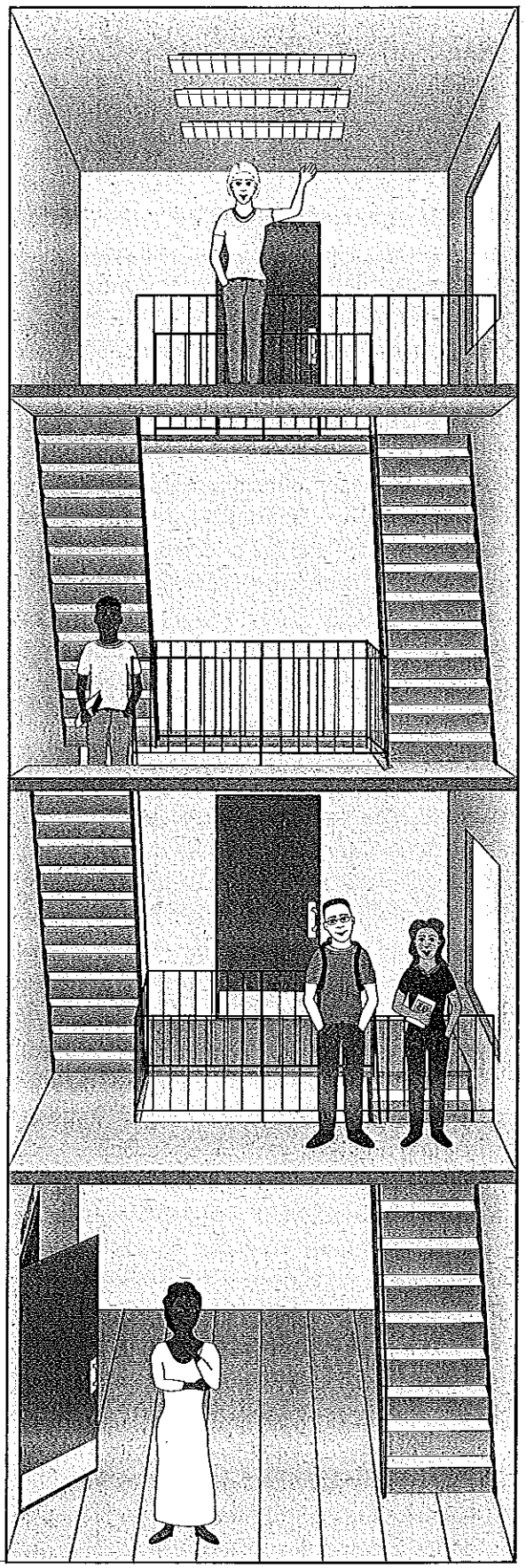
TIERED INSTRUCTION



Tiered instruction provides different levels of learning tasks within the same unit or topic in order to align the curriculum to the different readiness levels of students and to respond to learner differences. It allows students to focus on essential skills yet still be challenged at the different levels on which they are individually capable of working.

The teacher varies the complexities of activities to ensure that all students explore ideas at a level that builds upon what they already know and facilitates their continued learning. In mixed-ability classrooms, tiered assignments maintain the essential understandings and skills required by the curriculum and district or state standards for all learners. Simultaneously, tiered instruction provides pathways at appropriate challenge levels for students to access learning at increased degrees of abstract thinking, complexity, and depth.

Tiered instruction blends assessment and instruction. The teacher completes a pre-instruction assessment to determine what students know and then prescribes content materials and learning experiences at students' different readiness levels. The teacher

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also plans different kinds and degrees of instructional support and structure, depending upon each student's level.

Instruction can be tiered by content (the complexity of what they learn), process (how students learn), and products (how they present their learning). When differentiating through tiered instruction, tier appropriately challenging tasks to require different levels of complexity and abstraction in the content level of information; the products assigned; and the thinking-, communication-, and research-processes required. Ideally, tiered learning tasks engage students slightly beyond what they find easy or comfortable in order to provide genuine challenge and to promote their continued learning (Jensen, 2000; Csikszentmihalyi, 1997). Optimally, a task level is neither too simple so that it leads to boredom nor too difficult so that it results in frustration.

Consider tiered instruction to be like a stairwell. The top story represents learning tasks for advanced readiness students with very high skills and complex understanding, and the bottom story represents learning tasks for students with less readiness and fewer skills. Note that there isn't always a student working on every tier level as students progress through tiers of learning at different paces. Also, within each tier, there simultaneously can be multiple small-group activities presenting different ways to learn. Some floors in the stairwell even have multiple stairways as students access higher learning levels differently. As teachers consider students' readiness levels, it becomes obvious that everyone is not at the same place in their learning and that different tiered tasks are needed to optimize every student's classroom experience.

Research results clearly substantiate that tiered instruction is needed in mixed-ability classrooms to differentiate instruction. Students are more successful in school and find it more satisfying if they are taught in ways that are responsive to their readiness levels (Vygotsky, 1986), interests (Csikszentmihalyi, 1997), and learning profiles (Sternberg et al., 1998). Yet, most teachers incorporate almost no variations in their learning experiences despite the fact that their students exhibit very different readiness levels (Ross, 1993). Content, processes, and products geared to the entire class seldom help struggling learners or challenge advanced students to increase their thinking and expand their knowledge (Westberg et al, 1993). Obviously, instruction must be varied in response to learner differences.

TEACHER: *I can't use tiered instruction. My students don't think it's fair unless everyone does the same thing!*

What's fair? Is it fair that everyone does the same work regardless of their needs? Assigning the same work to all students increases the likelihood that some students will be overwhelmed while others have to expend so little effort to achieve that they infer school is easy! Redirect students' thinking by stating a position, such as the following.

We are different. We look different from one another; we like different things; we learn different ways. One size does not really fit everyone. Until everyone looks the same and wears exactly the same style and size of clothing, I will believe that you have different needs. Together, we will continue to determine different learning tasks that specifically match you and your best ways to learn.

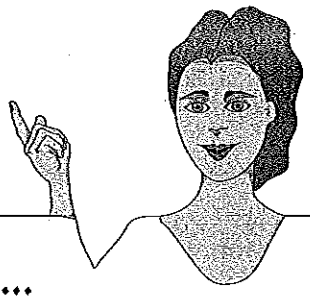
An analogy such as this can serve to explain why learning tasks differ for students. It is a compliment to students that you respect

them and their needs so much that you plan instruction with specific awareness of each individual in the class.

