READING STRATEGIES
FOR
ADVANCED PRIMARY READERS

Texas Reading Initiative Task Force for the
Education of Primary Gifted Children

Edited by
Bertie Kingore

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- Ann Wink, Director of Elementary Gifted Education, Advanced Academic Services, Texas Education Agency

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The websites referenced in this text do not necessarily reflect the positions and philosophies of the Texas Education Agency.

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While the Texas Student Success Initiative was created to ensure that *all* Texas children are able to read on or above grade level by the end of third grade, many Texas primary-aged children already read at advanced levels. These children should also have the right to progress academically.

The Texas Reading Initiative Task Force for the Education of Primary Gifted Children has prepared this publication to assist the classroom teacher in identifying children who may be advanced learners and in preparing reading activities appropriate to their learning level. Following the Texas tradition of supporting reading instruction based on scientific research, this work is based on empirical evidence surrounding these children's specific learning needs.

Reading Strategies for Advanced Primary Readers, produced by the Texas Reading Initiative Task Force for the Education of Primary Gifted Children, expands teacher knowledge about the characteristics and needs of advanced and gifted readers. In addition, it explains how to differentiate reading instruction for these children and provides the classroom teacher with helpful strategies and ideas.

In essence, this publication defines yet another dimension of the Texas Student Success Initiative and expands its goal of providing all Texas children with the tools they need to have successful academic careers.

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The Texas Student Success Initiative is committed to assuring that every child reads at least on grade level by the third grade. It is also committed to assuring that all children continually improve their reading ability and skills. That means students must be challenged to read progressively more sophisticated material that is commensurate with their abilities.

Frequently, people say that advanced readers "learn to read by themselves." It is true that many young gifted students come to our schools already able to read material of varying complexity. But this does not mean that the students will sustain their interest in reading or savor the pleasures of reading to discover new ideas, far off places, and interesting people. Teachers play a critical role in encouraging young readers to improve their reading skills. It is hoped that this publication will provide a background and activities to assist teachers in providing an appropriate learning environment for even our most gifted readers.

This document reflects the dedication of many Texas educators that all students, even those who already read at or above grade level, must be instructed on how they might better use their considerable skills. It was developed over the course of a year through long meetings, many rewrites, and intense discussion about how teachers might best engage advanced readers so they not only maintain but also expand their repertoire of skills and competencies. The Texas Education Agency thanks the committed volunteers of the Texas Reading Initiative Task Force for the Education of Primary Gifted Children for their assistance.

We hope that readers of this publication will provide feedback about how they used this document and how it might be improved. Anyone may contact us at <gted@tea.state.tx.us>.

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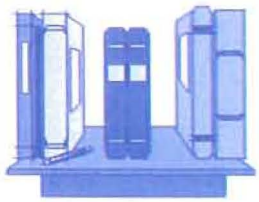
INTRODUCTION



Customizing language arts instruction to match the individual differences and readiness levels of all children is a demanding task facing primary teachers. The adjustment demands more than flexibility in methods and materials; it requires a belief that each child has the right to progress as rapidly as he or she is capable. Advanced and gifted readers have the ability to read beyond grade level. Thus, they risk receiving less instructional attention when concerned teachers struggle to meet the needs of children performing below grade level. While it is critical that all children receive the support necessary to read at least at grade level, students who have achieved this goal must be challenged to continue developing advanced proficiencies.

One factor that discourages the continued reading development of advanced readers is the use of less difficult books. Chall and Conard (1991) continue to research the match of text difficulty to reader readiness. They found that the reading texts for advanced readers "...provided little or no challenge, since they were matched to students' grade placements, not their reading levels." Chall, who also researched text difficulty in 1967 and 1983, noted that "This practice of using grade-level reading textbooks for those who read two or more grades above the norm has changed little through the years, although it has been repeatedly questioned" (111).

For decades, educators assumed that primary-aged children who read early or at advanced levels had been pushed by a well-intending adult. The accompanying conventional wisdom has been that these students plateau and read at grade level by third or fourth grade.

Indeed, recent studies document that advanced readers who are limited to a grade-level reading program do regress on standardized tests and in their pace of progress (CAG, 1999; Reis, 2001). At the same time, other studies substantiate that when advanced readers are taught with resources and instruction commensurate with their needs and abilities, regression does not take place. By eliminating work on skills already mastered and progressing through the language arts curriculum at an accelerated pace, students generally continued to extend their reading proficiency (Gentry, 1999; Kulik & Kulik, 1996). The evidence from these research studies demonstrates that to continue optimum learning, advanced readers need to be challenged through instruction at their highest readiness level and most appropriate pace. Teachers need support and strategies to manage this challenge within the diversity of a classroom that also includes a wide range of children who experience difficulty in learning to read.

The reading strategies presented in this publication are designed to provide teachers with alternatives and replacement tasks to use in differentiating lessons for students who are assessed as *developed* on the Texas Primary Reading Inventory (TPRI) or other appropriate reading tests. After teacher modeling and demonstrations, advanced students can use many of these strategies individually or in small groups as teachers provide direct instruction to other groups of students. The strategies and examples in this book have been assembled from teaching experiences based upon research and responses to the nature and needs of gifted learners. All of the strategies relate to the Task Force's Position Statement that follows.

Texas Reading Initiative Task Force for the Education of Primary Gifted Children

POSITION STATEMENT

The goal of the Texas Reading Initiative is for all children to read on or above grade level by the end of the third grade. Although this goal is critical, it is minimal relative to students who read well. The Texas Reading Initiative does not intend for advanced readers to stagnate or regress. Rather, the objective is that all students, including advanced readers, receive instruction and materials commensurate with their abilities. Advanced readers must progress at their appropriate rate, which is typically more than one grade level per year. The result of ignoring gifted readers is educationally and emotionally unjust to these children.

The Task Force also developed the following eleven Reading Recommendations for Advanced Learners. As each strategy is discussed throughout this publication, the applicable Reading Recommendations are listed.

Texas Reading Initiative Task Force for the Education of Primary Gifted Children

Reading Recommendations for Advanced Learners

1. Use preinstruction assessment to accurately determine students' instructional and independent levels of reading.
2. Use a variety of assessments beyond standardized achievement tests to document students' progress and guide instruction.
3. Use strategies geared to gifted students' instructional needs including curriculum compacting, advanced content, appropriate pacing, and above grade-level materials.
4. Focus on far greater depth and complexity.
5. Incorporate into reading programs rich, inviting tasks requiring spatial as well as analytical and abstract thinking.
6. Encourage students to develop more complex, high-level comprehension and reach advanced interpretations.
7. Encourage and support advanced levels of vocabulary and word study.
8. Promote students' research using technology to generate original investigations and advanced products.
9. Provide frequent opportunities for students to explore authentic text and a variety of genres.
10. Allow students to pursue individual interests through reading.
11. Provide examples of superior work in order to challenge students to ever-increasing levels of excellence.

This publication briefly discusses the characteristics and needs of advanced and gifted readers and then addresses differentiation strategies for reading instruction. The strategies include authentic assessment and documentation, curriculum compacting, tiered assignments, flexible grouping, high-level thinking and inquiry, visual tools for individuals or groups, and vocabulary and word play. Each strategy includes a brief explanation, connections for advanced and gifted learners, discussion of research, and

multiple applications appropriate to primary advanced readers. Printed-text and internet resources are listed at the end of each section. This publication concludes with an Appendix addressing assessment as a guide to reading instruction.

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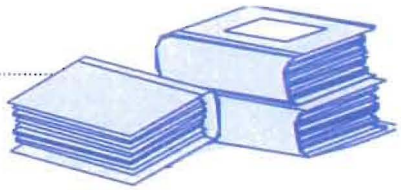

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UNDERSTANDING ADVANCED AND GIFTED READERS

A myriad of characteristics are associated with advanced potential. The brief list shared in this section is specific to behaviors demonstrated in language arts instruction rather than inclusive of all areas of the curriculum. It is not expected that a gifted reader would demonstrate all or even most of the listed behaviors. Hence, the behaviors are worded as to what advanced and gifted readers *may* demonstrate in order to provide teachers with some specific ideas regarding what giftedness looks and sounds like as children learn together.

The list is organized into seven categories characteristic of advanced and gifted students (Kingore, 2001). All children may demonstrate some of the characteristics in these categories some of the time. For example, all children can and should engage in analytical thinking. However, advanced and gifted students stand out in these categories as their responses are noticed as beyond expectations, more complex, accelerated, and higher-level than the behaviors of age-mates.

