of Peter's adventures in Farmer McGregor's garden.

What Happened to Patrick's Dinosaurs (Carol Carrick)

Patrick wants the facts about dinosaurs. Illogical and impossible ideas are countered in his discussion with his brother Hank.

8. DRAWING ON PAST KNOWLEDGE AND APPLYING IT TO NEW SITUATIONS

Androcles and the Lion (Aesop fable)

In this fable, a rescued lion returns the favor in kind.

The Big Snow (Berta and Elmer Hader)

Each woodland animal remembers what the signs of winter mean and prepare for their survival.

The Blind Men and the Elephant (Lillian Quigley)

In this folktale from India, six men examine an elephant "seeing" it differently because of their past experiences.

Caps for Sale (Esphyr Slobodkina)

The peddler carefully and precisely arranges his caps repeatedly. When the caps are stolen by the monkeys, he uses the monkeys' own tricks to get them back.

Each, Peach, Pear, Plum (Janet Ahlberg)

Can you find the nursery rhyme characters hiding in these pictures?

Fables (Arnold Lobel)

The moral of each fable is best understood when it can be applied to personal situations.

The Little House (Virginia Lee Burton)

Changes occur as a little house in the country gets crowded out by the encroaching city.

The Lorax (Dr. Seuss)

Can the lessons learned the hard way by Once-ler and the Lorax , in this ecological folly, be applied to real life?

The Wreck of the Zephyr (Chris Van Allsburg)

The memories of an old sailor are inspired by a wrecked sailboat.

9. PRECISION OF LANGUAGE AND THOUGHT

Amelia Bedelia (Peggy Parish)

Confusing misinterpretations of word meanings have disastrous and hilarious results. Develops awareness of subleties of language.

Koko's Kitten (Francine Patterson)

Koko is a gorilla who communicates in sign language. Her interpretations provoke a close look at language and its reflection of the thinking process.

The Little House (Virginia Lee Burton)

Changes occur as a little house in the country gets crowded out by the encroaching city.

The Magic School Bus (Joanna Cole)

This imaginative story of Ms. Frizzles' class trip to the waterworks is embedded with science concepts and vocabulary.

Make Way for Ducklings (Robert McCloskey)

Join a tour of Boston with the ducklings as they make their way to a new home.

Richard Scarry's Best First Book Ever (Richard Scarry)

Huckle Cat and Lowly Worm explore the world and develop their vocabulary.

Sylvester and the Magic Pebble (William Steig)

Sylvester learns that making the best wishes requires careful wording after he turns himself into a rock.

Tikki Tikki Tembo (Arlene Mosel)

This Chinese folktale tells the perils of having a long name when Chang must repeat his brother's name correctly in order to save him.

10. USING ALL THE SENSES

Blueberries for Sal (Robert McCloskey)

Lots of tasting and touching, and sights and sounds, when Sal and Little Bear go picking blueberries with their mothers.

Little Island (Margaret Wise Brown)

The wonders of the natural world are revealed in the sensory descriptions of an island.

Little Red Riding Hood (Traditional)

Little Red Riding Hood must use her perceptions and questioning skills to figure it all out.

Make Way for Ducklings (Robert McCloskey)

Join a tour of Boston with the ducklings as they make their way to a new home.

Owl Moon (Jane Yolen)

Though it's hard to be quiet, a little girl finds a winter night's walk with her father to be an awesome experience.

The Snowy Day (Ezra Jack Keats)

Peter discovers the magic of snow - how it feels and other physical properties.

The Tale of Peter Rabbit (Beatrix Potter)

Classic tale of Peter's adventures in Farmer McGregor's garden.

There's a Nightmare in My Closet (Mercer Mayer)

Find out what to do if you're afraid to open your closet door.

The Very Busy Spider; The Very Hungry Caterpillar (Eric Carle)

Books that invite children to "touch".

11. INGENUITY, ORIGINALITY, INSIGHTFULNESS: CREATIVITY

Abiyoyo (Pete Seeger)

With a cleverly planned scheme, a boy and his father save their town from the terrible giant.

Anno's Alphabet (Mitsumasa Anno)

Uniquely imaginative alphabet book with surrealisitic and visual paradoxes to examine and enjoy.

Anno's Counting House (Mitsumasa Anno)

A multitude of mathematical concepts can be found in this fascinating wordless picture story.

Black and White (David Macaulay)

A unique and challenging picture book for thinkers. Is it one story or four?

The Breman Town Musicians (Elizabeth Shub)

Four animals who have decided to become musicians outsmart thieves in ingenious ways.

Cloudy With the Chance of Meatballs (Judi Barrett)

The town of Chewandswallow enjoys its unusually delicious weather until its very existence is threatened.

Dr. DeSoto (William Steig)

Can a "mousey" dentist pull a tooth and out-fox his "foxy" patient?

Each, Peach, Pear, Plum (Janet Ahlberg)

Can you find the nursery rhyme characters hiding in these pictures?

Jumanji (Chris Van Allsburg)

After Peter and Judy find a game in the park, they have an extraordinary adventure that blends fantasy and reality.

Miss Nelson books (Harry Allard)

Outside Over There (Maurice Sendak)

An unusually ambiguous story to ponder and interpret.

Pecos Bill (Steven Kellogg)

A western tall tale of crazy situations and impossible doings.

Puss in Boots (Traditional)

Puss devises a clever and logical plan that benefits himself and his master.

Stone Soup (Marcia Brown)

Hungry soldiers trick the suspicious villagers into making them soup with hidden food.

The Story About Ping (Marjorie Flack)

A night of adventure on the Yangtze River for a little duck who gets separated from his family.

The Tale of Peter Rabbit (Beatrix Potter)

Classic tale of Peter's adventures in Farmer McGregor's garden.

There's an Alligator Under My Bed (Mercer Mayer)

A small boy wants to get rid of the alligator under his bed. He devises a plan and follows it through.

There's a Nightmare in My Closet (Mercer Mayer)

Find out what to do if you're afraid to open your closet door.

The Very Busy Spider, The Very Hungry Caterpillar (Eric Carle)

Books that invite children to "touch".

What Happens Next? (Janina Domanska)

To win his freedom, a peasant tells a tall tale of contradictions to the Baron in which the inaccuracies provide the humor.

Where the Wild Things Are (Maurice Sendak)

Max embarks on a wild fantasy adventure to escape an unpleasant situation.

12. WONDERMENT, INQUISITIVENESS, CURIOSITY

Arrow to the Sun (Gerald McDermott)

The spirit of the sun comes to earth in this Pueblo folktale.

Curious George (H. A. Rey)

Being curious and impulsive gets George into lost of mischief.

The Day Jimmy's Boa Ate the Wash (Trinka Hakes Noble)

When a Mom asks her child a series of questions about a field trip to a farm, the answers add up to an amazing tale.

Hey, Al (Arthur Yorinka)

All and his dog Eddie escape their tedious life when a marvelous bird transports them to an island paradise.

Little Island (Margaret Wise Brown)

The wonders of the natural world are revealed in the sensory descriptions of an island.

Make Way for Ducklings (Robert McCloskey)

Join a tour of Boston with the ducklings as they make their way to a new home.

Owl Moon (Jane Yolen)

Though it's hard to be quiet, a little girl finds a winter night's walk with her father to be an awesome experience.

The Wreck of the Zephyr (Chris Van Allsburg)

The memories of an old sailor are inspired by a wrecked sailboat.

EARLY ELEMENTARY

1. PERSISTENCE: PERSERVERING WHEN THE SOLUTION TO A PROBLEM IS NOT READILY APPARENT

Airmail To the Moon (Tom Birdseye)

When the tooth that she was saving for the tooth fairy disappears, Ora Mae sets out to find the thief and send him "airmail to the moon."

Arrow To the Sun: A Pueblo Indian Tale (Gerald McDermott)

An adaptation of the Pueblo Indian which explains how the spirit of the Lord of the Sun was brought to the world of men.

The Bears on Hemlock Mountain (Alice Dalgliesh)

Jonathan, who is trying to be brave on his errand over Hemlock Mountain, is comforted by the repetitious chant, "There are NO bears on Hemlock Mountain..."

Brave Irene (William Steig)

Irene encounters many adventures as she delivers a beautiful gown her mother made to the duchess who lives across a snowy ravine.

Chato's Kitchen (Gary Soto)

Chato the cat prepares all kinds of food: fajitas, frijoles, salsa, enchiladas, and more.

Curious George (H. A. Rey)

The curiosity of a newly-captured monkey gets him into continual trouble.

Don't Fidget A Feather (Erica Silverman)

Their contest to decide who is the champion of champions almost has disastrous consequences.

The Fisherman and His Wife & (The Four Clever Brothers) (Mitsumasa Anno)

Presents two tales from the Brothers Grimm, combined with Mr. Fox's highly unusual interpretations of them.

The Giving Tree (Shel Silverstein)

The love between a boy and a tree continues through the years of his boyhood into his old age.

Hugh Can Do (Jennifer Armstrong)

Hugh wants to seek his fortune in the city, but first he must find a way to pay the toll-taker at the bridge.

Hugh Pine (Janwillem van de Wettering)

Hugh is a porcupine who realizes that learning to walk upright is a survival skill to be learned and shared by all porcupines.

Johnny Appleseed: a Tall Tale (Steven Kellogg)

Presents the life of John Chapman, better known as Johnny Appleseed, describing his love of nature.

The Journey of Natty Gann Storybook (Ann Matthews)

Natty Gann crosses the country dodging danger and searching for her father during the 1930's depression.

Jumangi (Chris VanAllsburg)

Left on their own for an afternoon, two bored and restless children find more excitement than they bargained for.

Katy and the Big Snow (Virginia Lee Burton)

Geoppolis is hidden under a blanket of snow until a red crawler tractor saves the day.

Knots On a Counting Rope (Bill Martin)

Boy-Strength-of-Blue-Horses and his grandfather reminisce about the young boy's birth, his first horse, and an exciting horse race.

The Little Engine That Could (Walter Piper)

When the other engines refuse, the Little Engine tries to pull a stranded train over the mountain.

Little Red Hen (Paul Galdon)

The little red hen finds none of her lazy friends willing to help her plant, harvest, or grind wheat into flour, but all are eager to eat the cake she makes from it.

Maybe a Band-Aid Will Help (Anna Grossnickle Hines)

Trying to get Mama to fix a broken doll takes a lot of persistence.

Mike Mulligan and His Steam Shovel Burton (Virginia Lee)

Mike Mulligan proves that, although outdated, his steam shovel is still useful.

Millicent the Magnificent (Alice Bach)

Oliver and Ronald want to be circus bears like Millicent. Their diligence results in each discovering his own unique talent.

My Father's Dragon (Ruth Stiles Gannett)

For the dramatic rescue of the poor, oppressed dragon, Elmer Elevator goes to Wild Island carrying an unusual assortment of belongings.

Peeping Beauty (Mary Jane Aush)

Poulette the dancing hen falls into the clutches of a hungry fox, who exploits her desire to become a great ballerina.

Poppy, The Panda (Dick Gackelbach)

Katie can't find the right thing for her toy panda to wear until her mother comes up with the perfect solution.

The Tree That Would Not Die (Ellen Levine)

For nearly 500 years the tree knew only wilderness and wild animals. It became a meeting place for the first people and was known as "Treaty Oak."

2. DECREASING IMPULSIVITY

Airmail To the Moon (Tom Birdseye)

When the tooth that she was saving for the tooth fairy disappears, Ora Mae sets out to find the thief and send him "airmail to the moon."

Begin at the Beginning (Amy Schwartz)

Sara gets stuck when she must paint a picture for the second grade art show, until she discovers the best place to begin.

Berenstein Bears (Series) (Stanley Berenstein)

The Berenstein Bears have many adventures and solve many problems as a family and as individuals.

The Boy Who Drew Cats (Arthur Levine)

An artistic young boys love for drawing cats gets him into trouble and leads him to a mysterious experience.

Charlie and the Chocolate Factory (Roald Dahl)

Five children luc ky enough to discover an entry ticket into Mr. Willy Wonka's mysterious chocolate factory takes advantage of the situation in their own way.

Charlotte's Web (E. B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend, Charlotte, decides to help him.

Curious George (H. A. Rey)

The curiosity of a newly-captured monkey gets him into continual trouble.

Dawn (Molly Bang)

A shipbuilder breaks his word, losing his wife and happiness in this adaptation of a Japanese legend.

Dr. Seuss (Series) (Dr. Seuss)

This collection of rhymes and silly humor is amusing to all ages.

Goldilocks And the Three Bears (Janet Hillman)

The story about Goldilocks and the three bears and how she ate their porridge, sat in their chairs, and slept in their beds until discovered.

The Giving Tree (Shel Silverstein)

The love between a boy and a tree continues through the years of his boyhood into his old age.

Max and Ruby's Midas: Another Greek Myth (Rosemary Wells)

Ruby tries to stop her younger brother Max from eating so many sweets by reading him an altered version of the story of King Midas.

Mike Mulligan and His Steam Shovel Burton (Virginia Lee)

Mike Mulligan proves that, although outdated, his steam shovel is still useful.

The Mouse and the Motorcycle (Beverly Cleary)

The adventures begin when Keith lends his toy motorcycle to Ralph the Mouse. Their friendship leads to fun and mischief.

No Problem (Eileen Browne)

Mouse's friends take turns putting together the pieces that come in a box as a birthday present, but, only one takes the time to read the instructions.

The Runaway Sleigh Ride (Astrid Lindgren)

Little Elizabeth gets into trouble when she hitches a ride on the back of a sleigh.