Resentment from students is likely if some assignments are perceived as more fun or disproportionately difficult. Therefore, avoid the ineffective practice of assigning paper-and-pencil tasks to students with less skills as other students work on interesting, hands-on projects. Indeed, there may be instances in which skill sheets are needed by all students. However, it is also true that all students benefit from a variety of processes and products that integrate multiple ways to learn.

Rather than react defensively when students question differences in learning tasks, challenge students to analyze themselves and explain why a particular approach or task is better for them.

STUDENT: *Why can't I do what Patrick is doing?*
TEACHER: *Document to me how that is your best way to learn, and I will reconsider.*



Teacher tip...

"Fair" does not mean doing everything alike with all students. It means respecting each person and endeavoring to help each learn at her or his highest level. To do less is to be less of a teacher.

GUIDELINES FOR TIERED INSTRUCTION

1. **Differentiate by content, process, and/or product.**
   Content is the complexity of *what* students are to know; it is directly influenced by the level of materials they access to learn. Process is *how* students use key skills and relate ideas as they make sense of the content; it includes thinking skills, communication skills, research skills, and the ways students process information. Product is the *result* of content and process; it is what students create to demonstrate and extend what they learned. (A product may be a concrete thing, an action, or a verbal conclusion or summary of understanding.)

   Gifted students require differentiation by content and process to escalate learning in response to their readiness. Solely differentiating by product is less likely to result in their continued learning.

2. **Plan the number of levels most appropriate for instruction.**
   There is not an absolute number of levels required for an appropriate application of tiered instruction.
   - Different quantities of tiers are needed for different concepts and skills in relation to different learners' needs. Sometimes, two tiers are sufficient; at other times, three to five or more work better to match the wide range of learners.
   - The quantity of needed tiers varies in different curricula areas.
   - To adjust the working environment, teachers vary the number of tiers in response to their preferred number of students working on one learning task. Changing the number of tiers is one way to vitalize flexible groupings and ensure that students are not always in the same group.

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3. **Begin tiered instruction at the readiness level of the students.**
   The complexity of a tiered assignment is relative because it is determined by the specific needs of the learners in a class, and because a learners' readiness levels vary in different curricula areas. In classes with below grade-level learners, the lowest tier would respond to those students. In classes in which all students are at or above grade level, the lowest tier would respond to grade-level or even above grade-level readiness (Kingore, 2002a).

4. **Ensure that the tiers and the groups working within each tier are flexible.**
   The word *tiered* is not a euphemism for low-middle-high groups. The low-middle-high groups of the past were stagnant groups that labeled who could learn and who was not learning. Tiered assignments, however, denote all children as able to learn the same essential skills in different ways. The tiers and the groups working within the tier are flexible. The make-up of students working at each tier varies with the content, assignment, and quantity of tiers.

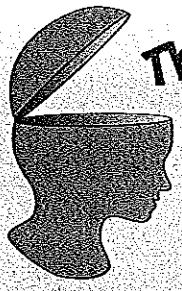
5. **Vary the time required to complete tiered assignments.**
   Some tiers incorporate short-term tasks completed in less than a single setting. Other tiered tasks many involve several class sessions or evolve over more than a week.

6. **Promote high-level thinking in each tier.**
   The background and readiness levels of students should not limit the range of thinking opportunities provided through tiered assignments. Avoid always allocating simple thinking tasks for students with the fewest skills, mid-level thinking tasks for students in the middle range of readiness, and high-level challenges for learners at advanced readiness levels. There are occasions when knowledge, comprehension, and application level tasks (at students' readiness level) are needed by all students. Conversely, all students need opportunities to analyze, synthesize, and evaluate information.

7. **Promote continual development.**
   Plan instruction that stretches students slightly beyond their comfort zones. As Tomlinson cautions, "Only when students work at appropriate challenge levels do they develop the essential habits of persistence, curiosity, and willingness to take intellectual risks" (2001, 5).

8. **Provide teacher support at every tier.**
   Every tier requires teacher modeling and support for the students working at that tier. All learners benefit from a teacher's instruction, interaction, guidance, and feedback--even gifted children whom some educators perceive as always *making it on their own.*

Figure 8.1 delineates a sequence for developing tiered tasks. Consider these steps in the process.

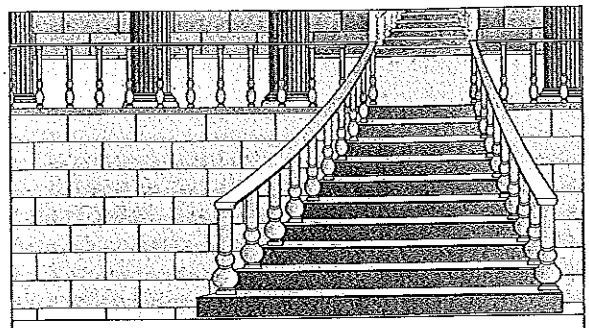


Think about it...

Reflect upon the level of thinking you expect from your students. All students can and should engage in high-level thinking processes as often as possible. One difference is that gifted students engage in high-level thinking most of the time while other students analyze and synthesize only as often as their background information enables them to do so. Furthermore, the analysis by gifted students may be more abstract and complex.

Figure 8.1

STEPS IN DEVELOPING TIERED ASSIGNMENTS



1. Identify what all students must learn. Select the essential concepts, skills, or generalizations to address. Determine which learning standards to integrate.
2. Reflect upon the assessments of students' readiness levels, learning profiles, and interests.
3. Determine the priorities of the lesson--the ways students will interact and the selected products of learning.
4. Begin by creating an activity that challenges most students, is interesting, and promotes understanding of key concepts or skills.
5. Vary that activity appropriately for students with fewer skills.
6. Create additional activities that are more complex, require more abstract thinking, are interesting, and use advanced resources and technology. Determine the complexity of each activity to ensure tasks that will challenge above-grade-level students and gifted learners.
7. Ensure that each student participates in a variation of the activity that corresponds to that student's needs and readiness.

APPLICATIONS OF TIERED INSTRUCTION

In this section, examples of learning experiences are provided that are tiered in content, process, and/or product according to students' readiness. The following three classroom examples and the tiering applications that incorporate graphics require different kinds and degrees of instructional support and structure. While some students need direct teacher modeling and support during instruction, others are ready for teacher facilitation and more open-ended instruction that encourages greater student independence.