Using these seven categories, a distinction between advanced and gifted students becomes clearer. While advanced students may excel in one or more categories, gifted students typically excel in three or more categories. Advanced readers may only demonstrate advanced levels in reading (Jackson et al, 1993), whereas gifted readers may also use their advanced reading ability to accelerate learning in other academic areas.

However bright students may be, they are less likely to demonstrate advanced or gifted performance if learning experiences are limited to the regular, grade-level reading curriculum. Duke (2000) found informational texts almost nonexistent in first grade classrooms, yet gifted readers demonstrate a voracious appetite for nonfiction. Other studies admonish that instruction in most regular classes includes few, if any, provisions for advanced or gifted learners (Ross, 1993; Westberg et al, 1993).

Students' behaviors can be perceived as positive or negative depending upon the situation and the observer (Kingore, 2001). Richert (1997; 1982) noted that behaviors interpreted as negative tend to screen gifted students out of consideration for gifted programs. Slocumb and Payne (2000) stress that teachers must consider both positive and negative behaviors if students from poverty are to be recognized for their gifted potentials. Thus, both the positive and negative manifestations of giftedness are included in this overview. To accent the relationship between both points of view, the negative behaviors are correlated to the positive gifted characteristic that may be associated.

Categories of Characteristics of Advanced and Gifted Readers

POSITIVE CHARACTERISTICS

Advanced Language

- Reads one to five years or more above grade level
- Is articulate; has advanced oral skills and a strong vocabulary
- Uses language ability to display leadership qualities
- Reads differently for different purposes or materials

Analytical Thinking

- Demonstrates complex and abstract thinking when responding to text
- Works an advanced problem to its conclusion
- Connects ideas across a range of circumstances and materials
- Enjoys logic problems, complex puzzles, and word games

Meaning Motivation

- Makes philosophical statements that exceed expectations for age
- Prefers to work independently
- Concentrates/reads for long periods of time on a topic of personal interest
- Asks penetrating, intellectual questions

Perspective

- Is creative or inventive in approaches to problems
- Oral interpretations and written responses represent multiple points of view
- Draws pictures from unexpected angles and dimensions
- Infers possibilities missed by peers: *It could also mean that...*

Sense of Humor

- Understands humor and puns missed by age peers in a story
- Uses figurative language for humorous effect
- Has a more sophisticated sense of humor and understands adults' jokes
- Enjoys books with multiple layers of humor

Sensitivity

- Wants to discuss character motivation with a depth that exceeds the interest of peers
- Expresses concern for human needs in the story, community, and world
- Verbally or nonverbally demonstrates concern for the feelings and motivations of characters, peers, or adults
- Seeks resolution for anything perceived as injustice

Accelerated Learning

- Seeks and enjoys advanced-level challenges
- Requires minimum repetition for mastery of language arts skills
- Displays musical, artistic, numerical, mechanical, or intellectual abilities beyond expectations for age
- Wants to read and develop a depth and complexity of information about a topic beyond the interests or attention span of most classmates
- Accesses data with ease using an unexpected variety of technological tools and printed resources

Adapted from the *KOI* (Kingore, 2001)

NEGATIVE CHARACTERISTICS	KOI CATEGORIES: Advanced Language	Analytical Thinking	Meaning Motivation	Perspective	Sense of Humor	Sensitivity	Accelerated Learning
• Is self-critical; impatient with failures		•		•		•	
• Appears bored with routine curriculum		•	•				•
• Makes jokes or puns at inappropriate times	•				•		
• Refuses to do rote homework		•	•				•
• Shows erratic behavior; easily upset; overreacts				•		•	•
• Does messy work		•	•				•
• Is demanding of teachers' and other adults' time	•	•	•				•
• Dominates other children	•	•	•	•			
• Seems intolerant of others		•	•	•			•
• Is reluctant to move to another topic			•				•

Adapted from Richert (1997, 1982) and Kingore (2001).

Expectations to Ponder

Advanced and gifted readers are children first and need to be valued for who they are, not what they are. Consider the following points as you plan appropriate learning experiences to match the readiness level of advanced readers.

- The younger the child, the more inconsistent the test behaviors (Jackson & Roller, 1993; Roedell et al., 1980).
- Children may have gifted heads and hearts, but their hands are more age-bound. Gifted primary children may have poor coordination and may not enjoy lengthy written tasks (Kingore, 2001).
- Many gifted children are asynchronous--the levels of their cognitive, social, and physical development vary. Skills in some academic areas may be significantly above age expectations while other areas may match regular curriculum expectations (Silverman, 1993).

- Children can be advanced in reading and not in other academic areas. All precocious readers are not necessarily gifted. All gifted children are not necessarily advanced in reading (Jackson & Roller, 1993).
- The most sophisticated and enthusiastic precocious readers are those children who have driven their parents and teachers to keep up with *them* (Jackson & Roller, 1993).
- Reading materials for advanced and gifted readers need to be sufficiently challenging and engaging yet appropriate in content. Materials should match both their linguistic and social/emotional development (Polette, 2000; Jackson & Roller, 1993).
- Many talented students become underachievers in later grades if their learning environments are unchallenging (Reis et al, 1995).
- Recognizing that some students have gifted potentials does not make them more important or more valuable. Having gifted potential means that students *learn differently* than others--not that they are better than others (Kingore, 2001).

Gifted Readers Like...

A classic study by Dole and Adams (1983), surveyed gifted students to elicit their perceptions of the most important attributes of good reading materials. A summary of those findings is included here.

- Sophisticated beginning-to-read books
- Nuanced language
- Multidimensional characters
- Visually inventive picture books
- Playful thinking
- Unusual connections; finding patterns and parallels within and among books
- Abstractions and analogies
- A blend of fantasy and non-fiction
- Extraordinary quantities of information about a favorite topic
- Books about gifted children

Use this information as a guide to prepare questions for surveying gifted students in your class or even all of the gifted students in your school. What do they most like or dislike about reading? What do they most want in books and stories? What makes them pick up a book and want to read it? We can better customize reading instruction to challenge advanced readiness levels and motivate gifted learners when we understand how to more closely match their preferences and interest.

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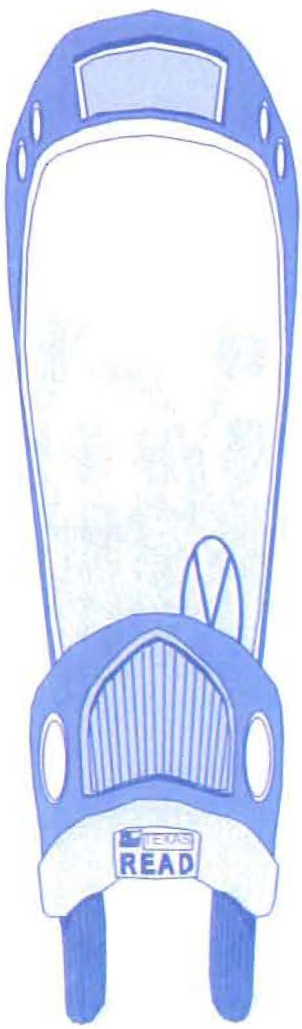
AUTHENTIC ASSESSMENT: DOCUMENTATION OF LEARNING

Strategy Introduction



Assessment drives instruction as it documents that learning has occurred and guides which instructional objectives to pursue. To be authentic, assessment must be ongoing, occur in natural learning situations, and involve real learning tasks. Those tasks should require students to generate responses rather than choose among descriptors, as in a forced choice response.

It is important to use a balance of data from authentic assessments and standardized tools. A combination of tests and assessments ensures a more accurate consideration of the multiple facets of children's talents.

For the gifted primary reader, comprehension should be assessed authentically. A test in which students list the name of the main character and bubble-in the main idea limits the gifted student's opportunities to demonstrate more advanced interpretations. Oral summaries via tape recorders, creation of a hyper-studio stack for use by other students, reading/writing logs, and other creative, open-ended options provide broader opportunities to demonstrate comprehension depth and complexity.

Assessment tasks provide tangible evidence of students' understanding and growth before instruction begins (preassessment), as instruction progresses (formative assessment), and at the end of a segment of instruction (summative assessment) (Tomlinson, 2002). Many teachers need a larger repertoire of authentic assessment procedures to implement with their students, so a variety of options are discussed in this section.

Reading Recommendations for Advanced Learners

Authentic assessment is applicable to the following reading recommendations that are listed on page three: 1, 2, 4, 6, 10, and 11.