The Spy on Third Base (Matt Christopher)

T. V. Adams, third baseman, has to find a way to tactfully share his knack for predicting baseball outcomes with his teammates.

The Toll-Bridge Troll (Patricia Rae Wolff)

A troll tries to prevent Trigg from crossing the bridge on the way to school onlyto be outwitted by the boy's riddles.

Winnie the Pooh (A. A. Milne)

The adventures of Pooh, Piglet, Owl, Tigger, and Eeyore.

Woe is Moe (Diane Stanley)

Moe's new job in advertising at the ice cream factory brings him money, travel, and prestige so why is he lonely and miserable?

3. LISTENING TO OTHERS WITH UNDERSTANDING AND EMPATHY

Alexander and the Terrible, Horrible, No Good, Very Bad Day (Judith Viorst)

Recounts the events of a day when everything goes wrong for Alexander.

Arrow To the Sun: A Pueblo Indian Tale (Gerald McDermott)

An adaptation of the Pueblo Indian which explains how the spirit of the Lord of the Sun was brought to the world of men.

Bears Should Share (Alvin Granowsky)

Juxtaposes the traditional tale of the tree bears' discovery that Goldilocks has been in their house eating their porridge and using their furniture with Goldilocks' side of the story.

Beneath the Ghost Moon (Jane Yolen)

Beneath the midnight moon, mice battle mean-hearted creepy-crawlies to protect their farmyard home.

The Black Snowman (Phil Mendez)

Young, discouraged Jacob has his self-esteem boosted when the snowman introduces him to his Afro-American heritage.

Brainy Bird Saves the Day (Alvin Granowsky)

Juxtaposes the traditional tale of Henny Penny and her friends with a retelling in which the animals' more careful analysis of the situation helps them avoid a sad ending.

The Day Jimmy's Boa Ate the Wash (Trinka Hakes Noble)

Jimmy's boa constrictor wreaks havoc on the class trip to the farm.

Giants Have Feelings, Too (Alvin Granowsky)

Juxtaposes the traditional tale of Jack who climbs the beanstalk to the giant's castle with a retelling from the giant's point of view.

The Giving Tree (Shel Silverstein)

The love between a boy and a tree continues through the years of his boyhood into his old age.

Heckedy Peg (Don Wood)

A mother saves her seven children from Heckedy Peg, a witch who has changed them into different kinds of food.

Help Yourself, Little Red Hen (Alvin Granowsky)

Juxtaposes the traditional tale of the little red hen whose friends would not help her bake bread with the friends side of the story.

Just a Friendly Old Troll (Alvin Granowsky)

Juxtaposes the traditional tale of the three billy goats that outwit a menacing troll with a retelling in which the troll tells his side of the story.

Kenny's Window (Maurice Sendak)

As Kenny tries to answer seven questions from his dream, he expands his awareness and understanding of himself and his world.

Knots On a Counting Rope (Bill Martin)

Boy-Strength-of-Blue-Horses and his grandfather reminisce about the young boy's birth, his first horse, and an exciting horse race.

Losing Uncle Tim (Marykate Jordan)

Daniel struggles to understand death when his favorite uncle dies of AIDS.

Max and Ruby's Midas: Another Greek Myth (Rosemary Well)

Ruby tries to stop her younger brother Max from eating so many sweets by reading him an altered version of the story of King Midas.

The Mouse and the Motorcycle (Beverly Cleary)

The adventures begin when Keith lends his toy motorcycle to Ralph the Mouse. Their friendship leads to fun and mischief.

Mouse House (Rumer Godden)

Poor Bonnie mouse, lost and frightened, finds safety in Mary's little mouse house which becomes a trap. Will she be reunited with her mouse family?

One Night. A Story from the Desert (Christina Kessler)

Muhamad, a Tuareg boy of the desert, is trusted to take care of the goats. When a mother goat is ready to kid, Muhamad stays with her earning the respect of the elders as well as his manhood.

The Runaway Sleigh Ride (Astrid Lindgren)

Little Elizabeth gets into trouble when she hitches a ride on the back of a sleigh.

The Spy on Third Base (Matt Christopher)

T. V. Adams, third baseman, has to find a way to tactfully share his knack for predicting baseball outcomes with his teammates.

Summer Fun (Carolyn Haywood)

This collection of ten stories is about children learning the lessons fo friendship and cooperation in the pleasures of summertime.

There's a New Kid On the Block (Jack Prelutsky)

Poetry about school life and friendship.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

Wiley and the Hairy Man (Molly Bang)

With his mother's help, Wiley outwits the hairy creature that dominates the swamp near his home.

4. FLEXIBILITY IN THINKING

Airmail To the Moon (Tom Birdseye)

When the tooth that she was saving for the tooth fairy disappears, Ora Mae sets out to find the thief and send him "airmail to the moon."

Animals Should Definitely Not Wear Clothing (Judy Barrett)

Pictures of animals wearing clothes show why this would be a ridiculous custom for them to adopt .

Bamboozled (David Legge)

A young girl on her weekly visit to her grandad feels that there is something out of the ordinary but can't figure out what it is.

Bears Should Share (Alvin Granowsky)

Juxtaposes the traditional tale of the three bears' discovery that Goldilocks has been in their house eating their porridge and using their furniture with Goldilock's side of the story.

Brainy Bird Saves the Day (Alvin Granowsky)

Juxtaposes the traditional tale of Henny Penny and her friends with a retelling in which the animals' more careful analysis of the situation helps them avoid a sad ending.

Brer Rabbit (Series) (Joel Chandler Harris)

A collection of five tales in which Brer Rabbit outwits Brer Fox, Brer Wolf, and Brer Bear in order to ensure his family's survival during the drought.

Chato's Kitchen (Gary Soto)

Chato the cat prepares all kinds of food: fajitas, frijoles, salsa, enchiladas, and more.

Curious George (H. A. Rev)

The curiosity of a newly-captured monkey gets him into continual trouble.

Charlie and the Chocolate Factory (Ronald Dahl)

Each of five children lucky enough to discover an entry ticket into Willy Wonka's chocolate factory takes advantage of the situation in his own way.

Charlotte's Web (E. B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend, Charlotte, decides to help him.

Frederick (Leo Lionni)

Frederick the mouse dreams the summer away while his friends gather food. When winter arrives Frederick proves that he is a poet, not just a dreamer.

The Fisherman And His Wife & (The Four Clever Brothers) (Mitsumasa Anno)

Presents two tales from the Brothers Grimm, combined with Mr. Fox's highly unusual interpretations of them.

Freckle Juice (Judy Blume)

Andrew has to re-evaluate his desire for freckles after he buys a secret recipe that doesn't work.

Giants Have Feelings, Too (Alvin Granowsky)

Juxtaposes the traditional tale of Jack who climbs the beanstalk to a giant's castle with a retelling from the giant's point of view.

The Giving Tree (Shel Silverstein)

The love between a boy and a tree continues through the years of his boyhood into his old age.

Grandpa Toad's Secrets (Keiko Kasza)

Grandpa Toad teaches his grandson the secrets of survival, but Little Toad is the one who saves the day when a huge monster attacks them.

The Greedy Triangle (Marilyn Burns)

Dissatisfied with its shape, a triangle keeps asking the local shape shifter to add more lines and angles until it doesn't know what side is up.

Harry Kitten and Tucker Mouse (George Selden)

A tour of New York City sights with the two unlikely friends seeking adventures and survival.

Help Yourself, Little Red Hen (Alvin Granowsky)

Juxtaposes the traditional tale of the little red hen whose friends would not help her bake bread with the friend's side of the story.

The Hole By the Apple Tree (Nancy Polette)

Harold's imagination takes him on an adventure romp through the alphabet with a number of familiar storybook characters.

Hugh Can Do (Jennifer Armstrong)

Hugh wants to seek his fortune in the city, but first he must find a way to pay the toll-taker at the bridge.

The Iguana Brothers (Tony Johnston)

Dom and Tom, the iguana brothers, eat flowers, pretend to be dinosaurs, and discover that they can be best friends.

It Looked Like Spilt Milk (Charles Shaw).

Sometimes it looked like spilt milk, but it wasn't spilt milk. What was it?

Just a Friendly Old Troll (Alvin Granowsky).

Juxtaposes the traditional tale of the three billy goats that outwit a menacing troll with a retelling in which the troll tells his side of the story.

Jumangi (Chris VanAllsburg)

Left on their own for an afternoon, two bored and restless children find more excitement than they bargained for.

The King's Commissioners (Aileen Friedman)

While trying to keep track of his many royal commissioners, the king learns some new ways to counting.

Little Mouse's Paintings (Diane Wolkstein)

Little Mouse creates a painting which looks like three different things to her three friends, all of whom find themselves in it.

Lon Po Po: a Red Riding Hood Story from China (Ed Young)

Three sisters staying home alone are endangered by a hungry wolf who is disguised as their grandmother.

Mike Mulligan and His Steam Shovel Burton (Virginia Lee)

Mike Mulligan proves that, although outdated, his steam shovel is still useful.

The Minpins (Roald Dahl)

When Billy sneaks into the Forest of Sin, he encounters the miniature Minpin people, the terrifying Gruncher and then becomes a hero.

Muggie Maggie (Beverly Cleary)

Why doesn't Maggie learn to write cursive in third grade. Her teachers devise a strategy that piques her curiosity.

Parents In the Pigpen, Pigs In the Tub (Amy Ehlich)

Tired of their usual routine, the farm animals insist on moving into the house, so the family decides to move into the barn.

A Perfectly Orderly House (Ellen Kindt McKenzie).

An old woman builds a house with twenty-four rooms and keeps all her possessions in alphabetical order, but she still can't find anything.

Ramona (Series) (Beverly Cleary)

The humorous adventures of Ramona, an eight-year-old, as she deals with life and her family problems.

Rapunzel (Grimm Brothers retold by Amy Ehrlich)

A beautiful girl with extraordinarily long hair is imprisoned in a lonely tower by a witch.

Rumpelstiltskin (Grimm Brothers retold by Paul Zelinsky)

A strange little man helps the miller's daughter spin straw into gold for the king on the condition that she give him her first-born child.

Swamp Angel (Ann Isaacs)

Angelica Longrides was the greatest woodswoman in Tennessee who single-handedly saved settlers from the jaws of a fearsome bear.

The Toll Bridge Troll (Patricia Rae Wolff)

A troll tries to prevent Trigg from crossing the bridge on the way to school only to be outwitted by the boy's riddles.

The Trouble with Mister (Debra Keller)

Alex's parents thing a dog is too much trouble, so Alex finds another way to have the dog he's always wanted.

Two Bad Ants (Chris Van Allsburg)

When two bad ants desert from their colony, they experience a dangerous adventure that convinces them to return to their former safety.

What Do Authors Do? (Eileen Christelow)

Dedication and patience are what writing requires and the help supplied by friends, family, editors, designers, and printers.

Where The Wild Things Are (Maurice Sendak)

A naughty little boy, sent to bed without his supper, sails to the land of the wild things where he becomes their king.

Where's Waldo? (Martin Handford)

The reader follows Waldo as he hikes around the world and must try to find him in the illustrations of some of the crowded places he visits.

Wiley And the Hairy Man: adapted From An American Folk Tale (Molly Bang)

With his mother's help, Wiley outwits the hairy creature that nominates the swamp near his home.

William's Doll (Charlotte Zolotow)

William's father gives him a basketball and a train but these do not make him want a doll any less.

5. METACOGNITION: AWARENESS OF OUR OWN THINKING

Amelia Bedelia (Peggy Parrish)

A literal-minded housekeeper causes a ruckus wherever she goes.

Bamboozled (David Legge)

A young girl on her weekly visit to her grandad feels that there is something out of the ordinary but can't figure out what it is.

Curious George (H. A. Rey)

The curiosity of a newly-captured monkey gets him into continual trouble.

Dear Mr. Henshaw (Beverly Cleary)

In letters, ten-year-old Leigh reveals his problems in coping with his parents' divorce, being the new boy in school, and generally finding his own place.

The Fisherman And His Wife & The Four Clever Brothers (Mitsumasa Anno)

Presents two tales from the Brothers Grimm, combined with Mr. Fox's highly unusual interpretation of them.

Grandpa Toad's Secrets (Keiko Kasza)

Grandpa Toad teaches his grandson the secrets of survival, but Little Toad is the one who saves the day when a huge monster attacks them.

Knots On a Counting Rope (Bill Martin)

Boy-Strength-Of-Blue-Horses and his grandfather reminisce about the young boy's birth, his first horse, and an exciting horse race.

Losing Uncle Tim (Marykate Jordan)

Daniel struggles to understand death when his favorite uncle dies of AIDS.

The Matchlock Gun (Waiter D. Edmonds)

Early American history comes alive when Edward manages to fire the old Spanish gun and saves his family from an Indian massacre. (Caution: Negative depiction of Native Americans needs to be counter-balanced.)

Mike Mulligan and His Steam Shovel Burton (Virginia Lee)

Mike Mulligan proves that, although outdated, his steam shovel is still useful.

Kenny's Window (Maurice Sendak)

As Kenny tries to answer seven questions from his dream, he expands his awareness and understanding of himself and his world.

Nancy Drew (Series) (Carolyn Keene)

Nancy confronts and solves mysteries.

No Problem (Eileen Browne,)

Mouse's friends take turns putting together the pieces that come in a box as a birthday present, but, only one takes the time to read the instructions.

Ramona (Series) (Beverly Cleary)

The humorous adventures of Ramona, an eight-year-old, as she deals with life and her family problems.

Starring First Grade (Miriam Cohen)

Even though he doesn't like his part in the first grade play, Jim saves the performance when one of the key players gets stage fright.