Not all levels of these tiered assignments would be used in every class. When implementing a tiered lesson, for example, some classes might have students working only on the first three tiers of the lesson while other classes might have students working on only the last two tiers of that same lesson. The intent is not to divide students into leveled groups but to accommodate the unique diversity of learners.

Think about it...

These classroom examples remind us that:

- The first tier does not represent the same skill or concept level in every lesson.
- The tiers begin at varying levels to denote that students' readiness is not static.
- Each student's readiness level varies with different content and in response to different classroom opportunities.
- Tiering can provide different learning experiences at varied levels of complexity or similar experiences that vary in the degree of complexity within each application of a task.

Kingore, B. (2004). *Differentiation: Simplified, Realistic, and Effective.* Austin: Professional Associates Publishing.

TIERING A TOPIC: SCIENCE OR SOCIAL STUDIES

After assessing the wide-range of readiness levels among her middle school science and social studies students, Ms. Manning knew she needed to tier instruction to provide an appropriate level of challenge for each student. She strongly felt that some learning experiences should be shared by the whole class and that all of her students benefitted from an audience for their work. Hence, she incorporated some whole class experiences throughout the study and provided ongoing opportunities for students to interact and share their ideas and products. She selected open-ended activities for most whole class experiences so students could approach the tasks in various ways with differing levels of complexity.

All of her students work with her in direct-teaching lessons that develop background information and skills as they investigate a topic. At times, this direct instruction involves the whole class and, at other times, flexible small groups that change depending upon the objective. As she teaches small groups, she varies the materials by using the class text and grade-level materials as well as technology and additional print materials that expand grade-level skills and information while providing the appropriate levels of challenge.

When Ms. Manning is engaged in direct instruction with one group, other students are involved in their reading and product development. Sometimes she simultaneously has all students working in small groups, reading, discussing, processing, and producing so she can rotate among the students and facilitate their progress. She notes that this is an important assessment time for her as she acquires immediate feedback on successes and needs. Many of her reteaching decisions are made based upon this assessment.

Ongoing Whole Class Activities

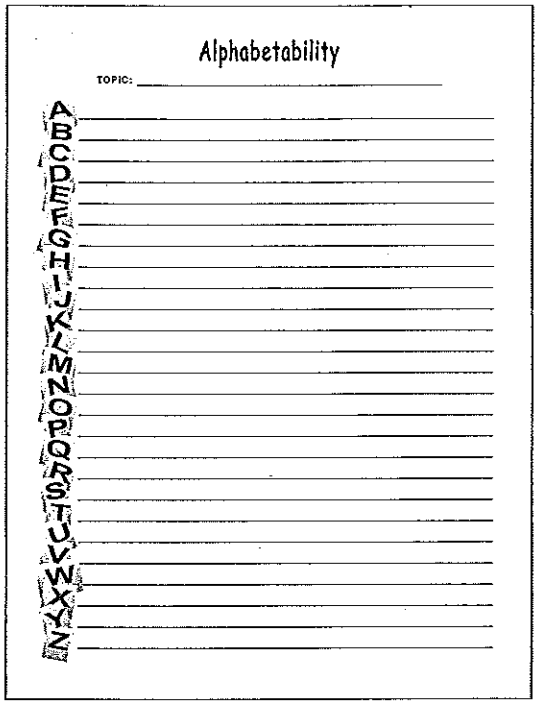
- Using the class online message board, students periodically post observations, reactions, and questions about their reading. Students are also encouraged to post responses to others' messages. (If an online forum is not available, use a cork board or bulletin board in the classroom.)
- Questions that require high-level thinking are used to prompt students' awareness of key ideas and the vocabulary specific to the topic. Other analytical prompts encourage students' constructions of relationships among this topic and other topics of study. The students' responses are shared in oral discussions and posted for others' reactions.

  - *Which phrases or sentences within the text are particularly interesting and significant to this topic?*
  - *Which words do you believe to be most significant to this topic? Explain your thinking so others can understand.*
  - *What direct and personal analogies can you create that respond to the topic?*
    a. *(Item or person from the topic) is like (item or person from another topic) because _____.*
    b. *I am like (item/event/person related to the topic) because _____.*
    c. *(Item or person from the topic) relates to our theme of change when _____.*

Tiered Activities in Small Groups-- Simple to More Complex

- After Ms. Manning models and provides parameters for the task, some students work in pairs or trios to revisit the class text and other grade-level materials. They

complete alphabetical sets of compound and complex sentences that specify significant information related to the topic for each letter of the alphabet. Later, their results are combined and organized into a poster or chart to share with the rest of the class and display outside the classroom.



- With teacher direction and facilitation, some students review multiple resources that expand grade-level information. They then organize the topic into subtopics.

- Some of those students then work in different pairs or trios exploring their selected subtopic to prepare one part of a cooperative power point™ presentation about the topic to share with the class.

- Other students form a small group to organize their information into a test over the topic that incorporates the key concepts of each subtopic.

- With the teacher facilitating, some students identify essential questions and issues that the students are interested in exploring. Students then conduct research independently or in small interest groups, using multiple grade-level and above grade-level materials (both print and technology), to investigate their chosen question or issue. Each student or group plans a method for sharing that information and determines the most appropriate audience for their presentation.

Culminating Whole Class Activities

- Products from the small groups' or individual's investigations are shared with the class.

- One group of students presents the test they prepared. The rest of the class participates in a discussion rating the complexity of each test item and reaching consensus regarding the best possible answers.

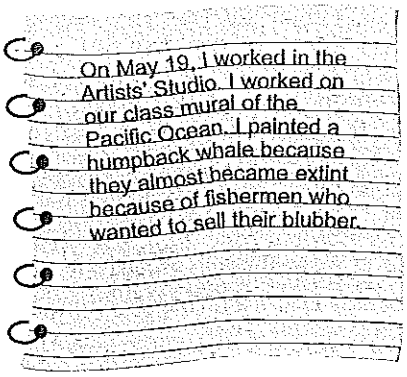
TIERING A CENTER: A WATER LIFE, SCIENCE DISCOVERY CENTER

Mr. Vidal teaches primary students and prefers to use centers to challenge his students to apply science concepts and scientific behaviors. He creates tiered tasks in centers to accommodate each learner's readiness level. The hands-on, visual nature of his choices matches his younger students' learning needs.