Texas State Plan for the Education of Gifted/Talented Students

Several statements in the Texas State Plan (2000) support incorporating authentic assessment for documentation of the learning achievements of gifted students.

- School districts assure an array of learning opportunities that are commensurate with the abilities of gifted/talented students... (2.1A; 3.1A; 19 TAC §89.3)
- Program options enable gifted/talented students to work together as a group, work with other students, and work independently... (2.2A; 19 TAC §89.3(1))
- School districts shall ensure that student assessment and services comply with accountability standards...(2.6A; 10 TAC §89.5)
- Opportunities are provided for students to pursue areas of interest in selected disciplines through guided and independent research. (3.1.1R)
- A continuum of learning experiences is provided that leads to the development of advanced-level products and/or performances. (3.2A; 19 TAC §89.3(2))
- Student progress/performance in programs for the gifted is periodically assessed, and this information is communicated to parents or guardians. (3.6R)

Overview of Research

Authentic assessment applications are required to provide curriculum and instruction appropriate for advanced and gifted learners. Researchers document the following.

- Early assessment of a child's reading and writing skills may facilitate the development of appropriate curriculum for both precocious and slow-to-develop readers (Jackson & Roller, 1993).
- Gifted learners should experience consistent opportunities to demonstrate previous mastery before a particular unit of work is taught (Winebrenner, 2001).

- Gifted readers may be able to read at a higher level than they can comprehend (Assouline, 1997). However, assessment may document that they also comprehend at a higher level than adults assume.
- A curriculum to develop high potentials assesses both concrete and abstract products. Concrete products (skills and the range of things students produce) are vehicles through which abstract products are developed and applied. Abstract products are the more enduring and transferable outcomes of learning, including frameworks of knowledge, ideas, problem-solving strategies, attitudes, values, and self-efficacy (Tomlinson et al, 2002).
- Effective curriculum helps learners monitor their work to ensure competent approaches to problem solving. It involves students in setting goals for their learning and assessing their progress toward those goals (Tomlinson et al, 2002).

Applications

1.

Types of Authentic Assessment

A wide range of assessment processes are appropriate for primary learners. An alphabetized list of assessment techniques, their purposes, and their applications to advanced or gifted readers is shared on the next page. Teachers are encouraged to select from this list the types of assessments that match their instructional priorities and students' needs.

2.

Uses of Authentic Assessment

Assessment Before Instruction

Many educators associate assessing with testing; however, children may not demonstrate the range of their talents on a test. Hence, *preassessment* instead of *pretesting* is used to accent the incorporation of multiple formats in addition to tests in order to gain information about students. (The Appendix of this publication elaborates the values and process of using assessment to guide reading instruction.) Results from preassessments must be employed to guide teachers' use of curriculum

READING ASSESSMENT FOR ADVANCED READERS

TECHNIQUE	PURPOSE	ADVANCED READERS
Assessment procedures accompanying published grade-level materials	Varies according to publisher	Often inappropriate; seldom geared to advanced readers' levels
Checklists	Guide observations	Identify skill needs & pace
Interest inventories	Determine fiction and nonfiction reading interests	Plan independent reading, learning activities/projects
Literature circles	Assess advanced comprehension, fluency, and level	Prompt depth and complexity of interpretation
Performance Tasks	Integrate multiple skills at appropriate readiness level	Determine transfer and independent application
Portfolio	Document advanced achievement and growth	Prompt advanced-level responses and products
Process interviews or conferences	Gain insight into student's metacognitive processes	Assess independent strategies and achievement
Records of independent reading and writing	Keep track of quantity and quality of reading	Assess student's interests, attitudes, habits, and levels
Responses to literature	Assess comprehension, levels of reading, and use of word recognition strategies	Prompt depth and complexity of interpretation; assess achievement level
Retellings	Assess comprehension and interpretations	Prompt depth and complexity of interpretation
Running records	Assess fluency and transfer of decoding strategies	Identify skill needs
Student self-evaluations	Increase student responsibility for learning; elicit student's perceptions	Enhance motivation for excellence rather than only focusing on a grade
Teacher-selected reading samples	Assess comprehension, word recognition strategies, fluency, and readiness level	Compare growth over time; insure that beyond grade-level growth continues

compacting, tiered assignments, and flexible groups. Preassessment is needed to accomplish the following:

- Determine students' instructional reading levels and skill needs.
- Group students flexibly by readiness and skills that need to be learned.
- Analyze students' application of reading strategies.
- Provide information for selecting and pacing appropriate instructional materials.

TYPES OF ASSESSMENT THAT CAN BE USED AS PREASSESSMENTS

- ❑ Checklists
- ❑ Interest inventories
- ❑ Observations
- ❑ Performance tasks
- ❑ Process interviews
- ❑ Records of independent reading
- ❑ Running records
- ❑ Students' self-evaluations
- ❑ Teachers'-selected reading samples
- ❑ Writing samples

Formative and Summative Assessments

Formative assessments should occur throughout a unit of study to guide a teacher's instructional decision-making. Checklists, participation in literature circles, observations, process interviews, retellings, and running records are some examples that are effective for the feedback a teacher needs to determine the pacing of reading instruction.

Summative assessments document students' levels of achievement following instruction and guide the flexible regrouping of students for reteaching or advancing to the next instructional segment. Performance tasks, products from students' responses to literature, retellings, and students' self-evaluations are effective examples of summative assessments in reading.

Students' Self-assessments

Students increase their responsibility for their own learning by assessing their work before it is graded or shared with others. One focus of self-assessment with primary-aged children is the use of metacognitive responses (developed later in this section). A second focus is the use of rubrics.

Rubrics are guidelines to quality. They provide a clearer view of the merits and demerits of students' work than grades alone can communicate. Rubrics show

students how they are responsible for the grades they earn rather than to continue to view grades as something someone gives them (Kingore, 2002). Pictorial rubrics are effective for children with limited reading and writing development. To use the example on the next page, a student or teacher fills in the kind of product or task at the top of the rubric. In the blanks at the bottom of the form, teachers fill in their preferred evaluation scale, such as *less than expected, appropriate work, very well done,* and *outstanding work*. After modeling and successful experiences with multiple rubrics, some gifted learners may be able to develop their own rubrics and other methods to assess their independent study projects (Winebrenner, 2001).

The criteria on a rubric should inform students what attributes to include in a product to demonstrate their understanding of the information they acquire. Criteria must accent content rather than just focus on appearance and how to complete the product. With advanced and gifted learners the emphasis should include depth and complexity.

Complexity	Too simple or not appropriate	Simple information; limited critical thinking	Information shows critical thinking; compares and contrasts	Beyond expected level; analyzes from multiple points of view

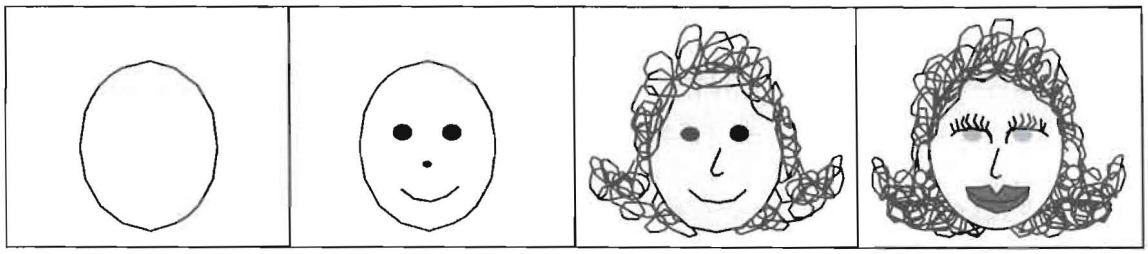
Content depth	Needs more information or more accurate information	Needs to add depth or elaboration	Covers topic well; develops information beyond facts and details	Precise; in-depth; supports content

Adapted from: *Rubrics and More!* (Kingore, 2002)

Determining Interests

Teachers use ongoing assessment of students' interests and learning profiles for the purpose of matching instructional tasks to students' needs (Tomlinson, 1999). Interest inventories, interviews, and conferences provide insights into students' interests and passions, thus guiding opportunities for teacher-suggested and students' self-selected reading materials. Advanced and gifted readers need time to pursue their interests through reading. They require access to fiction materials and informational texts several grade levels above the class average to continue their reading development.