The Toll-Bridge Troll (Patricia Rae Wolff)

A troll tries to prevent Trigg from crossing the bridge on the way to school only to be outwitted by the boy's riddles.

The Velveteen Rabbit (Margery Williams)

The boy's toy bunny explores the concept of being "real" and learns what it is to be loved in this classic story.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

Winnie the Pooh (A. A. Milne)

The adventures of Pooh, Piglet, Owl, Tigger, and Eeyore.

Zoom (Istvan Banyai)

A wordless picture book presents a series of scenes, each one from a picture farther away, showing, for example, a girl playing with toys which is actually a picture of a magazine cover, which is part of a sign on a bus, and so on.

6. CHECKING FOR ACCURACY AND PRECISION

Amelia Bedelia (Series) (Peggy Parrish)

A literal-minded housekeeper causes a ruckus wherever she goes.

Bamboozled (David Legge)

A young girl on her weekly visit to her granda d feels that there is something out of the ordinary but can't figure out what it is.

Be a Perfect Person (Stephen Manes)

Milo, tired of problems with his sister, parents, and classmates, finds a book in the library which promises to make him perfect in just three days.

Charlotte's Web (E. B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend, Charlotte, decides to help him.

Curious George (H. A. Rev)

The curiosity of a newly-captured monkey gets him into continual trouble.

Encyclopedia Brown (Series) (Donald Sobol)

America's Sherlock Holmes finds solutions to problems.

The Greedy Triangle (Marilyn Burns)

Dissatisfied with its shape, a triangle keeps asking the local shape shifter to add more lines and angles until it doesn't know which side is up.

Jumangi (Chris VanAllsburg)

Left on their own for an afternoon, two bored and restless children find more excitement than they bargained for.

Matchlock Gun (Walter D. Edmonds)

Early American history comes alive when Edward manages to fire the old Spanish gun and saves his family from an Indian massacre. (Caution: Negative depiction of Native Americans needs to be counter-balanced.)

Mike Mulligan and His Steam Shovel Burton (Virginia Lee)

Mike Mulligan proves that, although outdated, his steam shovel is still useful.

Nancy Drew (Series) (Carolyn Keene)

Nancy confronts and solves mysteries.

No Problem (Eileen Browne)

Mouse's friends take turns putting together the pieces that come in a box as a birthday present, but, only one takes the time to read the instructions.

Paddle-to-the Sea (Holling Clancy Holling)

This story of the journey of a tiny canoe carved and launched buy a Native American boy is a geographically vivid trip of natural and man-made sights.

Possum Magic (Mem Fox)

Two Australian possums go in search of the magic that will make the invisible one of them visible.

Ramona (Series) (Beverly Cleary)

The humorous adventures of Ramona, an eight-year-old, as she deals with life and her family problems.

Starring First Grade (Miriam Cohen)

Even though he doesn't like the part in the first grade play, Jim saves the performance when one of the key players gets stage fright.

A Tournament of Knights (Joe Lasker)

Justin prepares for his first tournament in which he opposes an experienced knigh in this sory of the Middle Ages that introduces the terminology of knighthood.

What Do Authors Do? (Eileen Christelow)

Dedication and patience are what writing requires and the help supplied by friends, family, editors, designers, and printers.

Winnie the Pooh (A. A. Milne)

The adventures of Pooh, Piglet, Owl, Tigger and Eeyore.

7. QUESTIONING AND PROBLEM POSING

Airmail To the Moon (Tom Birdseye)

When the tooth that she was saving for the tooth fairy disappears, Ora Mae sets out to find the thief and send him "airmail to the moon."

Amelia Bedelia (Peggy Parrish)

A literal-minded housekeeper causes a ruckus in the household when she attempts to make sense of some instructions.

Anna Banana and Me (Lenore Blegvad)

Anna Ban ana leaves her timid playmate paralyzed with fear after telling a scary story, until he finds a feather Anna told him was magical.

Annabelle Swift, Kindergartner (Amy Schwartz)

Older sister Lucy preps Annabelle for kindergarten but some of her advice backfires, but Annabelle bounces back by helping another child less prepared.

Arrow To the Sun: A Pueblo Indian Tale (Gerald McDermott)

An adaptation of the Pueblo Indian which explains how the spirit of the Lord of the Sun was brought to the world of men.

Arthur Meets the President (Marc Brown)

When Arthur meets the president after winning an essay contest, he nervously makes note cards so he won't forget what to say, but they get scrambled.

Big Al (Andrew Clements)

A big, ugly fish has trouble making the friends he longs for because of his appearance until the day his scary appearance saves them all.

Brave Irene (William Steig)

When her mother is ill and can't deliver a finished ball gown to the duchess, Irene tucks her in bed and braves a snowstorm to deliver the gown herself.

Busybody Nora (Johanna Hurwitz)

Nora is a curious little girl who wants to know everything about the other tenants of her apartment building.

Cat's Cradle, Owl's Eyes (Camilla Gryski)

Presents basic information for making string figures and gives step-by-step instructions for more than twenty specific figures.

Curious George (H. A. Rey)

The curiosity of a newly-captured monkey gets him into continual trouble.

Charlotte's Web (E. B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend, Charlotte, decides to help him.

Commander Toad (Series (Jane Yolen)

Commander Toad and his spaceship explore mysterious space adventures in these series books.

Favorite Just So Stories (Rudyard Kipling)

These tales that explain the ways of animals are full of descriptive and natural lore.

The Fisherman and His Wife & (The Four Clever Brothers) (Mitsumasa Anno)

Presents two tales from the Brothers Grimm, combined with Mr. Fox's highly unusual interpretations of them.

From the Mixed-Up Files of Mrs. B. Frankweiler (E. L. Konigsburg)

Two suburban children run away from their Connecticut home and go to NewYork's Metropolitan Museum of Art, where their ingenuity lets them live in luxury.

Flossie and the Fox (Patricia McKissack)

The wiley fox, notorious for stealing eggs, meets his match when he encounters a bold little girl who demands proof he is a fox before frightened.

The Greedy Triangle (Marilyn Burns)

Dissatisfied with its shape, a triangle keeps asking the shape shifter to add more lines and angles until he doesn't know which side is up.

Hugh Can Do (Jennifer Armstrong)

Hugh wants to seek his fortune in the city, but first he must find a way to pay the toll-taker at the bridge.

Heckedy Peg (Audrey Wood)

A mother saves her children from Heckedy Peg, a witch who has changed them into different kinds of food.

Ida And the Wool Smuggler (Sue Ann Alderson)

Ida, carrying bread to a neighbor's farm, stops to pet her favorite sheep, hears smugglers, and herds the sheep to safety.

Johnny Appleseed: a Tall Tale (Steven Kellogg)

Presents the life of John Chapman, better known as Johnny Appleseed, describing his love of nature.

Jumangi (Chris VanAllsburg)

Left on their own for an afternoon, two bored and restless children find more excitement than they bargained for.

Kenny's Window (Maurice Sendak)

As Kenny tries to answer seven questions from his dream, he expands his awareness and understanding of himself and his world.

The King's Commissioners (Aileen Friedman)

While trying to keep track of his many royal commissioners, the king learns some new ways of counting.

Little Blue and Little Yellow (Leo Lionni)

Two friendly globs of paint, one yellow and one blue, hug each other and become green.

Little House On the Prairie (Laura Ingalls Wilder)

Laura and her family move to Indian country in Kansas.

Mike Mulligan and His Steam Shovel Burton (Virginia Lee)

Mike Mulligan proves that, although outdated, his steam shovel is still useful.

Mirandy and Brother Wind (Patricia McKissack)

With quick wits Mirandy catches Brother Wind for her partner in a cake walk but later wishes her boyfriend, Ezel, was her partner.

Nancy Drew (Series) (Carolyn Keene)

Nancy confronts and solves mysteries.

A Perfectly Orderly House (Ellen Kindt McKenzie).

An old woman builds a house with twenty-four rooms and keeps all her possessions in alphabetical order, but she still can't find anything.

Parents in the Pigpen, Pigs In the Tub (Amy Ehrlich,)

Tired of their usual routine, the farm animals insist on moving into the house, so the family decides to move into the barn.

One Night. A Story from the Desert (Christina Kessler)

Muhamad, a Tuareg boy of the desert, is trusted to take care of the goats. When a mother goat is ready to kid, Muhamad stays with her earning the respect of the elders as well as his manhood.

Ramona (Series) (Beverly Cleary)

The humorous adventures of Ramona, an eight-year-old, as she deals with life and her family problems.

The Rainbow Fish (Marcus Pfister)

The most beautiful fish in the entire ocean discovers the real value of personal beauty and friendship.

Swimmy (Leo Lionni)

Swimmy, a small black fish, finds a way to help a school of small red fish.

Take-Along Dog (Barbara Ann Porte)

Because Mother doesn't like dogs, Sam and Abigail must figure out how to take their dog Benton with them wherever they go.

Tree Of Birds (Susan Meddaugh)

As winter approaches, Harry concludes that the treeful of Green Tufted Tropicals will not fly South without his beloved Sally, healing from a broken leg.

That's Exactly the Way It Wasn't (James Stevenson)

Grandpa and Uncle Wainey disagree on every detail of this uproarious tale that they are trying to tell the grandchildren Mary Ann and Louie.

The Way Things Work (David Macaulay)

Demonstrates how machines work and shows how the concept of one invention is linked to the concept of anoth er.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

The Wednesday Surprise (Eve Bunting)

Seven-year-old Anna and her grandmother are working on a special surprise for her father's birthday. Anna teaches grandma to read.

Woe is Moe (Diane Stanley)

Moe's new job in advertising at the ice cream factory brings him money, travel, and prestige so why is he lonely and miserable?

8. DRAWING ON PAST KNOWLEDGE AND APPLYING IT TO NEW SITUATIONS

Araboolies of Liberty Street (Sam Swope)

The kids of Liberty Street join forces to help the Araboolies when mean General Pinch orders them to move because they look different.

Bamboozled (David Legge)

A young girl on her weekly visit to her grandad feels that there is something out of the ordinary but can't figure out what it is.

Beneath the Ghost Moon (Jane Yolen)

Beneath the midnight moon, mice battle mean-hearted creepy-crawlies to protect their farmyard home.

The Black Snowman (Phil Mendez)

Young, discouraged Jacob has his self-esteem boosted when the snowman introduces him to his Afro-American heritage.

Bunnicula (James and Deborah Howe)

With the help of Harold the dog, Chester the cat tries to warn his human family that the new pet bunny is a vampire!

The Boxcar Children (Gertrude Chandler Warner)

Four orphans, two boys and two girls, set up housekeeping in an old boxcar.

Favorite Just So Stories (Rudyard Kipling)

These tales that explain the ways of animals are full of descriptive and natural lore.

The Fisherman And His Wife & (The Four Clever Brothers) (Mitsumasa Anno)

Presents two tales from the Brothers Grimm, combined with Mr. Fox's highly unusual interpretations of them.

Flossie and the Fox (Patricia McKissack)

The wiley fox, notorious for stealing eggs, meets his match when he encounters a bold little girl who demands proof he is a fox before frightened.

The Great Custard Pie Panic (Scott Corbett)

Nick and his dog Bert have to break free of Dr. Merlin's evil magical powers.

The Giving Tree (Shel Silverstein)

The love between a boy and a tree continues through the years of his boyhood into his old age.

Hopper (Marcus Pfister)

What adventures do Hopper and his mother have as they search for food in the forest?

The Hole By the Apple Tree (Nancy Polette)

Harold's imagination takes him on an adventure romp through the alphabet with a number of familiar storybook characters.

The Hundred Penny Box (Sharon Mathis)

Michael's love for his great-great aunt, who lives with them, leads him to intercede with his mother, who wants to toss out all old things.

Jumanji (Chris Van Allsburg)

After Peter and Judy find a game in the park, they have an extraordinary adventure that blends fantasy and reality.

Knots On a Counting Rope (Bill Martin)

Boy-Strength-of-Blue-Horses and his grandfather reminisce about the young boy's birth, his first horse, and an exciting horse race.

Little House On the Prairie (Laura Ingalls Wilder)

Laura and her family move to Indian country in Kansas.

Little Tricker the Squirrel Meets Big Double the Bear (Ken Kesey)

This is an Ozark tale of how Little Tricker outsmarts Big Double, a "hongry, grizzerly" bear, told in rich, descriptive prose.

One Night. A Story from the Desert (Christina Kessler)

Muhamad, a Tuareg boy of the desert, is trusted to take care of the goats. When a mother goat is ready to kid, Muhamad stays with her earning the respect of the elders as well as his manhood.

Rain Forest (Helen Cowcher)

The creatures live peacefully in the rain forest. But they know that change is coming when the Machine invades their world.

Summer Fun (Carolyn Haywood)

This collection of ten stories is about children learning the lessons to friendship and cooperation in the pleasures of summertime.

Tops and Bottoms (Janet Stevens)

Hare turns his bad luck around by striking a clever deal with the rich and lazy bear down the road.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

The Way Things Work (David Macaulay)

Demonstrates how machines work and shows how the concept of one invention is linked to the concept of another.

9. PRECISION OF LANGUAGE AND THOUGHT

Advice For a Frog (Alice Schertle)

Presents a collection of poems about the toucan, fruit bat, pangolin, and other animals.

Airmail To the Moon (Tom Birdseve)

When the tooth that she was saving for the tooth fairy disappears, Ora Mae sets out to find the thief and send him "airmail to the moon."

Amelia Bedelia (Series) (Peggy Parrish)

A literal-minded housekeeper causes ruckus wherever she goes.