This primary center contains an aquarium, tiered learning tasks, and several books with information and illustrations about aquarium life; magnifying glasses are available nearby. The learning tasks are planned to use skills of observation, compare and contrast, inference, and writing words and sentences. Every child has opportunities over time to participate in the center one or more times. Mr. Vidal sometimes encourages children to choose which task to do. At other

times, he assigns children to complete a certain task based upon his assessment of their readiness. There is a cork board beside the aquarium where students post their completed work for others to read. One chart on the board is a list of attributes of the aquarium life that children collaboratively add to as they observe and read about additional attributes.

As children complete a task, they write a response in their centers log book.



Tiered Activities in Small Groups-- Simple to More Complex

- Children use Figure 8.2 to record their observations. Children draw and are encouraged to write some words or sentences about what they hear, see, smell, and touch as they observe the aquarium.

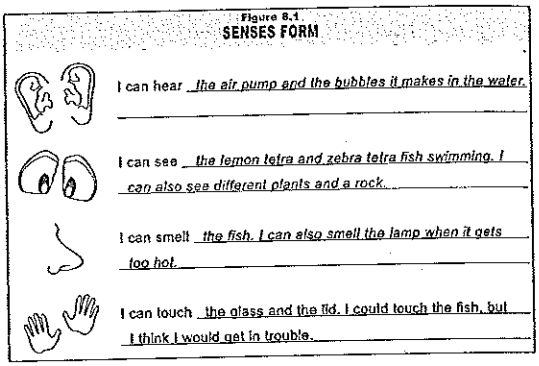


Figure 8.1
SENSES FORM

I can hear *the air pump and the bubbles it makes in the water.*

I can see *the lemon tetra and zebra tetra fish swimming. I can also see different plants and a rock.*

I can smell *the fish. I can also smell the lamp when it gets too hot.*

I can touch *the glass and the fid. I could touch the fish, but I think I would get in trouble.*

- Students use Figure 8.3 to write descriptive, contrasting sentences about their

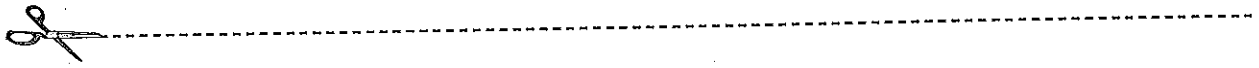
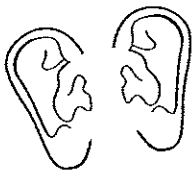


Figure 8.2:
SENSES FORM



I can hear _____

_____

I can see _____

_____

I can smell _____

_____

I can touch _____

_____

Kingore, B. (2004). *Differentiation: Simplified, Realistic, and Effective.* Austin: Professional Associates Publishing.

observations as they examine the environment of the aquarium.

- Children use Figure 8.3 to record their observations. However, children write their observations from the perspective of the fish: *What might the fish be seeing? Tasting? Hearing? Touching?* Children are also challenged to research if fish have the same senses as people.

- Children use the resource books provided to research, write, and illustrate one or more sentences comparing what they read about one of the living forms in the aquarium with what they observed.

- Children fold a large paper in half and label the top of one side *Observations* and the other side *Inferences.* Under the appropriate category, they then write sentences explaining their observations and sentences about their inferences of life in the aquarium.

TIERING MATHEMATICS INSTRUCTION

Mrs. Bryant assessed a wide readiness span in her upper-elementary math class with learners representing more than a year below grade level to almost two years above grade expectations. Her district requires her to document that grade-level state standards are incorporated into her curriculum. So, she worked to tier her math instruction and involve students in skills and concepts at appropriate levels of challenge.

All of the students work with math reasoning, computation, application, and practice but at varying degrees of difficulty. Mrs. Bryant

Figure 8.3: SENSES FORM

I can hear _____

_____

But I can't hear _____

I can see _____

_____

But I can't see _____

I can smell _____

_____

But I can't smell _____

I can touch _____

_____

But I can't touch _____

Kingore, B. (2004). *Differentiation: Simplified, Realistic, and Effective.* Austin: Professional Associates Publishing.

initially introduces concepts, skills, and materials by teaching lessons to the whole class. To develop students' understanding, her direct instruction then focuses on flexible small groups that pursue skills and concepts at different paces and levels in response to their assessed readiness levels. She provides multiple applications of guided practice for some students to ensure success and reach mastery. With other students, a smaller quantity of guided practice applications are provided as understanding is accomplished with fewer examples

All students work with her in small groups sometimes, but the duration of each lesson varies with students' needs. At times students are in similar-readiness groups and at other times they work in mixed-readiness groups or interest groups. When she is directing a small-group lesson, the other students complete independent practice and the tiered activities provided in her classroom.

Mrs. Bryant uses whole class instruction for a review. She does not, however, use whole class math contests or competitions because the range in her class is so varied that the same students usually won and the same students usually lost. She found it more effective to use games and competitions that students self-select to do in pairs or small groups, such as those in the projects area.

Earlier in the year, when students' assessments documented that some students had mastered grade-level and above grade-level skills and concepts in the math area being studied, she used some math enrichment activities in her textbook. She observed, however, that if the enrichment tasks were predominately variations of the same skills and concepts, those experiences may not command students' interests nor increase students' achievements or level of mathematical understanding. More frequently now, she groups advanced students for direct math instruction at their appropriate challenge level and engages them in tiered activities when working with the whole class.

In addition to her curriculum skill sheets for computation, she also incorporates open-ended activities for many applications and practice experiences to encourage students to learn how to organize data as well as compute a solution. She encourages students to approach the tasks in various ways with differing levels of complexity.

Tiered Activities--
Simple to More Complex Tasks Within Each Activity

♦ Demonstrations

Individually or in pairs, students select math problems in the text to prepare demonstrations that explain the problem to others.

♦ Four Ways

Individually or in pairs, students select a math problem in the text and then write and/or illustrate four ways to solve the problem.

♦ Creating Math Story Problems

Individually or in pairs, students write, illustrate, and complete their own examples of math story problems using the skills and concepts currently being studied.

♦ Math Process Letters

Students write a letter to a real or fictitious person of their choice to explain how to work a math problem that represents the skills and concepts currently being studied. Writing a clear and effective process explanation challenges students to demonstrate their mastery of a process without additional problems to compute.

♦ Computer Applications

According to assessed needs, students use computer programs for grade-level math applications or to develop advanced math skills and concepts.

♦ Error Analysis Cards

All students complete error analysis cards one or more times a week. Each card that Ms. Bryant prepares has a math problem containing errors which correspond to one or more students' practice needs. The cards can be used multiple times by different students assessed with that specific need.