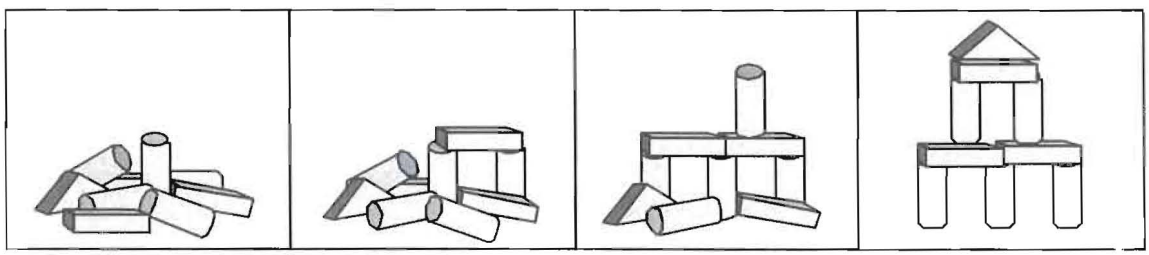
1. **Complete and detailed**



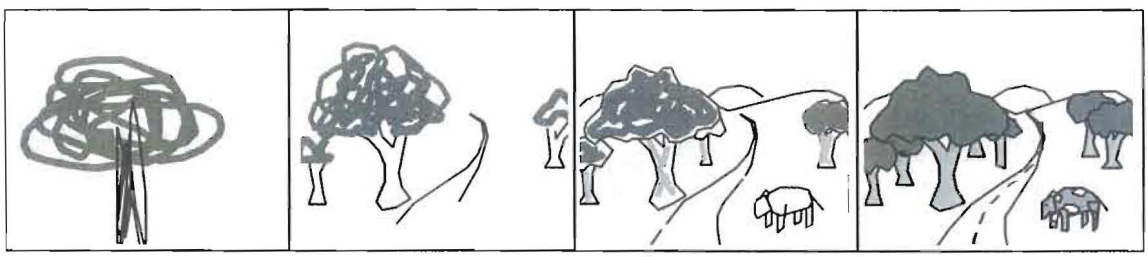
2. **Content and information**

I wro	*I wrote a little.*	*I wrote some. I learned.*	*I wrote interesting information. I tried to learn more.*

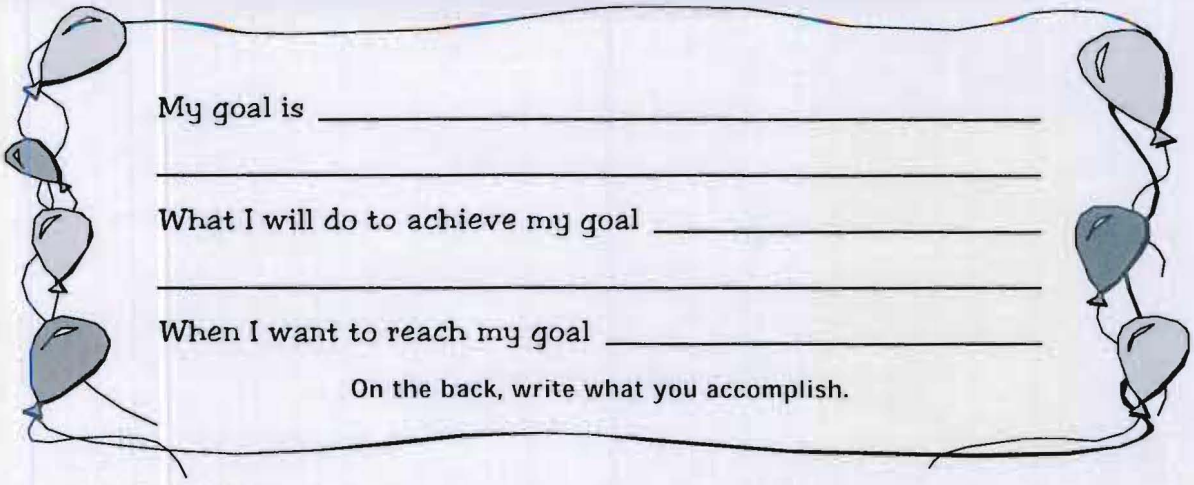
3. **Organization**



4. **Neat and attractive**



Reprinted with permission: Kingore, B. (2002). Rubrics and More!
Austin: Professional Associates Publishing.



Goal Setting

As active participants in their learning, students are encouraged to review their work, assess its strengths, and then set goals for growth and development. Most primary students need modeling and assistance to learn how to set realistic, appropriate goals and plan specific steps to accomplish their goals. Goal setting is particularly useful to increase independence when advanced and gifted students work on replacement tasks and independent or guided studies. The contract examples in Curriculum Compacting serve as effective next steps after goal setting.

3.
Student-Managed Portfolios

Farr (1998) describes a portfolio as evidence of the student's progress as a thinker and language user. Kingore (1999) describes a portfolio as a systematic collection of student work selected largely by that student to provide information about the student's attitudes, motivation, levels of achievements, and growth over time.

Portfolios offer a concrete record of the development of students' talents and achievements during a year or more. In classrooms where all students develop portfolios, the portfolio process enables each student to be noticed for the level of products he or she produces. In this manner, portfolios increase inclusion instead of exclusion by providing multiple opportunities for children from every population to demonstrate talents and gifted potential. Portfolio assessment allows schools to honor the diversity of students and discover the strengths of each learner.

Examples of Portfolio Products

PRODUCT	EXPLANATION	PURPOSE
Art	Art pieces should include the child's natural, creative explorations and interpretations (rather than crafts).	Art reflects developmental levels, interests, graphic talents, abstract thinking, and creativity.
Audio tapes	The child tapes story retellings, explanations of advanced concepts, philosophical viewpoints, musical creations, problem solutions, and ideas.	Audio tapes verify vocabulary, fluency, creativity, high-order thinking, and concept depth.
Computer products	Document computer skills through applications of more sophisticated software, word processing products, and programs created by the child.	Computer-generated products indicate computer literacy, analysis, content-related academic skills, and applied concepts.
Dictations	Write the child's dictated explanation of a product or process. Prompt these dictations with statements such as: "Tell me about your work," or "Tell me how you did that."	Dictations increase adults' understanding of the why and how of what children do. It may indicate advanced vocabulary, high-level thinking, fluency, and content depth.
Graphs or charts	Some children produce graphs or charts to represent relationships, formulate problems, illustrate math solutions, and demonstrate the results of independent investigations.	Graphs or charts demonstrate specific skills or concepts applied in the task, high-level thinking, data recording strategies, and organizational skills.
Photographs	Photograph the child's math patterns, creative projects, dioramas, sculptures, constructions, experiments, models, or organizational systems.	Photographs represent three-dimensional products. They provide a record when no paper product is feasible.
Reading level	Duplicate one or two examples of text the child reads independently. Include the child's reflection of the book to demonstrate analysis skills. Date the product.	Text samples help document reading level and the child's sophistication when interpreting advanced-level material.
Research	Gifted students usually have information and expertise beyond the age-level expectations in one or more areas. Share examples of the independent studies pursued by the child.	Research products reveal specific interests, synthesis, content depth, and complexity of the learner's thinking.
Video tape	Video tapes are wonderful ways to document performing arts, the child's learning process, and oversized products. Limit tape entries to three to five minutes to encourage the child to plan the presentation.	A video presents a significant visual record and integration of skills and behaviors. When recording group interactions, a video can demonstrate interpersonal and leadership skills.
Written products	Provide examples of original works written by the child including stories, reports, scientific observations, poems, or reflections.	Written products may demonstrate advanced language, thinking, organization, meaning construction, concept depth, and complexity.

Adapted from: Kingore, B. (2000). Parent assessment of giftedness: Using portfolios. *Tempo, XX (2),* 6-8

Primary-aged children *can* learn to be responsible for organizing and managing a portfolio of their work that documents agreed-upon criteria. Children learn to file their selected work in the back of their portfolio so it approximates a chronological order and clarifies growth over time. Increasing emphasis on students' self-reflections and making judgments about their products is one of the values of portfolios for all children.

Values of Portfolios for Advanced and Gifted Children

- Products can be assessed for a level of depth and complexity appropriate for advanced-level products.
- Products can demonstrate all areas of giftedness.
- The portfolio can be shared with parents or other professionals to document the growth and achievements of gifted students.
- Portfolios provide examples of superior work for gifted students to share among themselves as models to challenge ever-increasing levels of excellence.