Away From Home (Anita Lobel)

Proceeds through the alphabet using boys' names and the names of exotic places in alliterative fashion.

Bamboozled (David Legge)

A young girl on her weekly visit to her grandad feels that there is something out of the ordinary but can't figure out what it is.

The Bears on Hemlock Mountain (Alice Dalgliesh)

Jonathan, who is trying to be brave on his errand over Hemlock Mountain, is comforted by the repetitious chant, "There are NO bears on Hemlock Mountain..."

Bayou Lullaby (Kathi Appelt)

A colorful good-night poem to a "bayou gal." Includes a glossary with Cajun pronunciations.

Beneath the Ghost Moon (Jane Yolen)

Beneath the midnight moon, mice battle mean-hearted creepy-crawlies to protect their farmyard home.

Charlotte's Web (E.B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend. Charlotte, decides to help him.

Chato's Kitchen (Gary Soto)

Chato the cat prepares all kinds of good food: fajitas, frijoles, salsa, enchiladas, and more.

Crow Boy (Taro Yashima)

A story of a strange, shy little boy in a Japanese village school who was ignored by his classmates until the teacher shows them that Crow Boy has more to offer.

Favorite Just So Stories (Rudyard Kipling)

These tales that explain the ways of animals are full of descriptive and natural lore.

The Fisherman And His Wife & (The Four Clever Brothers) (Mitsumasa Anno)

Presents two tales from the Brothers Grimm, combined with Mr. Fox's highly unusual interpretations of them.

Gifts (Jo Ellen Bogart)

A grandmother travels around the world and brings back gifts for her granddaughter.

The Greedy Triangle (Marilyn Burns)

Dissatisfied with its shape, a triangle keeps asking the local shape shifter to add more lines and angles until it doesn't know which side is up.

Harry Kitten and Tucker Mouse (George Selden)

Á tour of New York City sights with the two unlikely friends seeking adventures and survival.

The Hole By the Apple Tree (Nancy Polette)

Harold's imagination takes him on an adventurous romp through the alphabet with a number of familiar storybook characters.

The Iguana Brothers (Tony Johnston)

Dom and Tom, the iguana brothers, eat flowers, pretend to be dinosaurs, and discover that they can be best friends.

The King Who Rained (Fred Gwynn)

A little girl pictures the things her parents talk about, such as a king who rained, bear feet, and the foot prince in the snow.

Light In the Attic (Shel Silverstein)

Includes a collection of humorous poems.

Miss Rumphius (Barbara Cooney)

Great-aunt Alice Rumphius was once a little girl longing to visit faraway places, and wished to do something to make the world more beautiful.

Mr. Popper's Penguins (Richard and Florence Atwater)

The Popper family find their lives changed and enriched with hilarious results when 12 penguins move into the household.

No Problem (Eileen Browne)

Mouse's friends take turns putting together the pieces that come in a box as a birthday present, but, only one takes the time to read the instructions.

Paddle-to-the Sea (Holling Clancy Holling)

This story of the journey of a tiny canoe carved and launched buy a Native American boy is a geographically vivid trip of natural and man-made sights.

A Perfectly Orderly House (Ellen Kindt McKenzie)

An old woman builds a house with twenty-six rooms and keeps all her possessions in alphabetical order, but she still can't find anything.

Sail Away (Donald Crews)

A family takes an enjoyable trip in their sailboat and watches the weather change throughout the day.

The Sign Of the Seahorse (Graeme Base)

Beyond the ken of mortal men, beneath the wind and waves there lies a land of shells and sand.

Sweet Clara and the Freedom Quilt (Deborah Hopkinson)

A young slave stitches a quilt with a map pattern which guides her to freedom in the North.

A Visit to William Blake's Inn (Nancy Willard)

There's lots of imagination and descriptive language in this book of poetry set in 18th century England.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

Where the Sidewalk Ends (Shel Silverstein)

A boy who turns into a television set and a girl who eats a whale are only two of the characters in a collection of humorous poetry.

Zin! Zin! Zin!: A Violin (Lloyd Moss)

Ten instruments take their parts one by one in a musical performance.

10. USING ALL THE SENSES

Advice For a Frog (Alice Schertle)

Presents a collection of poems about the toucan, fruit bat, pangolin, and other animals.

All the Places to Love (Patricia MacLachlin)

A young boy describes the favorite places that he shares with his family on his grandparents' farm and in the nearby countryside.

Autumn Harvest (Alvin Tresselt)

Illustrations and simple text describes the autumn season in the country.

Away From Home (Anita Lobel)

Proceeds through the alphabet using boys' names and the names of exotic places in alliterative fashion.

Bayou Lullaby (Kathi Appelt)

A colorful good-night poem to a "bayou gal." Includes a glossary with Cajun pronunciations.

Bamboozled (David Legge)

A young girl on her weekly visit to her grandad feels that there is something out of the ordinary but can't figure out what it is.

Busybody Nora (Johanna Hurwitz)

Nora is a curious little girl who wants to know everything about the other tenants of her apartment building.

The Chocolate Touch (Patrick Skene Catling)

It may seem like a dream come true, but John finds that having the "chocolate touch" has its bitter side.

Crow Boy (Taro Yashima)

A story of a strange, shy little boy in a Japanese village school who was ignored by his classmates until the teacher shows them that Crow Boy has more to offer.

Dog Breath (Dav Pilkey)

Hally, the Tosis family dog, has such bad breath that Mr. and Mrs. Tosis plan to give her away, until she proves to be an invaluable watchdog.

Favorite Just So Stories (Rudyard Kipling)

These tales that explain the ways of animals are full of descriptive and natural lore.

The Giving Tree (Shel Silverstein)

The love between a boy and a tree continues through the years of his boyhood into his old age.

Jumanji (Chris Van Allsburg)

After Peter and Judy find a game in the park, they have an extraordinary adventure that blends fantasy and reality.

Kat Kong (Dav Pilkey)

A spoof of the story of King Kong, with cat and mice characters.

Knots On a Counting Rope (Bill Martin)

Boy-Strength-of-Blue-Horses and his grandfather reminisce about the young boy's birth, his first horse, and an exciting horse race.

Little House On the Prairie (Laura Ingalls Wilder)

Laura and her family move to Indian country in Kansas.

Little Tricker the Squirrel Meets Big Double the Bear (Ken Kesey)

This is an Ozark tale of how Little Tricker outsmarts Big Double, a "hongry, grizzerly" bear, told in rich, descriptive prose.

My Five Senses (Aliki)

Relates the excitement a child feels when discovering the world through the use of the five senses.

The Toll-Bridge Troll (Patricia Rae Wolff)

A troll tries to prevent Trigg from crossing the bridge on the way to school only to be outwitted by the boy's riddles.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

Where the River Begins (Thomas Locker)

Two boys and their grandfather go on a camping trip to find the source of the river that flows by their home.

11. INGENUITY, ORIGINALITY, INSIGHTFULNESS: CREATIVITY

Advice For a Frog (Alice Schertle)

Presents a collection of poems about the toucan, fruit bat, pangolin, and other animals.

Airmail To the Moon (Tom Birdseye)

When the tooth that she was saving for the tooth fairy disappears, Ora Mae sets out to find the thief and send him "airmail to the moon."

Arrow To The Sun: A Pueblo Indian Tale (Gerald McDermott)

An adaptation of the Pueblo Indian myth which explains how the spirit of the Lord of the Sun was brought to the world of men.

Away From Home (Anita Lobel)

Proceeds through the alphabet using boys' names and the names of exotic places in alliterative fashion.

Bamboozled (David Legge)

A young girl on her weekly visit to her grandad feels that there is something out of the ordinary but can't figure out what it is.

The Bedspread (Sylvia Fair)

Two elderly sisters embroider the house of their childhood at either end of a white bedspread, each as she remembers it with results that surprise them.

Caps For Sale (Esphyr Slobodika)

The monkeys steal the peddlers caps while he is asleep.

Charlotte's Web (E.B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend, Charlotte, decides to help him.

The Chocolate Touch (Patrick Skene Catling)

It may seem like a dream come true, but John finds that having the "chocolate touch" has its bitter side.

Dazzle the Dinosaur (Marcus Pfister)

With beautiful glittering spines, Dazzle is the most spectacular dinosaur ever. Will Dazzle's shining spines save the day?

Dorrie and the Blue Witch (Patricia Coombs)

Dorrie, the little witch, learns a lot about trickery as the grown-up witches try to outsmart each other.

The Great Custard Pie Panic (Scott Corbett)

Nick and his dog Bert have to break free of Dr. Merlin's evil magical powers.

The Greedy Triangle (Marilyn Burns)

Dissatisfied with its shape, a triangle keeps asking the local shape shifter to add more lines and angles until it doesn't know which end is up.

Heckedy Peg (Audrey Wood)

A mother saves her seven children from Heckedy Peg, a witch who has changed them into different kinds of food.

The Hole By the Apple Tree (Nancy Polette)

Harold's imagination takes him on an adventurous romp through the alphabet with a number of familiar storybook characters.

Hugh Can Do (Jennifer Armstrong)

Hugh wants to seek his fortune in the city, but first he must find a way to pay the toll-taker at the bridge.

The Iguana Brothers (Tony Johnston)

Dom and Tom, the iguana brothers, eat flowers, pretend to be dinosaurs, and discover that they can be best friends.

Jumanji (Chris Van Allsburg)

After Peter and Judy find a game in the park, they have an extraordinary adventure that blends fantasy and reality.

Knots On a Counting Rope (Bill Martin)

Boy-Strength-of-Blue-Horses and his grandfather reminisce about the young boy's birth, his first horse, and an exciting horse race.

The Mitten (Jan Brett)

Delightful tale about a lost mitten which becomes the shelter for many fo rest animals.

The Minpins (Roald Dahl)

When Billy sneaks into the Forest of Sin, he encounters the miniature Minpin people, the terrifying Gruncher and then becomes a hero.

The Mouse and the Motorcycle (Beverly Cleary)

The adventures begin when Keith lends his toy motorcycle to Ralph the Mouse. Their friendship leads to fun and mischief.

Mr. Popper's Penguins (Richard and Florence Atwater)

The Popper family find their lives changed and enriched with hilarious results when 12 penguins move into the household.

My Father's Dragon (Ruth Stiles Gannett)

For the dramatic rescue of the poor, oppressed dragon, Elmer Elevator goes to Wild Island carrying an unusual assortment of belongings.

No Problem (Eileen Browne)

Mouse's friends take turns putting together the pieces that come in the box as a birthday present, but, only one takes the time to read the instructions.

Parents In the Pigpen, Pigs In the Tub (Amy Ehrlich)

Tired of their usual routine, the farm animals insist on moving into the house, so the family decides to move into the barn.

A Perfectly Orderly House (Ellen Kindt McKenzie)

An old woman builds a house with twenty-six rooms and keeps all her possessions in alphabetical order, but she still can't find anything.

Pippi Longstocking (Astrid Lindgren)

Pippi, a wonder girl, lives alone although she is only nine. She does many things such as tying brushes to her feet and skating in suds to scrub a floor.

Ramona (Series) (Beverly Cleary)

The humorous adventures of Ramona, an eight-year-old, as she deals with life and her family problems.

Swamp Angel (Anne Isaacs)

Angelica Longrider was the greatest woodswoman in Tennessee, who singlehandedly saves settlers from the jaws of a fearsome bear.

There's a Monster Under My Bed (James Howe)

Simon is sure there are monsters under his bed in the night -- he can even hear them breathing.

There's a Nightmare In My Closet (Mercer Mayer)

A small boy is determined not to be frightened by his nightmare and discovers that Nightmare is a cowardly crybaby.

The Tree (Gallimard Jeunesse)

Young children can watch a chestnut seed sprout roots and grow into a tree that blossoms and changes through the seasons right before their eyes.

The Toll-Bridge Troll (Patricia Rae Wolff)

A troll tries to prevent Trigg from crossing the bridge on the way to school only to be outwitted by the boy's riddles.

The Trouble With Mister (Debra Keller)

Alex's parents think a dog is too much trouble, so Alex finds another way to have the dog he's always wanted.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

Where's Waldo (Martin Handford)

The reader follows Waldo as he hikes around the world and must try to find him in the illustrations of some of the crowded places he visits.

12. WONDERMENT, INQUISITIVENESS, CURIOSITY

Amahl and the Night Visitors (Gian Carlo Menotti)

A crippled shepherd boy is invited to accompany the Magi to Bethlehem in this holiday classic.

Are You My Mother? (P. D. Eastman)

A bird being hatched finds that his mother is no where in sight, so he searches for her asking animals and many objects if they are his mother.

Armadillo Rodeo (Jan Brett)

Most armadillos are happy scratching sand and eating, but Bo longs for adventure.

"B" Is for Betsy (Carolyn Haywood)

Betsy and her friends begin school full of anticipation and curiosity.

Bamboozled (David Legge)

A young girl on her weekly visit to her grandad feels that there is something out of the ordinary but can't figure out what it is.

Bayou Lullaby (Kathi Appelt)

A colorful good-night poem to a "bayou gal," Includes a glossary with Cajun pronunciations.

Blueberries for Sale (Robert McCloskey)

Little Sal went with her mother to pick blueberries but Little Bear came to eat blueberries and they all get mixed up together.

Busybody Nora (Johanna Hurwitz)

Nora is a curious little girl who wants to know everything about the other tenants of her apartment building.

Charlotte's Web (E.B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend, Charlotte, decides to help him.

Curious George (H. A. Rev)

The curiosity of a newly-captured monkey gets him into continual trouble.