The cards vary in complexity, up through prealgebra. Ms. Bryant assigns students' which cards to complete. Students respond to their assigned cards by using Figure 8.4 on which they write their name, the number of the card they review, the problem, and a few descriptive sentences that answer the following questions: *What is incorrect in this problem?* and *How can the error be corrected?*

Figure 8.4:
ERROR ANALYSIS RESPONSE

NAME *Samantha* ERROR ANALYSIS CARD #: *13*

Copy the problem here.

$x + 2 - 3x + 4 = 0$

$-4x = 6$

$x = \frac{-6}{4}$

$x = -1\frac{1}{2}$

What is incorrect in this problem?

Negative numbers are not applied correctly

How can the error be corrected?

First, when two and four are added, they equal six on the left side of the equation and negative six on the right. Then, x - 3x does not equal -4x. It equals -2x.

The correct answer is 3.

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♦ Projects Area

All students participate in work at the projects area at least once a week. (This area is actually a small table with shelves of materi-

Figure 8.4:
ERROR ANALYSIS RESPONSE

NAME _____ ERROR ANALYSIS CARD #: _____

Copy the problem here.	What is incorrect in this problem? How can the error be corrected?

Kingore, B. (2004). *Differentiation: Simplified, Realistic, and Effective.* Austin: Professional Associates Publishing.

als, supplies, and manipulatives nearby. Many stacks on the shelves have sticky notes with students' names on them to specify work in progress.) These activities are long-term, interest-based projects worked on by individuals, pairs, or trios of students. All of the projects evolve from students' interests and involve applications of math in the real world. In the current projects, students are:

- Developing a collage-illustrated math glossary using examples of math terminology and concepts cut out from newspapers, magazines, and copies of sheet music.
- Using large department store catalogs to document their calculations of how they might spend a $1,000 shopping spree in that store. Tax must also be calculated and figured within the total amount.
- Taking digital camera photographs, collecting copies of published photographs, and organizing examples of architectural elements in those photographs to explain math applications in architecture.
- Creating a *Sports Illustrated Book of Math* in which students explore and explain how math is used in different sports.
- Playing board games that are based upon math concepts.
- Using blank game boards and index cards to create new games that use math in a variety of applications.

TIERING APPLICATIONS THAT INCORPORATE GRAPHICS

Since many students are visual learners, graphics provide another avenue to use when tiering instruction. The difficulty of these activities that incorporate graphics varies with the complexity of the graphic and the requirements of the task as some tasks using graphics may require higher-levels of skills and materials. Graphic organizers also have the advantage of requiring students to determine relationships instead of simply acquiring knowledge.

Graphic organizers are favored by many teachers and students. Popular graphics such as concept maps, charts, time lines, graphs, and Venn diagrams can be used to tier the complexity of students' responses.* The following tiered tasks use a Thinking Triangle graphic as one example of tiering activities with graphic organizers.

Thinking Triangle

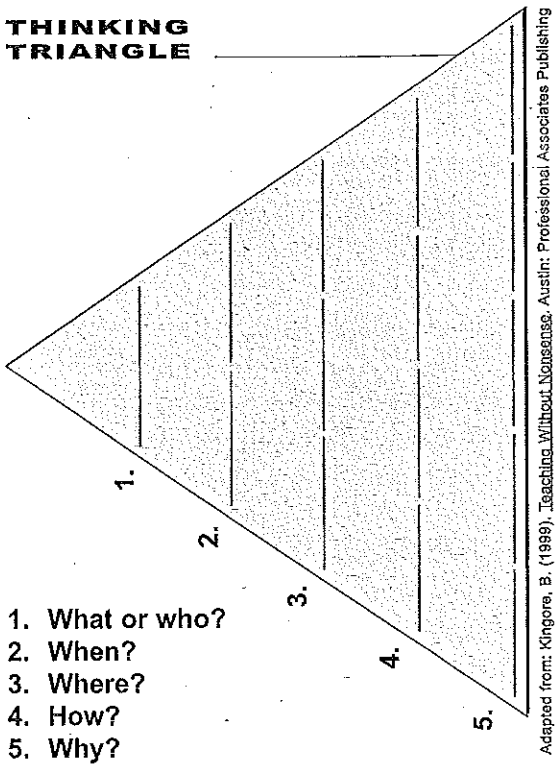
The Thinking Triangle is a graphic technique for succinctly relating and organizing information. The first line has one word, the second line has two, the third line three, and so on to create a triangle shape. It invites more thinking and vocabulary explorations as students consider ways to express their ideas in the appropriate number of words.

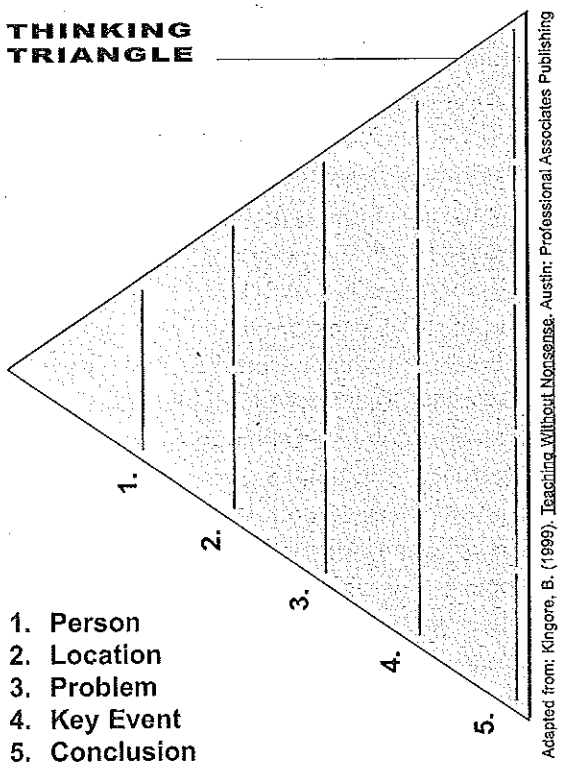
Each tiered task using Thinking Triangles is preceded by direct-instruction with the teacher developing students' content-related concepts and skills as the process of using the graphic is modeled. When based upon materials at different reading and concept levels, these examples involve students in applications of reading skills, research skills, and thinking skills on multiple levels. The examples also vary in complexity by progressing from simple to more complex forms of the graphic and then building upon those experiences to challenge students' development of their own graphic forms to synthesize their learning.