However, portfolios will not document advanced and gifted potentials if they are limited to a collection of grade-level tasks. Only to the degree that portfolios include children's highest levels of performance on a wide array of challenging tasks can the portfolio process substantiate giftedness. With young children, portfolios must include more than just paper and pencil products to document their range of giftedness. Examples of products for a portfolio with an explanation and purpose for each are included in this section.

4.
Metacognition

As children read in school, they need to be guided in their development of metacognitive or self-monitoring strategies so that these important skills become an internalized part of their regular reading behavior (Cecil, 1995). Metacognition is referred to as *thinking about thinking.* It invites children to bring their thinking to a conscious level and provides a window that increases adults' understanding of students' behaviors. A parent reported that her second-grade daughter did not want to participate in a discussion about a book she had immensely enjoyed, because "I have already discussed it with myself." Since gifted readers are so consciously involved in introspection, teachers should continually analyze students' behaviors and talk with them to make sense of what is occurring in learning situations. (Abilock, 1999)

Teachers can prompt metacognitive responses with young children through one or more reflective questions, such as the following. Children can respond orally to these metacognitive questions or write brief responses to explain their thinking. The last four questions approach a more complex interpretation particularly appropriate for advanced and gifted students.

METACOGNITIVE QUESTIONS

- Tell me about your work.
- What did you think was easy to do and hard to do?
- What changes would you want to make?
- What is the most important thing you learned from this?
- What do you do when you are reading and you find a word you do not know?
- When might it be a good idea to reread something?
- Why do you think that is so?
- How did the author cause you to infer/conclude that?
- What evidence can you use to support that?
- If you did not know, what would you do to get the most information?

Think-alouds

Think-aloud is a metacognitive strategy that teachers initially model with students and then encourage students to practice in small groups. In this approach, teachers verbally share with students the cognitive processes or thinking that they go through as they read. Consider the following partial think-aloud a teacher models for learning to infer main ideas.

> As I read through this paragraph I can immediately tell that the topic of it is space travel because it mentions outer space, rockets, and planets. Even though mention is made of early pioneers, I can see that this is only a point of comparison. I notice that all of the points compared show me how early pioneer travel and space travel have been similar (Cooper, 1993, 459).

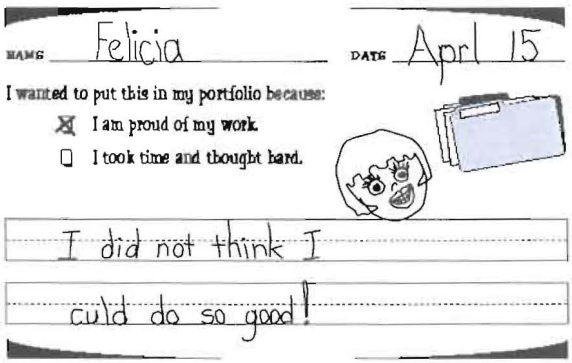
Think-alouds must be done within the context of a specific text to avoid the activity becoming nothing more than modeling of an isolated skill (Roehler & Duffy, 1991). Teachers can use think-alouds to model high-level comprehension processes with advanced primary students.

Reading Logs

Reading logs (or journals) are reading records and responses that children complete individually. The logs include lists of completed books and interesting books to read, interpretations and reactions to the materials read, and questions to pursue through other readings or discussions. Students should write entries several times a week. If the logs are completed less often, they may be viewed by students as less important and, therefore, deserving of limited effort.

Product Captions

Metacognition intensifies the assessment value of portfolios for young children. Children select a product for their portfolio and staple on a caption (a brief statement that reflects their thinking about their work). The caption can be a sentence children write on a blank paper


NAME Felicia DATE Aprl 15

I wanted to put this in my portfolio because:

☒ I am proud of my work.

☐ I took time and thought hard.

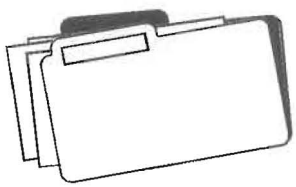
I did not think I

could do so good!

NAME _____ DATE _____

I wanted to put this in my portfolio because:

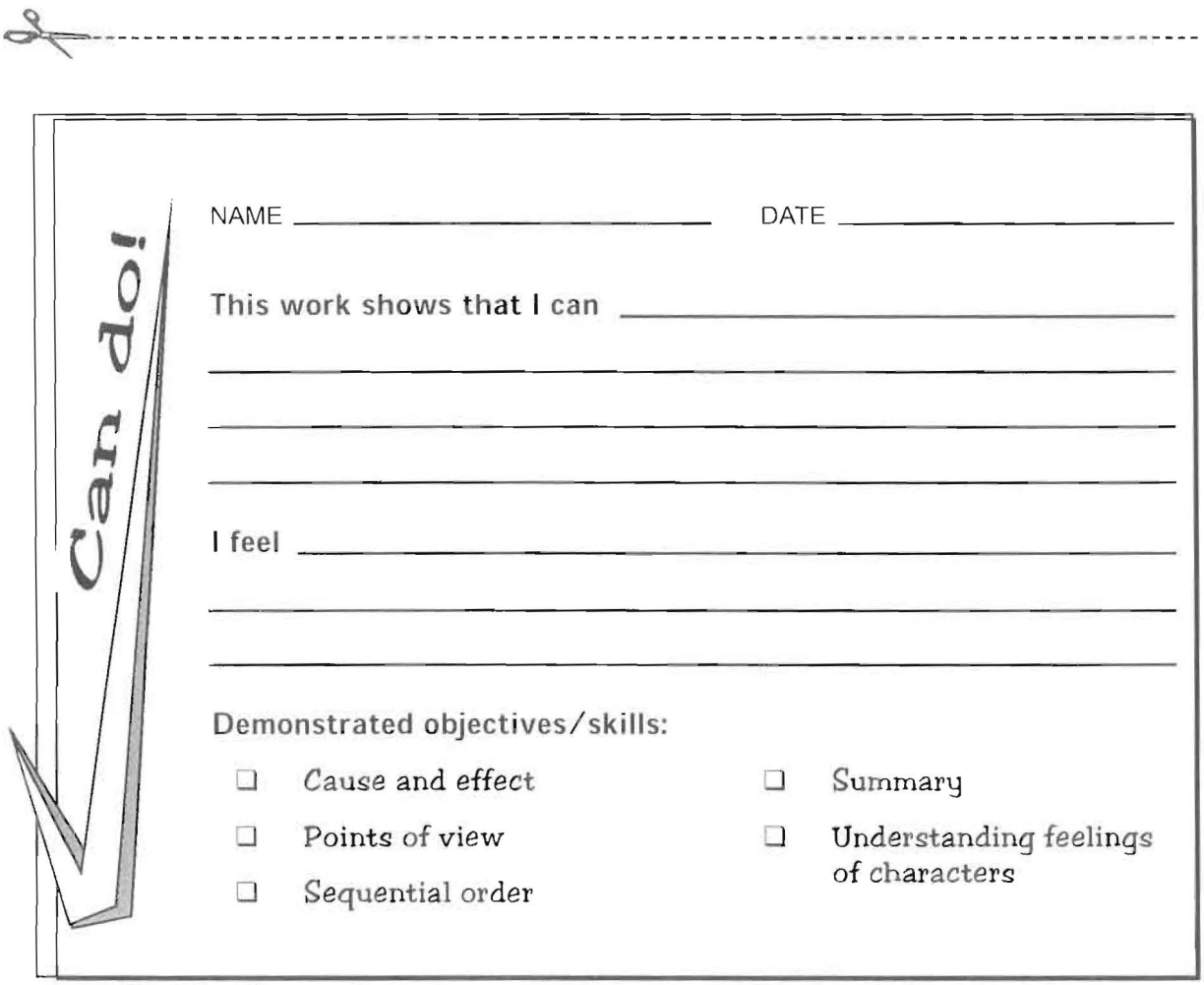
- ☐ I am proud of my work.
- ☐ I took time and thought hard.



Reprinted with permission: Kingore, B. (1999). Assessment, 2nd ed. Austin: Professional Associates Publishing.

or a simple duplicated form children complete. In the example form on the previous page, children write their name, date, check a criterion statement, and/or write a response. Some young children like to draw a face to show how they feel about their work.

Captions for portfolio products can also list learning standards that advanced and gifted students check to substantiate the learning objectives applied in their replacement tasks and independent or guided studies. An example of this metacognitive device follows. Captions with standards encourage students to be responsible for their own learning, think about what they are learning, and consider what they still want to learn. The captions crystallize the harmony of the concrete product and the product's abstract quality of more enduring learning, such as frameworks of knowledge, strategies, attitudes, and self-efficacy (Tomlinson et al, 2002). As adults review products, these captions document a student's learning so redundant activities can be avoided.