The Hole By the Apple Tree (Nancy Polette)

Harold's imagination takes him on an adventurous romp through the alphabet with a number of familiar storybook characters.

Is Your Mama a Llama? (Deborah Guarino)

Lloyd and Llama meet all kinds of animals as he asks his question, until at last his friends Llyn leads Lloyd to the answer he longs to hear.

The Jolly Mon (Jimmy Buffet)

A Caribbean tale of a musician/fisherman whose adventures include pirates and a dolphin rescue.

Jumanji (Chris Van Allsburg)

After Peter and Judy find a game in the park, they have an extraordinary adventure that blends fantasy and reality.

Knots On a Counting Rope (Bill Martin)

Boy-Strength-of-Blue-Horses and his grandfather reminisce about the young boy's birth, his first horse, and an exciting horse race.

The Magic School Bus (Series) (Joanna Cole)

While going on a special school bus trip children explore various scientific areas, "inside" the human body, the waterworks, the earth, etc.

Muggie Maggie (Beverly Cleary)

Why doesn't Maggie learn to write cursive in third grade. Her teachers devise a strategy that piques her curiosity.

One Morning in Maine (Robert McCloskey)

A family's experience in Maine one day include Sally's losing a tooth and a visit to the village.

Parents in the Pigpen, Pigs in the Tub (Amy Ehrlich)

Tired of their usual routine, the farm animals insist on moving into the house, so the family decides to move into the barn.

The Polar Express (Chris VanAllsburg)

A magical train ride on Christmas Eve takes a boy to the North Pole to receive a special gift from Santa Claus.

The Sign Of the Seahorse (Graeme Base)

Beyond the ken of mortal men, beneath the wind and waves, there lies a land of shells and sand.

Time Of Wonder (Robert McCloskey)

This book follows the activities of two children spending their summer vacation on an island off the coast of Maine.

Tom Thumb. Harcourt, 1989. (Richard Jesse Watson)

After many adventures, a tiny boy, no bigger than his fathers thumb, earns a place as the smallest Knight of the Round Table.

The Way Things Work (David Macaulay)

Demonstrates how machines work and shows how the concept of one invention is linked to the concept of another.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

Where's Waldo (Martin Handford)

The reader follows Waldo as he hikes around the world and must try to find him in the illustrations of some of the crowded places he visits.

UPPER ELEMENTARY

1. PERSISTENCE: PERSERVERING WHEN THE SOLUTION TO A PROBLEM IS NOT READILY APPARENT

Abel's Island (William Steig)

Abel, stranded on an island, learns how to survive winter on his own.

Alvin Webster's Surefire Plan for Success (And How It Failed) (Sheila Greenwald)

Alvin must cope with tutoring uncooperative Bone and with the impending arrival of a baby brother.

The Barn (Avi)

In an effort to fulfill their dying father's last request, nine-year-old Ben and his brother and sister construct a barn on their land in the Oregon Territory.

Cat's Cradle; Owl's Eyes: A Book of Strings (Camilla Gryski)

Fun for the fingers in these 21 ways to knotty fun.

Charlotte's Web (E.B. White)

Wilbur, a lovable pig, is rescued by Charlotte, a beautiful and intelligent spider.

The Courage of Sarah Noble (Alice Dalgliesh)

Sarah's courage is strengthened by the comfort of her mother's cloak.

Donovan's Word Jar (Monalisa DeGross)

When the jar that Donovan keeps his word collection in fills up, he finds a special way to give his words away and get something wonderful in return.

Harriet the Spy (Louise Fitzhugh)

Harriet's notebook of her thoughts and observations fall into the wrong hands.

Hatchet (Gary Paulson)

After a plane crash, thirteen-year-old Brian spends fifty-four days in the wilderness with only the aid of a hatchet given to him by his mother.

Homer Price (Robert McCloskey)

The life of Homer Price, including when he and his pet skunk capture four bandits and another about a doughnut machine on the rampage.

The House With a Clock in Its Walls (John Bellairs)

Lewis tries to discover the source of the mysterious ticking heard in Uncle Jonathan's mansion.

How They Built the Statue of Liberty (Mary J. Shapiro)

We know what she looks like, but how was she built?

How to Eat Fried Worms (Thomas Rockwell)

Billy takes the dare but that last worm is a tough one to swallow.

Island of the Blue Dolphins (Scott O'Dell)

Survival is the goal of an Indian girl who lives alone for 18 months on a rocky island off California's coast.

Julie of the Wolves (Jean Craighead George)

A girl caught between two cultures gets lost in the tundra and survives with the help of a wolf pack.

Martin Luther King, Jr. a Man Who Changed Things. (Carol Greene)

A simple biography of the minister and civil rights leader who helped American bl acks win many battles for equal rights.

Misty of Chincoteague (Marguerite Henry)

Classic story about the training of a wild pony.

My Side Of The Mountain (Jean George)

A young boy relates his adventures during the year he spends living alone in the Catskill Mountains including his struggle to survive.

Ramona (Series) (Beverly Cleary)

The humorous adventures of Ramona, an eight-year-old, as she deals with life and her family problems.

The Real McCoy (Wendy Towle)

A biography of the Canadian-born Black American who studied engineering in Scotland and patented over fifty inventions despite the racial obstacles.

Tales of a Fourth Grade Nothing, Fudge, and Superfudge (Judy Blume)

Poor precocious Fudge faces fifth grade and life with gloom in these funny episodic books.

The Talking Eggs (Robert San Souci)

A Southern folk tale in which kind Blanche; following the instructions of an old witch, gains riches, while her greedy sister makes fun of the old woman.

Upstairs Room (Johanna Reiss)

Hiding from Nazis is a scary experience in this true story.

What Do Authors Do? (Eileen Christelow)

Dedica stion and patience are what writing requires and the help supplied by friends, family, editors, designers and printers.

Where the Lilies Bloom (Vera Cleaver)

In the Great Smoky Mountains region, a fourteen-year-old girl struggles to keep her family together after their father dies.

The Whipping Boy (Sid Fleischman)

A bratty prince and his whipping boy have many adventures when they inadvertently trade places after becoming involved with d angerous outlaws.

2. DECREASING IMPULSIVITY

The Blossoms and the Green Phantom (Betsy Byars)

Junior Blossom has finally created the ultimate invention - the Green Phantom. It's big, black, and it's beautiful! All it needs is the secret ingredient.

The Borrowers (Mary Norton)

Little people live in an old house and do nicely by borrowing from the human inhabitants.

Charlie and the Chocolate Factory (Roald Dahl)

Charlie Bucket meets Willy Wonka in this most delicious modern fantasy.

Charlotte's Web (E.B. White)

Wilbur, a lovable pig, is rescued by Charlotte, a beautiful and intelligent spider.

The Eighteen Emergency (Betsy Byars)

When the toughest boy in school swears to kill him, twelve-year-old Mouse finds little help from friends and must prepare for this emergency alone.

Hatchet (Gary Paulson)

After a plane crash, thirteen-year-old Brian spends fifty-four days in the wilderness with only the aid of a hatchet given to him by his mother.

Homer Price (Robert McCloskey)

Six episodes in the life of Homer Price, including one in which he and his pet skunk capture four bandits and one about a doughnut machine on the rampage.

Maniac Magee (Jerry Spinelli)

He wasn't born with the name Maniac Magee. His real name was Jeffrey Lionel Magee, but when his parents died and his life changed so did his name.

Nothing's Fair in Fifth Grade (Barthe DeClements)

A fifth grade class, repelled by the overweight new student who has serious home problems, finally learns to accept him.

Pippi Longstocking (Astrid Lindgren)

Pippi, a wonder girl, lives alone although she is only nine. She does many things such as tying brushes to her feet and skating in suds to scrub the floor.

That Julia Redfern (Eleanor Cameron)

Julia learns to channel her imagination and uses her writing skills well following the death of her father.

The T.V. Kid (Betsy Byars)

To escape failure, boredom, and loneliness, a you ng boy plunges with all his imagination into the world of television.

The Upstairs Room (Johanna Reiss)

A Dutch Jewish girl describes the two-and-one-half years she spent in hiding in the upstairs bedroom of a farmer's house during World War II.

3. LISTENING TO OTHERS WITH UNDERSTANDING AND EMPATHY

Alvin Webster's Surefire Plan for Success (And How It Failed) (Sheila Greenwald)

Alvin must cope with tutoring uncooperative Bone and with the impending arrival of a baby brother.

Bridge to Terabithia (Katherine Paterson)

Jess and Leslie become friends and create a special place in the woods until the tragedy of an accidental death.

Charlotte's Web (E.B. White)

Wilbur, a lovable pig, is rescued by Charlotte, a beautiful and intelligent spider.

The Cricket in Times Square (Seldon)

Heartwarming adventures of Harry, Tucker, Chester and other animal friends who live in Times Square.

Dear Mr. Henshaw (Beverly Cleary)

A boy reveals his loneliness in his letters to an author.

From the Mixed-up Files of Mrs. Basil E. Frankweiler (E.L. Konigsburg)

Claudia and her young brother hide out in the New York Metropolitan Museum of Art for a week.

Hatchet (Gary Paulson)

After a plane crash, thirteen-year-old Brian spends fifty-four days in the wilderness with only the aid of a hatchet given to him by his mother.

The House Gobbaleen (Lloyd Alexander)

Unhappy over what he considers his bad luck, Tooley ignores his cat's warning and incites a greedy little man into his home.

The Indian in the Cupboard (Lynne Banks)

A miniature toy Indian comes to life in a magical cupboard.

Jacob Have I Loved (Katherine Paterson)

Feeling deprived all her life of schooling, friends, mother, and even her name by her twin sister, Louise finally begins to find her identity.

Matilda (Ronald Dahl)

Matilda is a genius but her family believes her only talent is as a scapegoat for everything that goes wrong.

Misty of Chincoteague (Marguerite Henry)

Classic story about the training of a wild pony.

Mouse and the Motorcycle (Beverly Cleary)

The adventures of a boy and a little mouse who wants to ride his toy motorcycle.

Mrs. Frisby and the Rats of NIMH (Robert O'Brien)

Escaped rats from NIMH try to set up their own society in the Maryland countryside.

Nothing's Fair in Fifth Grade (Barthe DeClements)

Elsie tries to overcome her feelings of worthlessness while dealing with being overweight.

Ramona the Pest and all Ramona books (Beverly Cleary)

A warmly humorous series of stories about convincingly real characters in home and school situations.

Sarah, Plain and Tall (Patricia MacLachlan)

A prairie family needs a mother and soon a mail-order bride arrives.

Spy on Third Base (Matt Christopher)

A third baseman is sick with anxiety about whether or not to help his team by using his knack for knowing where the batter is going to hit the ball.

Summer Fun (Carolyn Haywood)

A collection of ten stories, five previously published by the author, all of which take place during the summer.

Summer of the Swans (Betsy Byars)

A teen-age girl gains new insight to herself and her family when her mentally retarded brother gets lost.

Tales of a Fourth Grade Nothing, Fudge, and Superfudge (Judy Blume)

Poor precocious Fudge faces fifth grade and life with gloom in these funny episodic books.

The Talking Eggs (Robert San Souci)

A Southern folk tale in which kind Blanche; following the instructions of an old witch, gains riches, while her greedy sister makes fun of the old woman.

A Taste of Blackberries (Doris Smith Buchanan)

A boy experiences grief and guilt when his best friend dies.

That Julia Redfern (Eleanor Cameron)

Julia learns to channel her imagination and uses her writing skills well following the death of her father.

The Trumpet of the Swan (E.B. White)

Louis, a trumpeter swan, finds a friend named Sam and regains his voice.

You Shouldn't Have to Say Goodbye (Patricia Hermes)

For 13-year old Sarah, life consists of gymnastics, her best friend Robin, and her parents until her mother is diagnosed with terminal cancer.

4. FLEXIBILITY IN THINKING

101 Questions and Answers About the Universe (Roy Gallant)

Fact-filled answers to many questions.

Abel's Island (William Steig)

Abel, stranded on an island, learns how to survive winter on his own.

Alvin Webster's Surefire Plan for Success (And How It Failed) (Sheila Greenwald)

Alvin must cope with tutoring uncooperative Bone and with the impending arrival of a baby brother.

Anne of Green Gables (Lucy Montgomery)

Anne, an eleven-year-old orphan, is sent by mistake to live with a lonely, middle-aged brother and sister on a Prince Edward Island farm.

Buffalo Woman (Paul Goble)

A buffalo turns into a beautiful girl in this Plains Indian legend.

Cat's Cradle; Owl's Eyes: A Book of Strings (Camilla Gryski)

Fun for the fingers in these 21 ways to knotty fun.

Charlie and the Chocolate Factory (Roald Dahl)

Charlie Bucket meets Willy Wonka in this most delicious modern fantasy.

Choose Your Own Adventure (Series) (R. A. Montgomery)

Mystery problem solving stories.

Christmas Carol (Charles Dickens)

A miser learns the true meaning of Christmas when three ghostly visitors review his past and foretell his future.

Donovan's Word Jar (Monalisa DeGross)

When the jar that Donovan keeps his word collection in fills up, he finds a special way to give his words away and get something wonderful in return.

From the Mixed-up Files of Mrs. Basil E. Frankweiler (E.L. Konigsburg)

Claudia and her young brother hide out in the New York Metropolitan Museum of Art for a week.

Freckle Juice (Judy Blume)

Andrew wants freckles so badly that he buys Sharon's freckle recipe for fifty cents.

Great Brain (Series) (John Fitzgerald)

The ingenious, and sometimes devious adventures of T. D. and his brother J. D. in Mormon, Utah in the 1890's.