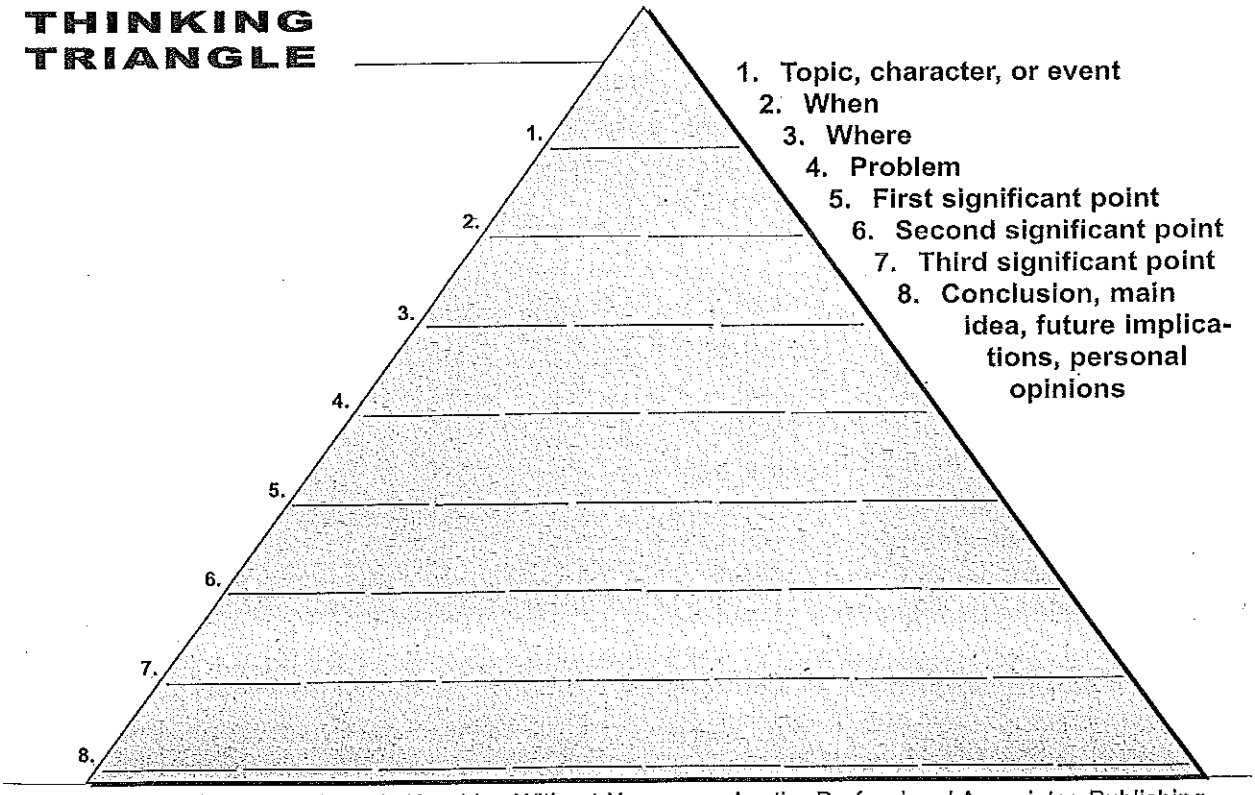
Figure 8.5 Illustrates three variations of a Thinking Triangle. The variations progress from simple to more complex in structure and content.

*Additional graphic organizers are found in Chapter 7: Eliciting Advanced Achievement

Figure 8.5*







*Adapted from: Kingore, B. (1999). *Teaching Without Nonsense*. Austin: Professional Associates Publishing.

Kingore, B. (2004). *Differentiation: Simplified, Realistic, and Effective*. Austin: Professional Associates Publishing.

Tiered Activities in Small Groups-- Simple to More Complex

Tier I

- **Reading.** After completing a story in guided reading, children work in pairs or trios to retell the story by completing a Thinking Triangle form with investigative words: *what or who, when, where, how,* and *why.* Later, they come together as a class to share and compare their ideas.
- **Topic.** Students work in small groups to complete a Thinking Triangle form as they read about a social studies event or historical figure in their class text. Later, the different groups come together to share and compare responses.
- **Research.** Students research a topic and use the Thinking Triangle to organize their information before orally sharing what they learned.

Tier II

- **Reading.** Children vary the form to use *character, setting, problem, key event,* and *main idea* as the line descriptors. They individually use that form to retell a second story they read independently that develops the theme of conflict. Later, students share their retellings with other students and identify common elements of conflict across the stories.
- **Topic.** Working in small groups, students vary the form to use *person, location, problem, key event,* and *conclusion* as the line descriptors when they read about a social studies event or historical figure in their class text. Later, the different groups discuss and compare responses.
- **Research.** Students research a topic and use the five-line or more complex Thinking Triangle form as a pre-generator to organize the information they learn. Then, they write a simple research report to share with the class and post in the class research center. Their completed Thinking Triangle is used as the cover for their report. Encourage depth and substantiation of information by ensuring that students list the resources they use in their study.

Tier III

- **Reading.** Individually, students use the more complex variation of a Thinking Triangle form that requires an eight-line response to analyze a novel or poem they read independently. Students are encouraged to integrate their complex and abstract thinking by creating an icon or symbol for each row of the triangle. Later, students share, compare/contrast, and discuss as a class the varied interpretations in their products.
- **Topic.** Using resources other than their social studies text, students work in pairs using the eight-line version of the Thinking Triangle to organize information about a president or other historical figure. Encourage students to integrate complex thinking by creating an icon or symbol for each row of the triangle. Later, students come together as a group to share, compare, and discuss their information.
- **Research.** Individually or in pairs, students use the eight-line version of the Thinking Triangle to synthesize and organize information relating to a current area of study. Encourage students to use multiple, above grade-level sources as they research a topic that is assigned or self-selected. Encourage complex thinking by challenging students to create an icon or symbol for each row of the triangle. Conduct a research forum so students can share their results.

Tier IV

- Students create their own version of a Thinking Triangle to use with their class content. They analyze the content to determine the most significant descriptors to use and also vary the number of lines needed to best convey in-depth information.

Think about it...

Determine the most appropriate tier level for each of the following four learning tasks in reading. Label each task tier one through four as you determine the continuum from simplest to most complex. Notice that all the tiers invite high-level thinking with tasks that address character analysis and cause-and-effect relationships.