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Popham, J. (1993). Educational testing in America: What's right and what's wrong? A criterion referenced perspective. *Educational Measurement: Issues and Practice*, 12(1), 11-14.

Webography

Assessment resources and tools. Center for Research on Learning at the University of Kansas. <www.4teachers.org/profd/assessment.shtml>

Assessment and technology in early childhood. National Center for Research on Evaluation, Standards, and Student Testing (CRESST). <www.cse.ucla.edu/cresst/files/elbserve.ppt>

Authentic assessment resource links. Bowling Green State University. <www.bgsu.edu/organizations/ctl/aa.html>

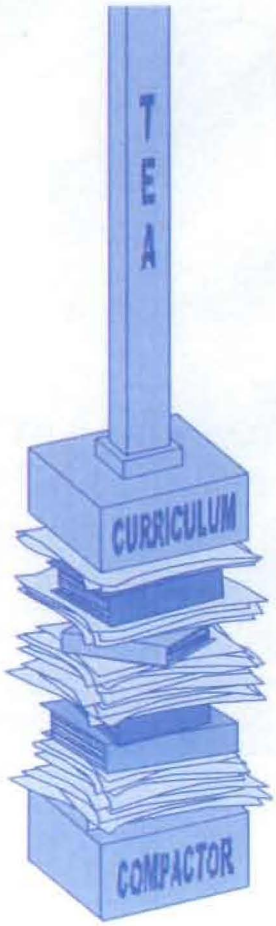
Authentic assessment resources. University of Northern Iowa. <www.uni.edu/profdev/assess.html>

Full text internet library of assessment and evaluation. Educational Resource Information Center (ERIC). <www.ericae.net/ftlib.htm>

Texas reading initiative: Early reading assessments. Texas Education Agency (TEA). <www.tea.state.tx.us/reading/interest/earreaass.html>

CURRICULUM COMPACTING

Strategy Introduction



Curriculum compacting is an instructional strategy designed to adapt the regular curriculum by eliminating work that has been mastered and streamlining content to a pace commensurate with gifted students' readiness. Advanced students familiar with a topic can demonstrate mastery on an assessment before the content is introduced in class. These students require engagement in replacement material instead of redundant work in what they already know. Compacting is appropriate for gifted learners because it provides an educational option that challenges learners and affords students who demonstrate high levels of achievement the time to pursue differentiated activities.

There are several basic principles to consider when compacting.

- Teachers must be very knowledgeable of the objectives and content of a topic in order to accurately assess what information is new or redundant for each student.
- Pre-instruction assessment is required to determine areas of mastery.
- Grades must be based on the curriculum compacted (what the student has mastered), rather than the replacement material.
- Students must have vested interest in the replacement task, and the replacement tasks should involve advanced and accelerated content rather than enrichment only.

Curriculum compacting is a significant differentiation strategy for advanced or gifted learners who typically require less repetition. These students learn skills and concepts more rapidly in their areas of giftedness and therefore need to proceed at a faster pace.

Reading Recommendations for Advanced Learners

Curriculum compacting is applicable to the following reading recommendations that are listed on page three: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

The Texas State Plan for the Education of Gifted/Talented Students

Several statements in the Texas State Plan (2000) support curriculum compacting for gifted students.

- Services for gifted/talented students are comprehensive, structured, sequenced, and appropriately challenging, including options in the four (4) core academic areas... (2.1.1E)
- Flexible grouping patterns and independent investigations are employed in the four (4) core academic areas. (2.2R; 3.3R)
- Flexible pacing is employed, allowing students to learn at the pace and level appropriate for their abilities and skills. (2.4.1R)
- District administrators, counselors, and teachers actively facilitating accelerated options. (2.4E)
- Opportunities are provided to accelerate in areas of student strengths. (3.3A; 19 §89.3(3))
- Scheduling modifications are implemented in order to meet the needs of individual students. (3.3E)

Overview of Research

Researchers document the need for curriculum compacting as a strategy to differentiate instruction for advanced and gifted students.

- Gifted and talented elementary school students will have mastered from 35 to 50 percent of the curriculum to be offered in the five basic subject areas before they begin the school year (Ross, 1993).
- As much as 50 percent of the current grade-level curriculum could be eliminated for advanced and gifted students without lowering achievement test results (Reis et al., 1992).
- By grade five, 78 to 88 percent of students can pass pretests on basal comprehension skills before the material is presented with an accuracy of 92 percent for average students and 93 percent for above-average students (Taylor & Frye, 1988).

- With minimal training, teachers can effectively identify and eliminate already-mastered material (Reis et al., 1992).
- Teachers in successful reading programs organize flexible and purposeful groups based upon children's instructional needs and adjust instructional practices according to how well and how quickly the children progress (Texas Reading Initiative, 1997).
- The majority of regular classroom teachers in all regions of the country make few, if any, provisions for advanced or gifted learners (Archambault, 1993; Ross, 1993; Westberg et al., 1993).

Applications

1.

Curriculum Compacting

Steps in Compacting the Curriculum

1. Identify relevant learning objectives.
2. Incorporate preassessment using formal and/or informal procedures to identify students who demonstrate mastery of some or all of the objectives.
3. Implement appropriate instruction through the following.
   a. Eliminate practice and instruction in areas in which students have mastered learning objectives.
   b. Streamline instruction in the areas in which students have demonstrated achievement of some of the learning objectives.
   c. Customize instruction for students who have not mastered all of the objectives but who are capable of mastering the objectives at a more accelerated pace than classmates.
4. Incorporate acceleration or replacement tasks for students who have demonstrated mastery of the learning objectives.
5. Provide time for students to participate in identified acceleration or replacement task options.
6. Maintain records to document the compacting process and the results for involved students.

2.

A Curriculum Compacting Form

The concept of compacting was originated by Joseph Renzulli and Linda Smith (Renzulli & Smith, 1978). The Curriculum Compacting form located in this section is an adaptation that incorporates Carol Tomlinson's (1999) suggestions to include what the student already knows, which objectives the student has not mastered, and a plan for the student's meaningful and challenging use of time. A completed example of this form follows. For additional forms and elaboration, see Reis, Burns, and Renzulli (1992) or Winebrenner (2001).

Curriculum Compacting

STUDENT *Linnea* TEACHER FACILITATING *Mr. Samuels*

DATE *September 15*

WHAT THE STUDENT KNOWS	DOCUMENTATION
Linnea's independent reading skills and comprehension level is three-years above grade placement.	*Standardized reading test* *Records of independent reading* *Running records*
WHAT THE STUDENT DOES NOT KNOW	**RESOURCES**
Her spelling is at grade level.	*High-frequency words* *Word stems* *Word processing on computer*

REPLACEMENT TASKS

- *She will read independently when the class works on skills that she has mastered. The librarian will help her access materials about her interest in ocean animals.*
- *She will use the computer to write a book about ocean life.*
- *She will join an advanced group working with the teacher on word stems and researching words of personal interest.*

Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers.* Austin: Texas Education Agency.

Curriculum Compacting

STUDENT _____ TEACHER FACILITATING _____

DATE _____

WHAT THE STUDENT KNOWS	DOCUMENTATION
WHAT THE STUDENT DOES NOT KNOW	RESOURCES
REPLACEMENT TASKS	

Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers.* Austin: Texas Education Agency.

3.