Homer Price (Robert McCloskey)

Six episodes in the life of Homer Price, including one in which he and his pet skunk capture four bandits and one about a doughnut machine on the rampage.

The House Gobbaleen (Lloyd Alexander)

Unhappy over what he considers his bad luck, Tooley ignores his cat's warning and incites a greedy little man into his home.

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Lewis tries to discover the source of the mysterious ticking heard in Uncle Jonathan's mansion.

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A girl caught between two cultures gets lost in the tundra and survives with the help of a wolf pack.

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Elsie tries to overcome her feelings of worthlessness while dealing with being overweight.

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Louis, a trumpeter swan, finds a friend named Sam and regains his voice.

5. METACOGNITION: AWARENESS OF OUR OWN THINKING

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Little people live in an old house and do nicely by borrowing from the human inhabitants.

Bridge to Terabithia (Katherine Paterson)

Jess and Leslie become friends and create a special place in the woods until the tragedy of an accidental death

Bunnicula (James Howe)

Though scoffed at by Harold the dog, Chester the cat tries to warn his human family that their foundling baby bunny must be a vampire.

Cam Jensen (Series) (David Adler)

Cam Jensen and his friends explore many adventures in space in these books that will captivate your imagination.

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Fun for the fingers in these 21 ways to knotty fun.

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Wilbur, a lovable pig, is rescued by Charlotte, a beautiful and intelligent spider.

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Sarah's courage is strengthened by the comfort of her mother's cloak.

Dear Mr. Henshaw (Beverly Cleary)

A boy reveals his loneliness in his letters to an author.

Encyclopedia Brown (Series B) (Donald Sobol)

America's Sherlock Holmes finds solutions to problems.

The Great Gilly Hopkins (Katherine Paterson)

An eleven-year-old foster child tries to cope with her longings and fears as she schemes against everyone who tries to be friendly.

Hardy Boys (Series) (Franklin Dixon)

The Hardy sleuths are called in to solve mysteries.

Harriet the Spy (Louise Fitzhugh)

Harriet's notebook of her thoughts and observations fall into the wrong hands.

Hatchet (Gary Paulson)

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A Light in the Attic (Shel Silverstein)

Hilarious and wildly popular poetry.

Nothing's Fair in Fifth Grade (Barthe DeClements)

Elsie tries to overcome her feelings of worthlessness while dealing with being overweight.

The Sign of the Beaver (Elizabeth Speare)

Left alone to guard the family's wilderness home in eighteenth century Maine, a boy is hard-pressed to survive until local Indians teach him their skills.

Stone Fox (John Gardiner)

Little Willy hopes to pay back taxes on his grandfather's farm with the purse from a dog sled race he enters.

Tales of a Fourth Grade Nothing, Fudge, and Superfudge (Judy Blume)

Poor precocious Fudge faces fifth grade and life with gloom in these funny episodic books.

A Taste of Blackberries (Doris Smith Buchanan)

A boy experiences grief and guilt when his best friend dies.

That Julia Redfern (Eleanor Cameron)

Julia learns to channel her imagination and uses her writing skills well following the death of her father.

Time for Andrew (Mary Downing Hahn)

Spending the summer with his great-aunt, eleven-year-old Drew is drawn eighty years into the past to trade places with his dead great-great-uncle.

Upstairs Room (Johanna Reiss)

Hiding from Nazis is a scary experience in this true story.

Where the Red Fern Grows (Wilson Rauls)

A loving threesome, they ranged the dark hills and river bottoms of Cherokee country. Old Dan had the brawn, Ann had the brains, and Billy had the will.

Where the Sidewalk Ends (Shel Silverstein)

Hilarious and wildly popular poetry.

You Shouldn't Have to Say Goodbye (Patricia Hermes)

For 13-year old Sarah, life consists of gymnastics, her best friend Robin, and her parents until her mother is diagnosed with terminal cancer.

6. CHECKING FOR ACCURACY AND PRECISION

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Fact-filled answers to many questions.

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Little people live in an old house and do nicely by borrowing from the human inhabitants.

The Boxcar Children (Gertrude Chandler Warner)

Four orphans, two boys and two girls, set up housekeeping in an old boxcar.

Bunnicula (James Howe)

Though scoffed at by Harold the dog, Chester the cat tries to warn his human family that their foundling baby bunny must be a vampire.

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Bridge to Terabithia (Katherine Paterson)

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The Brooklyn Bridge (Judith St. George)

Text and photos describe the seemingly impossible feat of building a bridge over the East River during the nineteenth century.

Bunnicula (James Howe)

Though scoffed at by Harold the dog, Chester the cat tries to warn his human family that their foundling baby bunny must be a vampire.

Charlie and the Chocolate Factory (Roald Dahl)

Charlie Bucket meets Willy Wonka in this most delicious modern fantasy.

The Cricket in Times Square (George Seldon)

With the help of a mouse and a cat, a musical cricket improves business at the newsstand run by Mario and his family.

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A boy reveals his loneliness in his letters to an author.

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A girl caught between two cultures gets lost in the tundra and survives with the help of a wolf pack.

J.T. (Jane Wagner)

J.T.'s sensitivity and responsibility emerge when he finds an old, one-eyed badly hurt alley cat.

Key To the Treasure (Peggy Parrish)

The adventures of Liza, Bill and Jed as they try to find the clues and solve the mystery of the "Key To the Treasure."

The Littles (John Peterson)

An introduction to the Littles, a family of tiny people.

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An introduction to the Littles, a family of tiny people.

The Man Who Tricked a Ghost (Laurence Yep)

Sung, a brave man who is not afraid of ghosts, meets one on a dark road and tricks it into revealing its secret weakness.

The Matchlock Gun (Walter Edmonds)

In 1756, during the French and Indian War in upper New York, ten-year-old Edward is determined to protect his family with an ancient Spanish gun.

Mrs. Frisby And the Rats Of Nimh (Robert O'Brien)

Getting no help with her problems, a widowed mouse visits the rats whose former imprisonment in a laboratory made them wise and long-lived.

Nothing's Fair in Fifth Grade (Barthe DeClements)

Elsie tries to overcome her feelings of worthlessness while dealing with being overweight.

Ramona the Pest and all Ramona books (Beverly Cleary)

A warmly humorous series of stories about convincingly real characters in home and school situations.

Stone Fox (John Gardiner)

Little Willy hopes to pay back taxes on his grandfather's farm with the purse from a dog sled race he enters.

That Julia Redfern (Eleanor Cameron)

Family loss and other unexpected, even strange occurrences cannot dampen for long the spirits of the irrepressible Julia.

Trumpet of the Swan (E. B. White)

Knowing how to read and write is not enough for Louis, a voiceless Trumpeter Swan; his determination to learn to play a stolen trumpet takes him far.

Weasel (Cynthia DeFelice)

Alone in the frontier wilderness in the winter while her father is recovering from an injury, Nathan runs afoul of the renegade killer known as Weasel.

8. DRAWING ON PAST KNOWLEDGE AND APPLYING IT TO NEW SITUATIONS

Abel's Island (William Steig)

Abel, stranded on an island, learns how to survive winter on his own.

Buffalo Woman (Paul Goble)

A buffalo turns into a beautiful girl in this Plains Indian legend.

The Courage of Sarah Noble (Alice Dalgliesh)

Sarah's courage is strengthened by the comfort of her mother's cloak.

The Cricket in Times Square (Seldon)

Heartwarming adventures of Harry, Tucker, Chester and other animal friends who live in Times Square.

Dear Mr. Henshaw (Beverly Cleary)

A boy reveals his loneliness in his letters to an author.

The Gathering of Days (Joan Blos)

The journal of a fourteen-year-old girl, kept the last year she lived on the family farm, record's daily events in her small N ew Hampshire town.

Hatchet (Gary Paulsen)

After a plane crash, Brian spends fifty-four days in the wilderness with only the aide of a hatchet given him by his mother.

The Indian in the Cupboard (Lynne Banks)

A miniature toy Indian comes to life in a magical cupboard.

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My Side of the Mountain (Jean Craighead George)

A young boy relates his adventures during the year he spends living alone in the Catskill Mountains.

Sarah, Plain and Tall (Patricia MacLachlan)

A prairie family needs a mother and soon a mail-order bride arrives.

Tales of a Fourth Grade Nothing, Fudge, and Superfudge (Judy Blume)

Poor precocious Fudge faces fifth grade and life with gloom in these funny episodic books.

Tuck Everlasting (Natalie Babbitt)

The Tuck Family is confronted with an agonizing situation when they discover that a ten-yearold girl and a stranger now share their secret.

Where the Lilies Bloom (Vera Cleaver)

In the Great Smoky Mountain region, a fourteen-year-old girl struggles to keep her family together after their father dies.

The Witch of Blackbird Pond (Elizabeth George Speare)

A young girl's rebellion against bigotry culminates in a terrifying witch hunt and trial.

9. PRECISION OF LANGUAGE AND THOUGHT

101 Questions and Answers About the Universe (Roy Gallant)

Fact-filled answers to many questions.

Charlotte's Web (E.B. White)

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Poor James has to escape somehow from Aunt Sponge and Aunt Spiker and finds refuge in a magic peach.

A Light in the Attic (Shel Silverstein)

Hilarious and wildly popular poetry.

Many Luscious Lollipops (Ruth Heller)

Illustrations and a simple text introduce readers to adjectives and demonstrate how they are used.

Mary Poppins (P.L. Travers)

Jane and Michael find fun and adventure with their incredible nanny.

That Julia Redfern (Eleanor Cameron)

Julia learns to channel her imagination and uses her writing skills well following the death of her father.

Where the Sidewalk Ends (Shel Silverstein)

Hilarious and wildly popular poetry.

Who Says a Dog Goes Bow-Wow (Hank De Zutter)

Presents animal sounds in many different languages.

10. USING ALL THE SENSES

Abel's Island (William Steig)

Abel, stranded on an island, learns how to survive winter on his own.

The Borrowers (Mary Norton)

Little people live in an old house and do nicely by borrowing from the human inhabitants.

Bridge to Terabithia (Katherine Paterson)

Jess and Leslie become friends and create a special place in the woods until the tragedy of an accidental death.

Charlotte's Web (E. B. White)

Wilbur the pig, is upset when he discovers that he is to be the farmer's dinner until his spider friend, Charlotte, decides to help him.

To Climb a Waterfall (Jean Craighead George)

Gives directions for climbing a waterfall, including where to rest and what to look for.

Harriet the Spy (Louise Fitzhugh)

Harriet's notebook of her thoughts and observations fall into the wrong hands.

Hatchet (Gary Paulsen)

After a plane crash, thirteen-year-old Brian spends fifty-four days in the wilderness with only the aid of a hatchet given to him by his mother.

Island of the Blue Dolphins (Scott O'Dell)

Survival is the goal of an Indian girl who lives alone for 18 months on a rocky island off California's coast.

James and the Giant Peach (Roald Dahl)

Poor James has to escape somehow from Aunt Sponge and Aunt Spiker and finds refuge in a magic peach.

Julie of the Wolves (Jean Craighead George)

A girl caught between two cultures gets lost in the tundra and survives with the help of a wolf pack.

Mary Poppins (P.L. Travers)

Jane and Michael find fun and adventure with their incredible nanny.

Misty of Chincoteague (Marguerite Henry)

Classic story about the training of a wild pony.

The Sign Of the Beaver (Elizabeth Speare)

Left alone to guard the family's wilderness home in eighteenth century Maine, a boy is hard-pressed to survive until local Indians teach him their skills.

The Summer Of the Swans (Betsy Cromer Byars)

A teen-age girl gains new insight into herself and her family when her mentally retarded brother gets lost.

The Trumpet Of the Swan (E. B. White)

A voiceless trumpeter Swan is determined to learn to play a stolen trumpet and it takes him far from his wilderness home.

Upstairs Room (Johanna Reiss)

Hiding from Nazis is a scary experience in this true story.

Where the Red Fern Grow (Wilson Rawls)

Old Dan had the brawl, Little Ann had the brains, and Billy had the will to train them to be the finest hunting team in the valley.

The Whipping Boy (Sid Fleischman)

A bratty prince and his whipping boy have many adventures when they inadvertently trade places after becoming involved with dangerous outlaws.

Who Says a Dog goes Bow-Wow (Hank De Zutter)

Presents animal sounds in different languages.

11. INGENUITY, ORIGINALITY, INSIGHTFULNESS: CREATIVITY

Alvin Webster's Surefire Plan for Success (And How It Failed) (Sheila Greenwald)

Alvin must cope with tutoring uncooperative Bone and with the impending arrival of a baby brother.

The Borrowers (Mary Norton)

Little people live in an old house and do nicely by borrowing from the human inhabitants.

Buffalo Woman (Paul Goble)

A buffalo turns into a beautiful girl in this Plains Indian legend.

Charlie and the Chocolate Factory (Roald Dahl)

Charlie Bucket meets Willy Wonka in this most delicious modern fantasy.

Charlotte's Web (E.B. White)

Wilbur, a lovable pig, is rescued by Charlotte, a beautiful and intelligent spider.

The Cricket in Times Square (Seldon)

Heartwarming adventures of Harry, Tucker, Chester and other animal friends who live in Times Square.

Freckle Juice (Judy Blume)

Andrew wants freckles so badly that he buys Sharon's freckle recipe for fifty cents.

From the Mixed-up Files of Mrs. Basil E. Frankweiler (E.L. Konigsburg)

Claudia and her young brother hide out in the New York Metropolitan Museum of Art for a week.