___ A. Students work in trios to create a character map for the main character in each of the two novels they read. With the teacher, the groups then combine the information on their maps to compare the two characters on a Venn diagram. Finally, they identify similar causes in both stories that influenced each character's actions.

___ B. The teacher presents a list of five causes in the book that affected the main character. Working with the teacher, students determine and record the effect of each.

	Cause: Why?	*Effect: What happened?*
1.		
2.		

___ C. Working with the teacher, students forecast a list of events that might occur if the main characters from two different novels appeared in a sequel together. Students must continually review the stories to find specific information regarding character traits and events to substantiate their forecasts.

___ D. Students work with the teacher and use a Venn diagram to compare the main character at the beginning and end of the book. Then, they brainstorm, list together, and sequence the events that caused the character to change.

Tier 1: B Tier 2: D Tier 3: A Tier 4: C

Reflect upon your problem-solving process as you determined the levels on the *Think about it* task. What are some of the differences among the levels? For example, which aspects of tier one made it more simple than tier three? Differences, such as the ones your identify, are the factors that influence the difficulty of tiered tasks and affect the development of tier levels. Compare your analysis with the factors which influence complexity in Figure 8.6 produced by other teachers.

Tiered instruction evolves from teachers' decisions regarding how to modulate tasks around the combinations of factors they select that influence complexity. All of the factors relate to the readiness of the learner. Some of the factors are instructional options that are more easily modified by the teacher, such as the degree of assistance a teacher provides, the complexity of the resources used, and the concrete or abstract nature of the process and product. Some factors are non-negotiable and require teachers to understand and accommodate within every tier, such as the background knowledge and skills the student brings to the task.

Identifying complexity factors helps teachers to efficiently proceed with the development of tiered activities. When you assess that students require variation of the concepts and skills designated in a lesson, reflect upon these factors to determine which to employ in that lesson.

Kingore, B. (2004). *Differentiation: Simplified, Realistic, and Effective.* Austin: Professional Associates Publishing.

Figure 8.6:

FACTORS THAT INFLUENCE THE COMPLEXITY OF TIERED ACTIVITIES

Degree of assistance and support

- The teacher directs the learning experience.
- The teacher facilitates the students' process in the learning experience.
- Students' are autonomous in their inquiry.

Degree of structure

- Clearly defined parameters for the task are prescribed.
- Open-ended criteria and parameters are posed for the task.

Required background knowledge and skills

- Minimal, basic information and understanding is required.
- Grade-level information and understanding is required.
- More extensive information and understanding is required, including research skills and skills of independent inquiry.

Concrete or more abstract

- The process and product are concrete.
- The process and product involve abstract thinking.

Quantity of resources

- A single resource is used.
- Multiple resources are employed.

Complexity of resources

- Grade-level resources are provided.
- Resources require above grade-level reading ability.
- The resources are concept dense.
- Sophisticated technology applications are required.

Complexity of process

- The required degree of thinking varies.
  - Simpler thinking processes are required.
  - Complex thinking processes are required.
- The time required to complete the task varies.
  - The task is short-term and often completed in one setting or one day.
  - The task is long-term, involving multiple steps and an extended period of time to complete.
- The research skills required to complete the task vary.
  - Simple research skills and beginning-level independent work skills are required.
  - More sophisticated research skills and independent work behaviors are required.

Complexity of product

- The parameters of the product vary.
  - The product parameters are structured and clearly defined.
  - The product parameters are more open-ended and unspecified.
- The integration of skills and concepts varies in sophistication.
  - The product integrates simple skills and concepts.
  - The product integrates more advanced skills and concepts.

PRODUCT OPTIONS AND TIERING

Providing product options facilitates tiering as teachers can more readily match products to students' learning strengths and needs. Figures 8.8 and 8.9 at the end of this chapter illustrate two formats for organizing product options--the Science Task Board presenting nine product options or a Math Task Board using twenty-five options. The objective should be to focus on a variety of product options rather than to suggest that students have to select the products in order or complete multiple tasks. Requiring students to complete more products does not necessarily result in higher or more effective responses. Rather, use the two formats to promote options for students that best match their learning profiles and interests as they demonstrate the depth of their learning.

To facilitate tiering, the teacher numbers the product options on a task board and analyzes the complexity of each task.

- Write a list of the more complex tasks to refer to, suggest, or assign when a student needs that level of challenge.
- Numbering the tasks also enables the teacher to focus on the product options that complement the task. *Students, you may elect to complete tasks 1, 4, or 14 on the Math Task Board to demonstrate your level of understanding of this process.*

When preparing nine or twenty-five product options seems overwhelming, simplify the process. Providing as few as two to four product options still begins to honor learners' profiles and readiness levels. Post product options on a grid or pocket chart with two to four responses. Product options allow students to choose the products they complete to document their learning. When the products options are weighted for depth and complexity, the assignments align with tiering objectives.

To allow diversity in product responses, prepare a list of products appropriate to the age, readiness levels, learning profiles, and strengths of the students. Review the curriculum and teaching objectives to determine products with potential for rich instructional applications. Focus on what students should learn and demonstrate as a result of this product experience. To avoid losing a good instructional possibility when brainstorming ideas alone or with others, write quick notes of any application ideas that emerge.

CREATING PRODUCT OPTION GRIDS OR POCKET CHARTS

1. Develop a list of products appropriate to your students, content, and instructional objectives.
2. Write quick notes of content application ideas.
3. Skim the list and select which options to develop and use.
4. Organize the options for depth and complexity.

When preparing a lesson, skim the list of products and determine the two to four options from which students may select. The arrangement of products on the grid tiers the products for depth and complexity. For example, one time the odd numbered products might be more simple than the even numbered choices. Another time, the odd numbered options or the left-to-right diagonal of products might be the more complex. This flexible arrangement makes the complexity levels of products more subtle and respects learner differences with less labeling. It also facilitates assigning a more challenging product to an underachieving student needing guidance. For example, when the odd numbers are the more complex, a teacher might

tell a less motivated student: *Today, I want you to select either product number 1 or 3.* In this way, the student still has some choice but the teacher increased the likelihood of a more complex student response.

A group of primary teachers modeled this process of creating product options as they used their interdisciplinary unit on space travel to integrate their objectives of vocabulary development; research skills; graphing skills; and written, oral, and graphic communication skills. They brainstormed the list of possible products included in Figure 8.7 and then discussed which products represented the best student outcomes for the objectives of the unit.