Process Recommendations

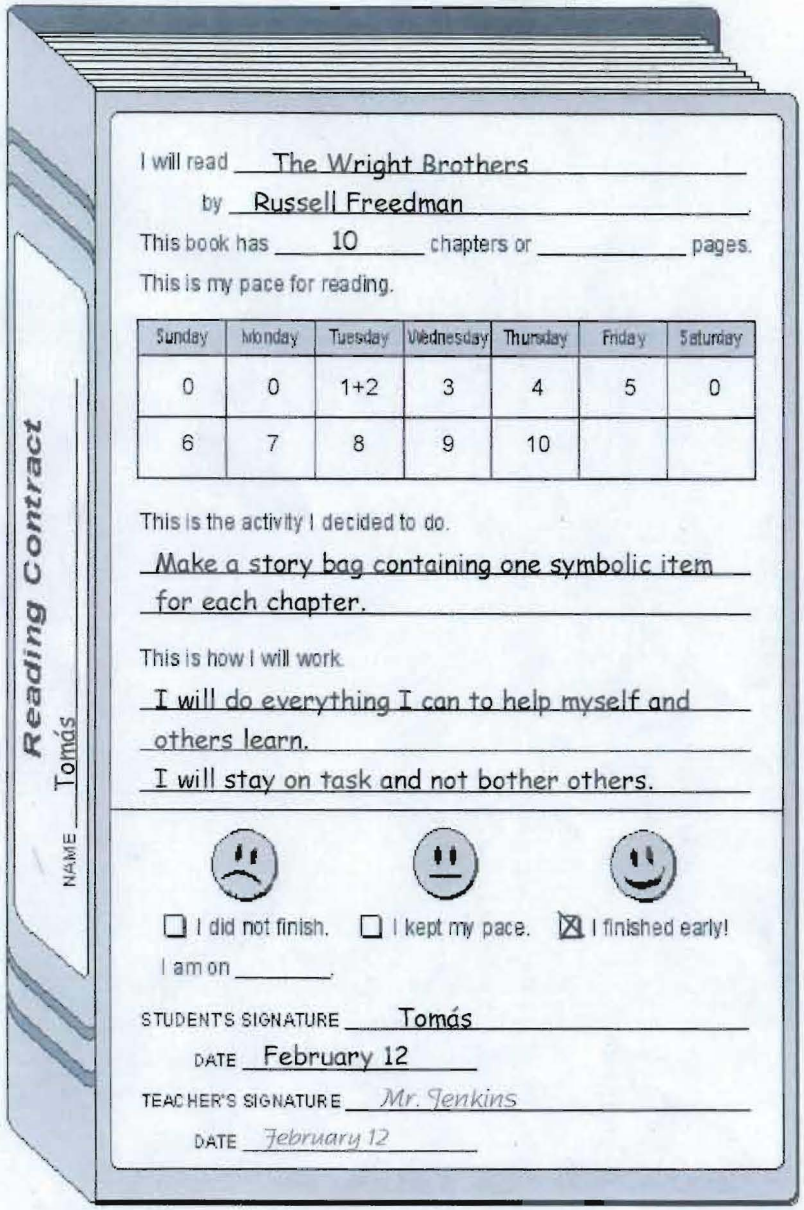
Educators new to the process might consider the following recommendations (Reis et al., 1992; Siegle, 1999; Winebrenner, 2001).

- Begin slowly to perfect the process. Implement compacting with one or two responsible students or a small group.
- Focus on curriculum that is most appropriate for compacting. The writing process, for example, should not be compacted.
- Select content with which teachers and students feel comfortable.
- Try a variety of methods to determine the students' mastery of the material. An oral preassessment in the form of a conversation with a student may be as effective as a written pretest. Document the conversation with dated notes and examples.
- When needed, request help from available sources, such as fellow teachers, parents, and community members.
- Develop simple forms, such as a compacting form and learning contracts, so that students can maintain records instead of relying on the teacher's paper management.

4.

Learning Contracts

Learning contracts support the curriculum compacting process by documenting the customized learning plan and process. They provide an opportunity for students to work independently with some freedom while maintaining the teacher's objectives. Contracts communicate what is expected and encourage students to be more responsible for their learning. Include working conditions (Winebrenner, 2001) to increase the likelihood that a student's behaviors are appropriate for the learning environment and the requirements of the learning tasks. The Learning Contract form and Reading Contract form located in this section are included as examples to model possibilities.



Reading Contract

NAME Tomás

I will read The Wright Brothers

by Russell Freedman.

This book has 10 chapters or _____ pages.

This is my pace for reading.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
0	0	1+2	3	4	5	0
6	7	8	9	10		

This is the activity I decided to do.

Make a story bag containing one symbolic item for each chapter.

This is how I will work.

I will do everything I can to help myself and others learn.

I will stay on task and not bother others.

☐ I did not finish. ☐ I kept my pace. ☒ I finished early!

I am on _____.

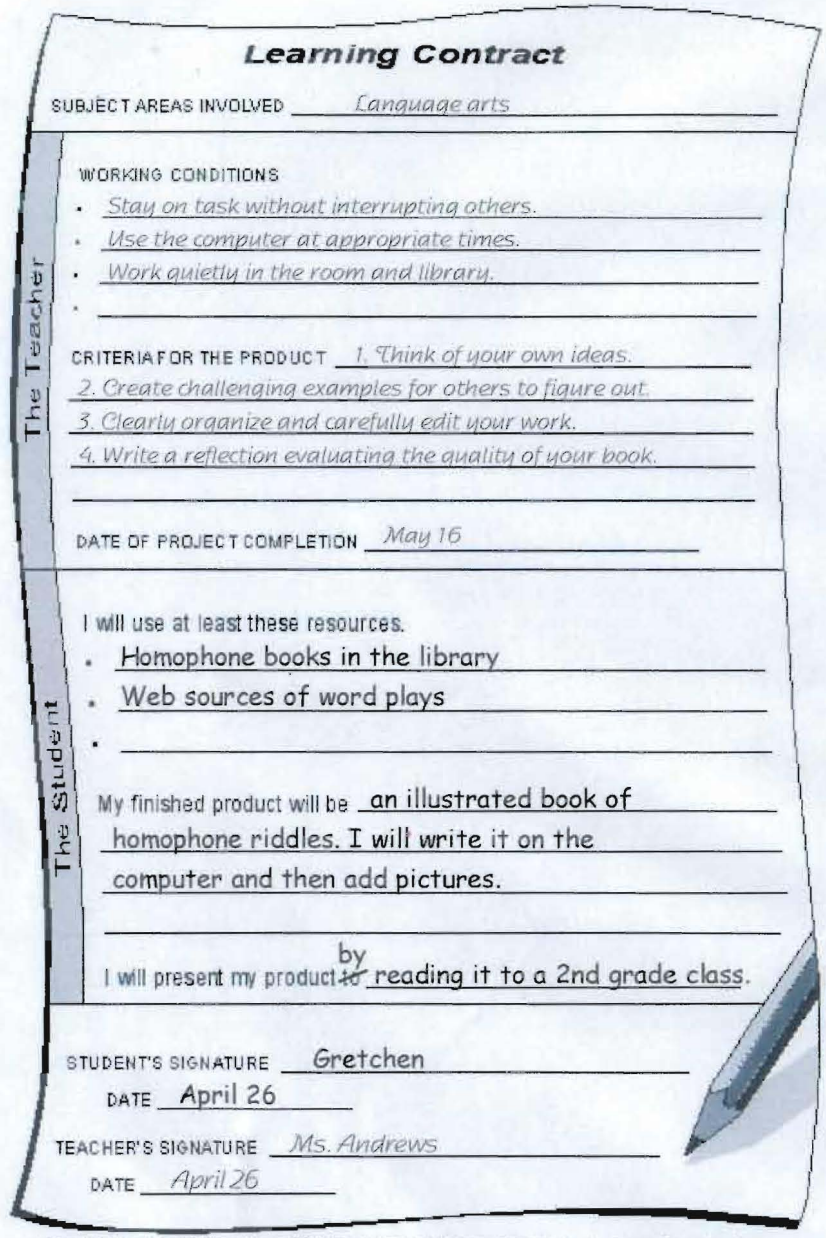
STUDENT'S SIGNATURE Tomás

DATE February 12

TEACHER'S SIGNATURE Mr. Jenkins

DATE February 12

Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers.* Austin: Texas Education Agency.



Learning Contract

SUBJECT AREAS INVOLVED Language arts

The Teacher

WORKING CONDITIONS

- Stay on task without interrupting others.
- Use the computer at appropriate times.
- Work quietly in the room and library.
-

CRITERIA FOR THE PRODUCT 1. Think of your own ideas.
2. Create challenging examples for others to figure out.
3. Clearly organize and carefully edit your work.
4. Write a reflection evaluating the quality of your book.

DATE OF PROJECT COMPLETION May 16

The Student

I will use at least these resources.

- Homophone books in the library
- Web sources of word plays
-

My finished product will be an illustrated book of homophone riddles. I will write it on the computer and then add pictures.

I will present my product ~~to~~ by reading it to a 2nd grade class.

STUDENT'S SIGNATURE Gretchen

DATE April 26

TEACHER'S SIGNATURE Ms. Andrews

DATE April 26

Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers.* Austin: Texas Education Agency.

Learning Contract

SUBJECT AREAS INVOLVED _____

The Teacher

WORKING CONDITIONS

- _____
- _____
- _____
- _____

CRITERIA FOR THE PRODUCT _____

_____

_____

_____

_____

DATE OF PROJECT COMPLETION _____

The Student

I will use at least these resources.