The Great Gilly Hopkins (Katherine Paterson)

An eleven-year-old foster child tries to cope with her longings and fears as she schemes against everyone who tries to be friendly.

Hatchet (Gary Paulsen)

After a plane crash, thirteen-year-old Brian spends fifty-four days in the wilderness, with only the aid of a hatchet given to him by his mother.

The House With a Clock in Its Walls (John Bellairs)

Lewis tries to discover the source of the mysterious ticking heard in Uncle Jonathan's mansion.

How They Built the Statue of Liberty (Mary J. Shapiro)

We know what she looks like, but how was she built?

How to Eat Fried Worms (Thomas Rockwell)

Billy takes the dare but that last worm is a tough one to swallow.

The Indian in the Cupboard (Lynne Banks)

A miniature toy Indian comes to life in a magical cupboard.

Island of the Blue Dolphins (Scott O'Dell)

Survival is the goal of an Indian girl who lives alone for 18 months on a rocky island off California's coast.

James and the Giant Peach (Roald Dahl)

Poor James has to escape somehow from Aunt Sponge and Aunt Spiker and finds refuge in a magic peach.

Julie of the Wolves (Jean Craighead George)

A girl caught between two cultures gets lost in the tundra and survives with the help of a wolf pack.

A Light in the Attic (Shel Silverstein)

Hilarious and wildly popular poetry.

Mary Poppins (P.L. Travers)

Jane and Michael find fun and adventure with their incredible nanny.

Mrs. Frisby and the Rats of NIMH (Robert O'Brien)

Escaped rats from NIMH try to set up their own society in the Maryland countryside.

Ramona the Pest and all Ramona books (Beverly Cleary)

A warmly humorous series of stories about convincingly real characters in home and school situations.

The Sign Of the Beaver (Elizabeth Speare)

Left alone to guard the family's wilderness home in eighteenth century Maine; a boy is hard pressed to survive until local Indians teach him their skills.

Tales of a Fourth Grade Nothing, Fudge, and Superfudge (Judy Blume)

Poor precocious Fudge faces fifth grade and life with gloom in these funny episodic books.

That Julia Redfern (Eleanor Cameron)

Julia learns to channel her imagination and uses her writing skills well following the death of her father.

Where the Sidewalk Ends (Shel Silverstein)

Hilarious and wildly popular poetry.

The Whipping Boy (Sid Fleischman)

A bratty prince and his whipping boy have many adventures when they inadvertently trade places after becoming involved with dangerous outlaws.

12. WONDERMENT, INQUISITIVENESS, CURIOSITY

101 Questions and Answers About the Universe (Roy Gallant) Fact-filled answers to many questions.

Abel's Island (William Steig)

Abel, stranded on an island, learns how to survive winter on his own.

An Autumn Tale (David Updike)

When Homer puts his jack-o-lantern over his head like a helmet on the eve of Halloween, he gains access to a secret meeting of the trees celebrating.

Bambi (Felix Salten)

The adventures of a young deer in the forest as he grows into a beautiful stag.

Buffalo Woman (Paul Goble)

A buffalo turns into a beautiful girl in this Plains Indian legend.

Heidi (Johanna Spyri)

The adventure of Heidi, a young Swiss girl living high on the mountain with her grandfather.

The House With a Clock in Its Walls (John Bellairs)

Lewis tries to discover the source of the mysterious ticking heard in Uncle Jonathan's mansion.

How They Built the Statue of Liberty (Mary J. Shapiro)

We know what she looks like, but how was she built?

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A Light in the Attic (Shel Silverstein)

Hilarious and wildly popular poetry.

Mary Poppins (P.L. Travers)

Jane and Michael find fun and adventure with their incredible nanny.

Misty of Chincoteague (Marguerite Henry)

Classic story about the training of a wild pony.

The River (Gary Paulsen)

Fifteen-year-old Brian, profoundly changed by his time in the wild, is asked to undergo a similar experience to help scientists learn more about survival.

Where the Sidewalk Ends (Shel Silverstein)

Hilarious and wildly popular poetry.

MIDDLE SCHOOL/JUNIOR HIGH

1. PERSISTENCE: PERSERVERING WHEN THE SOLUTION TO A PROBLEM IS NOT READILY APPARENT

Auks, Rocks and the Odd Dinosaur: Inside Stories From the Smithsonian Museum of Natural History (Peggy Thompson)

Watch the crew at work behind the scenes, collecting and setting up displays at the museum.

The Blue Sword (Robin McKinley)

Harry Crewe becomes involved in the life of the Damarians, their king, and the Blue Sword.

The Book of Three (Lloyd Alexander)

An assistant pig-keeper finds glory and adventure while searching for an unique pig.

The Hobbit (J.R.R. Tolkien)

In quest of a stolen treasure, a wizard and a hobbit go through a series of fantastic adventures.

House of Dies Drear (Virginia Hamilton)

Thomas solves the mystery of the old house which was formerly a station on the Underground Railroad.

The Planet of Junior Brown (Virginia Hamilton)

Junior and Buddy are two unforgettable characters though an unlikely pair of friends.

Roll of Thunder, Hear My Cry (Mildred Taylor)

The Logan family battles against injustice and racism in the South.

Slake's Limbo (Felice Holman)

While living in the subway tunnels for four months with Aremis, Slake goes from fear to hope.

The Whipping Boy (Sid Fleischman)

Both Prince Brat and Jemmy, his whipping boy, dream of freedom.

The White Mountains (John Christopher)

Will and his friends must flee to the White Mountains to escape space aliens.

A Wrinkle in Time (Madeline L'Engle)

Three children are caught in a time warp searching for Meg's Dad, a scientist

Z for Zachariah (Robert O'Brien)

Following a catastrophic war, a young girl has reason to be afraid when she realizes she is not alone.

2. DECREASING IMPULSIVITY

The Great Gilly Hopkins (Katherine Paterson)

Gilly learns to drop her facade of toughness when she meets with the love of a foster mother.

Roll of Thunder, Hear My Cry (Mildred Taylor)

The Logan family battles against injustice and racism in the South.

3. LISTENING TO OTHERS WITH UNDERSTANDING AND EMPATHY

Dicey's Song (Cynthia Voight)

Dicey is growing up fast in the midst of many family problems.

The Great Gilly Hopkins (Katherine Paterson)

Gilly learns to drop her facade of toughness when she meets with the love of a foster mother.

House of Dies Drear (Virginia Hamilton)

Thomas solves the mystery of the old house which was formerly a station on the Underground Railroad.

In the Year of the Boar and Jackie Robinson (Bette Bao Lord)

Humorous incidents show how Shirley Temple Wong adjusts to life in America in the 1940's.

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The Lion, the Witch and the Wardrobe (C.S. Lewis)

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Southern Fried Rat (Daniel Cohen)

Gruesome stories that are sure to please.

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6. CHECKING FOR ACCURACY AND PRECISION

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Watch the crew at work behind the scenes, collecting and setting up displays at the museum.

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7. QUESTIONING AND PROBLEM POSING

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8. DRAWING ON PAST KNOWLEDGE AND APPLYING IT TO NEW SITUATIONS

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9. PRECISION OF LANGUAGE AND THOUGHT

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HIGH SCHOOL

1. PERSISTENCE: PERSERVERING WHEN THE SOLUTION TO A PROBLEM IS NOT READILY APPARENT

The Autobiography of Miss Jane Pittman (Ernest Gaines)

From being freed from slavery after the Civil War to her participation in the civil rights movement in the 1960's, Miss Jane's life provides an insight into history.

Beloved (Toni Morrison)

Told in flashbacks, this historical novel deals with slavery and its dehumanizing legacy on individuals and families.

The Chocolate War (Robert Cormier)

Jerry is destroyed by the evil headmaster and a secret student organization when he confronts the system by refusing to join the annual fundraising drive.

The Clan of the Cave Bear (Jean Auel)

Set in prehistoric times, Ayla learns to survive after being rescued by a Neanderthal clan.

Dove (Robin Lee Graham)

Alone on a six-year sail in the South Pacific, Robin Graham's adventures include lonely boredom, storms and danger, new friends and love.

El Dorado (Lloyd Alexander)

Seventeen-year-old Vesper Holly eagerly explores her Central American volcano property only to find her land and the native Indians threatened by Alain de Rochefort.

Farewell to Manzanar (Jeanne Wakatsuki Houston)

Fears and frustrations are experienced by a Japanese-American girl and her family when they are placed in a relocation camp after the bombing of Pearl Harbor.

Five Smooth Stones (Ann Fairbairn)

David struggles and earns his acceptance to a prestigious northern university. After meeting Sarah, he fights both his feelings for her and the prejudice he faces, eventually becoming a civil rights leader.

Hatchet (Gary Paulsen)

On his way to spending the summer with his Dad, Brian finds strength and courage within himself after he becomes the sole survivor of a plane crash.

I Heard the Owl Call My Name (Margaret Craven)

A terminally ill vicar is sent to a remote Indian village in British Columbia and experiences love, courage and dignity.

If Beale Street Could Talk (James Baldwin)

A powerful love story of survival in spite of prejudice and injustice.

Motown and Didi (Walter Dean Myers)

Motown and Didi are drawn to each other, looking for hope in their future.

Mr. and Mrs. Bo Jo Jones (Ann Head)

Despite the pressures of a forced marriage and parental protectiveness, July and Bo Jo struggle to face adulthood.

No Language But a Cry (Richard D'Ambrosio)

A psychoanalyst tells the story of a girl named Laura and her miraculous recovery from physical abuse.

Profiles in Courage (John F. Kennedy)

Despite the vilification or vindication received, each courageous statesman made a decision based on principle.

The Red Badge of Courage (Stephen Crane)

After Henry eagerly enlists in Union Army, he must face the effects of the horror of war.

Split Infinity (Piers Anthony)

Stile struggles to survive in two worlds, one of games and one of magic.

Studs Lonigan (James Farrell)

A view of the social upheavals in the early 1900's as Studs struggles to make his life match his dreams

Wolf Rider: A Tale of Terror (Avi)

Andy is on his own to seek out a stalker who now seems to be stalking him in this psychological thriller.

The Year Without Michael (Susan Beth Pfeffer)

After watching her family fall apart when her brother disappears, Jodi risks her own life to find him on the streets of New York City.

Z for Zachariah (Robert O'Brien)

One of the few survivors of World War III, Ann is first thrilled, then later threatened, when a stranger enters her valley.

2. DECREASING IMPULSIVITY

Anne Frank: The Diary of a Young Girl (Anne Frank)

The changing ideas and feelings of young girl growing up in midst of fear before being discovered by Gestapo.

The Chocolate War (Robert Cormier)

Jerry is destroyed by the evil headmaster and a secret student organization when he confronts the system by refusing to join the annual fundraising drive.

Dove (Robin Lee Graham)

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Mr. and Mrs. Bo Jo Jones (Ann Head)

Despite the pressures of a forced marriage and parental protectiveness, July and Bo Jo struggle to face adulthood.

The Obnoxious Jerks (Stephen Manes)

Frank is flattered when asked to join the non-conformist group at school.

The Pigman (Paul Zindel)

Mr. Pignati, like John and Lorraine, is lonely and lives on dreams. The trio does wild, zany things to avoid adult responsibilities.

Siddhartha (Herman Hesse)

Siddhartha searches for meaningful life in the spiritual and material worlds.

The Things I Did for Love (Ellen Conford)

Stephanie learns a great deal when she decides to research the concept of love for a psychology project.

3. LISTENING TO OTHERS WITH UNDERSTANDING AND EMPATHY

Animal Farm (George Orwell)

A witty fable depicting a totalitarian society in which the animals finally rebel.

The Autobiography of Miss Jane Pittman (Ernest Gaines)

From being freed from slavery after the Civil War to her participation in the civil rights movement in the 1960's, Miss Jane's life provides an insight into history.

The Bell Jar (Sylvia Plath)

Esther launches her career in New York City but her hectic and hollow life leads to depression and a breakdown.

Beloved (Toni Morrison)

Told in flashbacks, this historical novel deals with slavery and its dehumanizing legacy on individuals and families.

Black Like Me (John Howard Griffin)

Disguised as a black man, Griffin experiences the hatred, injustice, and insults from white society as he travels through the South.

A Death in the Family (James Agee)

A grieving family must come to grips with emotions and relationships when the father is killed in an accident.

Deenie (Judy Blume)

Deenie's scoliosis ends her mother's modeling dreams for her and both of them must now adjust to the situation.

Five Smooth Stones (Ann Fairbairn)

David struggles and earns his acceptance to a prestigious northern university. After meeting Sarah, he fights both his feelings for her and the prejudice he faces, eventually becoming a civil rights leader.

Flowers for Algernon (Daniel Keyes)

Charlie's journal reflects his intellectual and social growth following an extraordinary surgery that transforms him from mental dullness to brilliance.

The Heart is a Lonely Hunter (Carson McCullers)

An awkward teenage girl, a bitter black doctor, a drunken radical, a bar owner and a deaf mute share loneliness and the need to communicate with others.

I Heard the Owl Call My Name (Margaret Craven)

A terminally ill vicar is sent to a remote Indian village in British Columbia and experiences love, courage and dignity.

I Know Why the Caged Bird Sings (Maya Angelou)

Maya recalls her childhood, including being assaulted which had emotionally devastating consequences.

If Beale Street Could Talk (James Baldwin)

A powerful love story of survival in spite of prejudice and injustice.

Motown and Didi (Walter Dean Myers)

Motown and Didi are drawn to each other, looking for hope in their future.

The Moves Make the Man (Bruce Brooks)

Jerome knows the skills needed to survive in basketball and life itself but his friend Bix refuses to learn the fake moves.