Deciding that all students will complete a graphing activity during this unit, the teachers analyze the graphing options for depth and complexity. They determine that graphing classmates' favorites is simplest because of the process and skills, graphing distances more complex because it involves more reading for information, and graphing the time of travel the most difficult as students have to gather data and then complete calculations because the information is not necessarily listed as time travel between locations. They then incorporate those three tasks as tiered learning experiences in their unit.

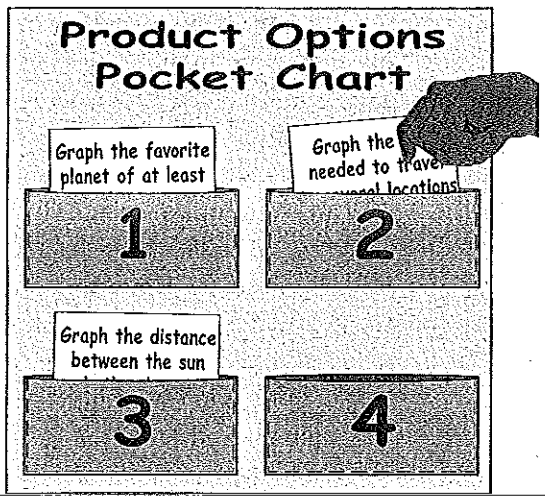


Figure 8.7:
PRODUCTS FOR A SPACE UNIT

- Alphabet chart of space words and items
- Picture dictionary
- Word web
  1. Used as a group preassessment of content background
  2. Used as an individual culminating task to evaluate vocabulary related to the topic
- Rebus story about traveling to specific planets using a page of space items or pictures to cut, paste, and incorporate into a story
- Non-fiction rebus story relating information from research about a space topic
- Pop-up book about one planet with an illustration and two or three facts
- Pop-up book relating information from research about a space topic
- Graph of the favorite planet of 10 classmates
- Graph of the time needed to travel to several locations in space from the earth
- Graph of the distances between the sun and other locations in space

Kingore, B. (2004). *Differentiation: Simplified, Realistic, and Effective.* Austin: Professional Associates Publishing.

Figure 8.8:

SCIENCE TASK BOARD

1. CRITIQUE-- **Critique how the scientific method was applied during a specific experiment conducted in class.**	**2. ACROSTIC--** **Using a key term from the topic of study, write sentences related to the topic that begins with each letter of the key term.**	**3. FLOW CHART--** **Use a flow chart to illustrate and explain a cyclical process in nature.**
4. DEBATE-- **Debate the issues of using animals for research studies.**	**5. CHORAL READING/ READERS THEATER--** **Use the format of Joyful Noise: Poems for Two Voices* to write, organize, and compare significant facts about specific animals, plants, or two biomes.**	**6. COLLECTION COLLAGE--** **Use a digital camera to complete a collage of photographs of scientific principles found at home.**
7. VENN DIAGRAM-- **Overlap three circles to create a three-way Venn that compares the similarities and differences of the forms of matter.**	**8. GRAPH--** **Graph the weather in your area for one month. Compare it to a Farmer's Almanac from 100 years earlier. Record three observations or conclusions.**	**9. DEMONSTRATION--** **Demonstrate how to use a piece of scientific equipment.**

*Fleischman, P. (1988). Joyful Noise: Poems for Two Voices. New York: Harper & Row.

Figure 8.9:

MATH TASK BOARD

TEST (ORIGINAL)--Instead of taking a test, write the test items for the math process or concept of study.	REVERSE CROSS-WORD PUZZLE--Provide the completed puzzle grid of numbers. Others write the formulas or math facts that resulted in those numbers.	COLLAGE--Organize a collage showing fractions in daily life.	ACROSTIC--Using a concept or topic word, such as *factorial*, write a sentence beginning with each letter that is significantly related to the topic.	TANGRAMS--Use tangrams to create the ten digits and all the letters of the alphabet.
VENN DIAGRAM--Overlap four circles to create a four-way Venn that compares the similarities and differences of math operations.	BIO POEM--Create a bio poem for *integer*, or another key math term.	FLOW CHART--Draw and label a flow chart that illustrates how to apply a specific math strategy or geometric proof.	DEMONSTRATION--Use manipulatives to demonstrate division to a younger student.	CONTENT PUZZLES--Write key math facts on a shape. Cut it into puzzle pieces for others to put back together by correctly matching the problem and the solution.
BULLETIN BOARD--Complete a bulletin board to demonstrate mathematical applications, such as: *Ways to Make 78.*	CHILDREN'S STORY (ILLUSTRATED)--Create a story to explain a math concept. As examples, read books by C. Neuschwander about Sir Cumference[1].	STUDENT'S CHOICE	LETTER (MATH PROCESS)--Complete one math problem. Then, write a letter to someone explaining step-by-step how you completed that problem.	ERROR ANALYSIS--Analyze a problem that is flawed. Write what is wrong and how to correct it.
RATIO RESEARCH--Read *If You Hopped Like a Frog*[2]. Research other attributes of animals and humans and express your findings as intriguing ratios.	GAME--Create a stock market game or math fact rodeo.	METAPHOR/SIMILE--Express a mathematical concept through a metaphor or simile, such as: *Addition is like compound words, and subtraction is like contractions.*	SCAVENGER HUNT--Provide a list of math terms to find examples of in the real world.	RIDDLE--Develop simple or more complex riddles, such as: *I am a prime number larger than 13 and smaller than the square root of 324.*
QUESTIONNAIRE--Conduct a questionnaire asking adults how math is needed in their jobs, and graph the results.	NEWSPAPER ADVERTISEMENTS--Use the ads to buy a balanced meal for four people that totals less that $20.00. List your items, quantity, and total, including tax.	COMPUTER GAME--Create a computer game that uses algebra.	WRITTEN REPORT--Write a report with diagrams illustrating how geometry applies to baseball or some other sport.	TEN WAYS--Determine at least 10 different math applications required when designing or manufacturing a car.

[1]Neuschwander, Cindy. (2001). *Sir Cumference and the Great Knight of Angleland.* (1999). *Sir Cumference and the Dragon of Pi.* (1997). *Sir Cumference and the First Round Table.* Watertown, MA: Charlesbridge.

[2]Schwartz, D. (1999). *If You Hopped Like a Frog.* New York: Scholastic.