Night Kites (M.E. Kerr)

As one of the first young adult novels to deal with AIDS, the concepts of loyalty, guilt, and family solidarity are explored as Erick experiences terminations of life, friendship and love.

No Language But a Cry (Richard D'Ambrosio)

A psychoanalyst tells the story of a girl named Laura and her miraculous recovery from physical abuse.

Ordinary People (Judith Guest)

Conrad attempts suicide due to the grief and guilt that followed his brother's drowning as his family seems to disintegrate.

The Planet of Junior Brown (Virginia Hamilton)

Friendship and brotherhood are themes when Buddy takes Junior to an underground hideout.

A Separate Peace (John Knowles)

Tragic story of a fleeting, intense friendship between two boys in a New England boarding school during the early years of World War II.

A Tale of Two Cities (Charles Dickens)

Classic novel of the French Revolution and a friend's self-sacrifice.

Tisha (Robert Specht)

Anne Hobbes journeys to Alaska in 1927 to teach school in the tiny town of Chicken.

To Kill a Mockingbird (Harper Lee)

View of small town Southern life through eyes of Scout, daughter of the defense attorney in a racially charged trial.

The Year of the Gopher (Phyllis Reynolds Naylor)

George defies family tradition by choosing not to go to Harvard.

4. FLEXIBILITY IN THINKING

Catcher in the Rye (J. D. Salinger)

Holden Caulfield encounters hypocrisy and phonies among his classmates and in the adult world.

The Clan of the Cave Bear (Jean Auel)

Set in prehistoric times, Ayla learns to survive after being rescued by a Neanderthal clan.

Flowers for Algernon (Daniel Keyes)

Charlie's journal reflects his intellectual and social growth following an extraordinary surgery that transforms him from mental duliness to brilliance.

The Hitchhiker's Guide to the Galaxy (Douglas Adams)

Arthur races to save the universe with Ford Prefect, a galaxy tour guide writer.

The Metamorphosis (Franz Kafka)

When Gregor awakens one morning to find he has become a giant cockroach, both he and his family have some adjustments to make.

The Mosquito Coast (Paul Theroux)

Charlie records his family's experiences as they follow his father's utopian but irrational dreams in the Honduran wilderness.

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Split Infinity (Piers Anthony)

Stile struggles to survive in two worlds, one of games and one of magic.

Studs Lonigan (James Farrell)

A view of the social upheavals in the early 1900's as Studs struggles to make his life match his dreams.

Tisha (Robert Specht)

Anne Hobbes journeys to Alaska in 1927 to teach school in the tiny town of Chicken.

The World According to Garp (John Irving)

Satire abounds in this novel of Garp's progression from son to husband to father and writer.

Z for Zachariah (Robert O'Brien)

One of the few survivors of World War III, Ann is first thrilled, then later threatened, when a stranger enters her valley.

5. METACOGNITION: AWARENESS OF OUR OWN THINKING

Animal Farm (George Orwell)

A witty fable depicting a totalitarian society in which the animals finally rebel.

The Autobiography of Malcolm X (Malcolm X)

Malcolm X chronicles his life from childhood to the streets, prison and conversion to Islam.

A Brief History of Time: From the Big Bang to Black Holes (Stephen Hawking)

A challenging explanation of the origin of the universe and where it's going by one of the greatest physicists and a remarkable man.

Catch-22 (Joseph Heller)

A savage, often raunchy, attack on war in which a World War II flier tries to convince his comrades that he is too insane to continue.

The Chocolate War (Robert Cormier)

Jerry is destroyed by the evil headmaster and a secret student organization when he confronts the system by refusing to join the annual fundraising drive.

The Clan of the Cave Bear (Jean Auel)

Set in prehistoric times, Ayla learns to survive after being rescued by a Neanderthal clan.

Dove (Robin Lee Graham)

Alone on a six-year sail in the South Pacific, Robin Graham's adventures include lonely boredom, storms and danger, new friends and love.

Hatchet (Gary Paulsen)

On his way to spending the summer with his Dad, Brian finds strength and courage within himself after he becomes the sole survivor of a plane crash.

Hiroshima (John Hersey)

The dramatic and harrowing experiences of six survivors of the bomb.

I Know Why the Caged Bird Sings (Maya Angelou)

Maya recalls her childhood, including being assaulted which had emotionally devastating consequences.

Night Kites (M.E. Kerr)

As one of the first young adult novels to deal with AIDS, the concepts of loyalty, guilt, and family solidarity are explored as Erick experiences terminations of life, friendship and love.

The Planet of Junior Brown (Virginia Hamilton)

Friendship and brotherhood are themes when Buddy takes Junior to an underground hideout.

Rebecca (Daphne DuMaurier)

This Gothic romance becomes more suspenseful as Maxim de Winter's new wife discovers the truth about his past and the death of his first wife.

Siddhartha (Herman Hesse)

Siddhartha searches for meaningful life in the spiritual and material worlds.

Wolf Rider: A Tale of Terror (Avi)

Andy is on his own to seek out a stalker who now seems to be stalking him in this psychological thriller.

The World According to Garp (John Irving)

Satire abounds in this novel of Garp's progression from son to husband to father and writer.

6. CHECKING FOR ACCURACY AND PRECISION

A Brief History of Time: From the Big Bang to Black Holes (Stephen Hawking)

A challenging explanation of the origin of the universe and where it's going by one of the greatest physicists and a remarkable man.

Catcher in the Rye (J. D. Salinger)

Holden Caulfield encounters hypocrisy and phonies among his classmates and in the adult world.

Ender's Game (Orson Scott Card)

Separated from parents at age 6, Ender later discovers he has been chosen to be the military genius who will lead the Earth to victory in its interstellar war.

The Postman (David Brin)

Gordon spreads news and hope as he travels through post-nuclear-holocaust America.

Profiles in Courage (John F. Kennedy)

Despite the vilification or vindication received, each courageous statesman made a decision based on principle.

Rebecca (Daphne DuMaurier)

This Gothic romance becomes more suspenseful as Maxim de Winter's new wife discovers the truth about his past and the death of his first wife.

The Things I Did for Love (Ellen Conford)

Stephanie learns a great deal when she decides to research the concept of love for a psychology project.

To Kill a Mockingbird (Harper Lee)

View of small town Southern life through eyes of Scout, daughter of the defense attorney in a racially charged trial.

7. QUESTIONING AND PROBLEM POSING

Animal Farm (George Orwell)

A witty fable depicting a totalitarian society in which the animals finally rebel.

Beloved (Toni Morrison)

Told in flashbacks, this historical novel deals with slavery and its dehumanizing legacy on individuals and families.

The Clan of the Cave Bear (Jean Auel)

Set in prehistoric times, Ayla learns to survive after being rescued by a Neanderthal clan.

El Dorado (Líoyd Alexander)

Seventeen-year-old Vesper Holly eagerly explores her Central American volcano property only to find her land and the native Indians threatened by Alain de Rochefort.

Ender's Game (Orson Scott Card)

Separated from parents at age 6, Ender later discovers he has been chosen to be the military genius who will lead the Earth to victory in its interstellar war.

Five Smooth Stones (Ann Fairbairn)

David struggles and earns his acceptance to a prestigious northern university. After meeting Sarah, he fights both his feelings for her and the prejudice he faces, eventually becoming a civil rights leader.

Hatchet (Gary Paulsen)

On his way to spending the summer with his Dad, Brian finds strength and courage within himself after he becomes the sole survivor of a plane crash.

Hiroshima (John Hersey)

The dramatic and harrowing experiences of six survivors of the bomb.

Killing Mr. Griffin (Lois Duncan)

The plan is to just scare Mr. Griffin, a tough teacher, but something goes wrong.

Motown and Didi (Walter Dean Myers)

Motown and Didi are drawn to each other, looking for hope in their future.

Mr. and Mrs. Bo Jo Jones (Ann Head)

Despite the pressures of a forced marriage and parental protectiveness, July and Bo Jo struggle to face adulthood.

No Language But a Cry (Richard D'Ambrosio)

A psychoanalyst tells the story of a girl named Laura and her miraculous recovery from physical abuse.

Ordinary People (Judith Guest)

Conrad attempts suicide due to the grief and guilt that followed his brother's drowning as his family seems to disintegrate.

Profiles in Courage (John F. Kennedy)

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The Red Badge of Courage (Stephen Crane)

After Henry eagerly enlists in Union Army, he must face the effects of the horror of war.

Siddhartha (Herman Hesse)

Siddhartha searches for meaningful life in the spiritual and material worlds.

Split Infinity (Piers Anthony)

Stile struggles to survive in two worlds, one of games and one of magic.

To Kill a Mockingbird (Harper Lee)

View of small town Southern life through eyes of Scout, daughter of the defense attorney in a racially charged trial.

Wolf Rider: A Tale of Terror (Avi)

Andy is on his own to seek out a stalker who now seems to be stalking him in this psychological thriller.

The Year of the Gopher (Phyllis Reynolds Naylor)

George defies family tradition by choosing not to go to Harvard.

Z for Zachariah (Robert O'Brien)

One of the few survivors of World War III, Ann is first thrilled, then later threatened, when a stranger enters her valley.

8. DRAWING ON PAST KNOWLEDGE AND APPLYING IT TO NEW SITUATIONS

Animal Farm (George Orwell)

A witty fable depicting a totalitarian society in which the animals finally rebel.

Black Like Me (John Howard Griffin)

Disguised as a black man, Griffin experiences the hatred, injustice, and insults from white society as he travels through the South.

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After Henry eagerly enlists in Union Army, he must face the effects of the horror of war.

9. PRECISION OF LANGUAGE AND THOUGHT

The Autobiography of Malcolm X (Malcolm X)

Malcolm X chronicles his life from childhood to the streets, prison and conversion to Islam.

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A Brief History of Time: From the Big Bang to Black Holes (Stephen Hawking)

A challenging explanation of the origin of the universe and where it's going by one of the greatest physicists and a remarkable man.

Catch-22 (Joseph Heller)

A savage, often raunchy, attack on war in which a World War II flier tries to convince his comrades that he is too insane to continue.

Farewell to Manzanar (Jeanne Wakatsuki Houston)

Fears and frustrations are experienced by a Japanese-American girl and her family when they are placed in a relocation camp after the bombing of Pearl Harbor.

The Hitchhiker's Guide to the Galaxy (Douglas Adams)

Arthur races to save the universe with Ford Prefect, a galaxy tour guide writer.

I Know Why the Caged Bird Sings (Maya Angelou)

Maya recalls her childhood, including being assaulted which had emotionally devastating consequences.

Interview with a Vampire (Anne Rice)

A 200-year old vampire grants an interview and reveals horrifying details of his life.

The World According to Garp (John Irving)

Satire abounds in this novel of Garp's progression from son to husband to father and writer.

10. USING ALL THE SENSES

Anne Frank: The Diary of a Young Girl (Anne Frank)

The changing ideas and feelings of young girl growing up in midst of fear before being discovered by Gestapo.

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The Clan of the Cave Bear (Jean Auel)

Set in prehistoric times. Ayla learns to survive after being rescued by a Neanderthal clan.

A Death in the Family (James Agee)

A grieving family must come to grips with emotions and relationships when the father is killed in an accident.

Dove (Robin Lee Graham)

Alone on a six-year sail in the South Pacific, Robin Graham's adventures include lonely boredom, storms and danger, new friends and love.

Hatchet (Gary Paulsen)

On his way to spending the summer with his Dad, Brian finds strength and courage within himself after he becomes the sole survivor of a plane crash.

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The Metamorphosis (Franz Kafka)

When Gregor awakens one morning to find he has become a giant cockroach, both he and his family have some adjustments to make.

The Mosquito Coast (Paul Theroux)

Charlie records his family's experiences as they follow his father's utopian but irrational dreams in the Honduran wilderness.

No Language But a Cry (Richard D'Ambrosio)

A psychoanalyst tells the story of a girl named Laura and her miraculous recovery from physical abuse.

Studs Lonigan (James Farrell)

A view of the social upheavals in the early 1900's as Studs struggles to make his life match his dreams.

11. INGENUITY, ORIGINALITY, INSIGHTFULNESS: CREATIVITY

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The Moves Make the Man (Bruce Brooks)

Jerome knows the skills needed to survive in basketball and life itself but his friend Bix refuses to learn the fake moves.

The Obnoxious Jerks (Stephen Manes)

Frank is flattered when asked to join the non-conformist group at school.

The Pigman (Paul Zindel)

Mr. Pignati, like John and Lorraine, is lonely and lives on dreams. The trio does wild, zany things to avoid adult responsibilities.

The Planet of Junior Brown (Virginia Hamilton)

Friendship and brotherhood are themes when Buddy takes Junior to an underground hideout.

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A Tale of Two Cities (Charles Dickens)

Classic novel of the French Revolution and a friend's self-sacrifice.

Tisha (Robert Specht)

Anne Hobbes journeys to Alaska in 1927 to teach school in the tiny town of Chicken.

To Kill a Mockingbird (Harper Lee)

View of small town Southern life through eyes of Scout, daughter of the defense attorney in a racially charged trial.

12. WONDERMENT, INQUISITIVENESS, CURIOSITY

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Flowers for Algernon (Daniel Keves)

Charlie's journal reflects his intellectual and social growth following an extraordinary surgery that transforms him from mental duliness to brilliance.

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Evaluation

Plusses: What were some high points of this workshop?				
Wishes: What do you wish would have or should have happened?				
Intrigues: What will you continue wondering about?				

As a result of	this workshop	I'm going to	
AND A TOSUIL OF	uns wontshop		

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