- _____
- _____
- _____

My finished product will be _____

_____

_____

_____

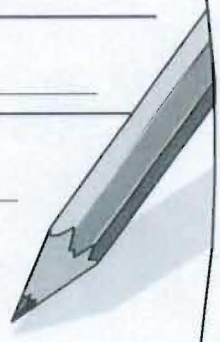
I will present my product to _____

STUDENT'S SIGNATURE _____

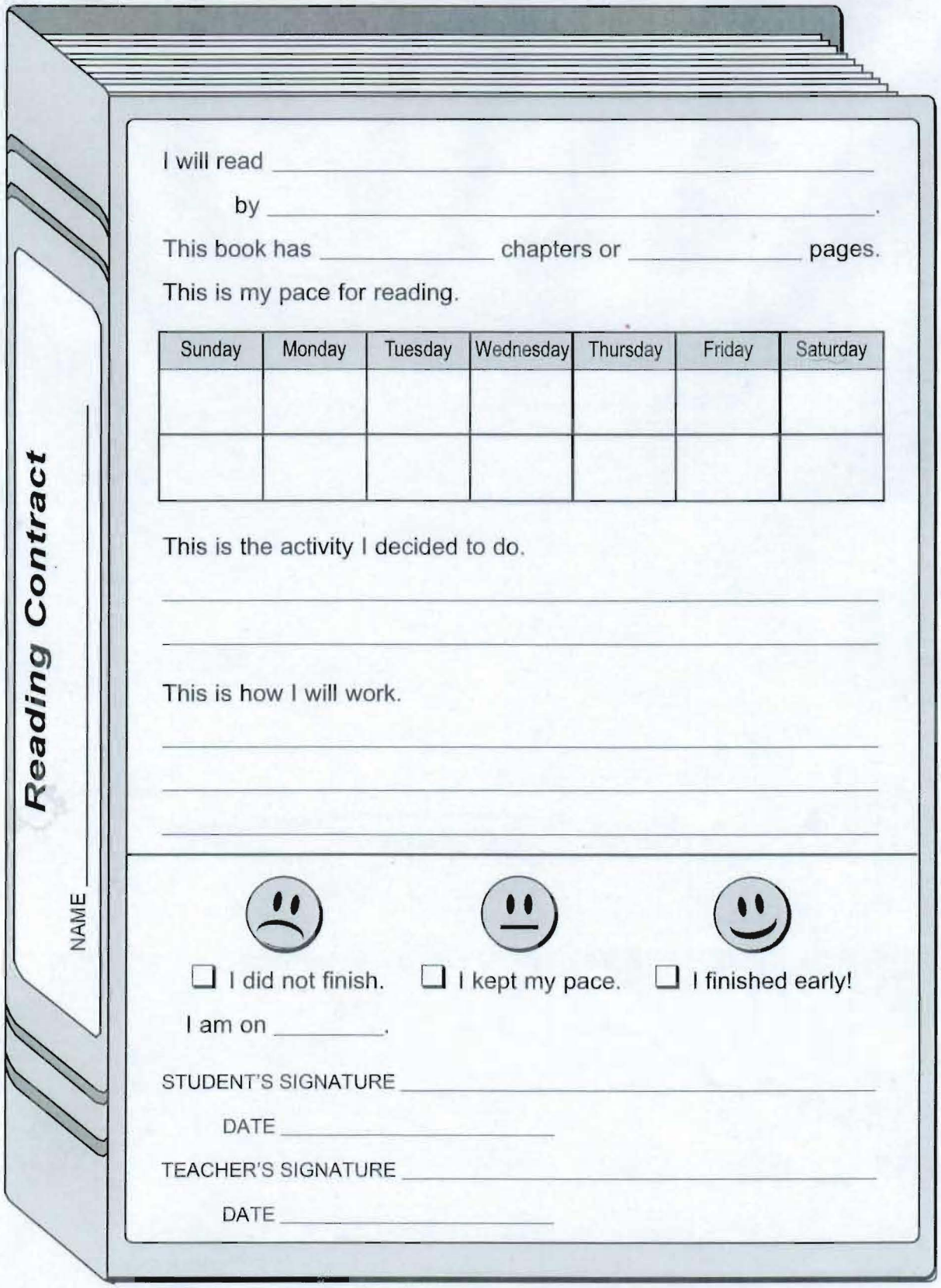
DATE _____

TEACHER'S SIGNATURE _____

DATE _____



Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers.* Austin: Texas Education Agency.



I will read _____

by _____.

This book has _____ chapters or _____ pages.

This is my pace for reading.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

This is the activity I decided to do.

_____

_____

This is how I will work.

_____

_____

_____

❑ I did not finish. ❑ I kept my pace. ❑ I finished early!

I am on _____.

STUDENT'S SIGNATURE _____

DATE _____

TEACHER'S SIGNATURE _____

DATE _____

Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers.* Austin: Texas Education Agency.

References

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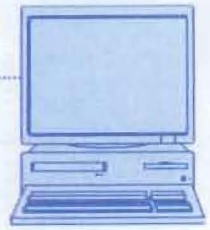
Webography



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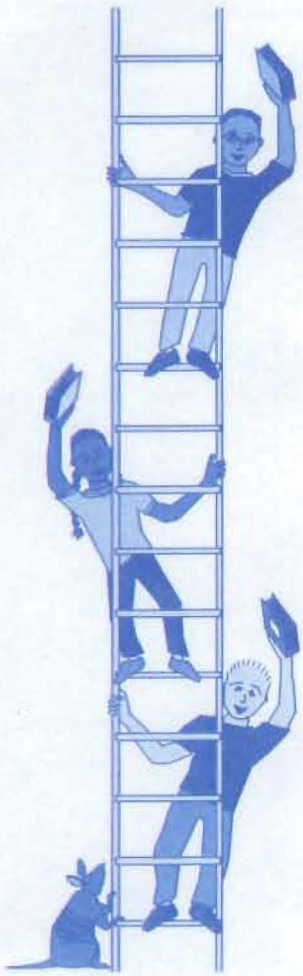
TIERED ASSIGNMENTS

Strategy Introduction



Tiered activities provide a way for all students to work within the same unit or content area yet still be challenged at the different levels they are individually capable of working. Tomlinson (1999) poses the analogy of a ladder to explain tiered assignments. The top rung represents students with very high skill and complexity of understanding. The bottom rung represents students with fewer skills. As teachers think about students' readiness and decide where that lesson should be placed on the ladder, it becomes clear who needs another version of the lesson.

Tiered assignments incorporate appropriately challenging tasks that vary in the content level of information, the thinking processes required, and the complexity of products students must create. These diverse assignments provide for varying learner differences by modifying learning conditions, providing leveled activities, motivating students, and promoting success. They allow students to focus on the essential skills at different levels of complexity and abstractness. Such activities engage students beyond what they find easy or comfortable, providing genuine challenge and helping them progress.

When differentiating instruction with tiered activities, the teacher uses varied levels of activities to ensure that students explore ideas at a level that builds upon what they already know and to facilitate their continued progression. The use of tiered

assignments blends assessment and instruction. The teacher assesses what the child knows and prescribes learning experiences that address the subject material at the student's readiness level.

Reading Recommendations for Advanced Learners

Tiered activities are applicable to the following reading recommendations that are listed on page three: 1, 3, 4, 5, 6, 7, 8, 9, and 10.

The Texas State Plan for the Education of Gifted/Talented Students

Several statements in the Texas State Plan (2000) support tiered assignments for gifted students.

- School districts assure an array of learning opportunities that are commensurate with the abilities of gifted/talented students... (2.1A; 3.1A; 19 TAC §89.3)
- Services for gifted/talented students are comprehensive, structured, sequenced, and appropriately challenging... (2.1.1E)
- Curriculum for gifted/talented students provides options in intellectual, creative, or artistic areas; leadership; and specific fields. (3.1E)
- A continuum of learning experiences is provided that leads to the development of advanced-level products and/or performances. (3.2A; 19 TAC §89.3(2))
- Students at all grade levels are involved in experiences that result in the development of sophisticated products and/or performances that are targeted to an audience outside the classroom. (3.2R)
- Students who have been served in a gifted program for one or more years will develop sophisticated products and/or performances assessed by external evaluators who are knowledgeable in the field that is the focus of the product. (3.2E)

Overview of Research

The need for tiered assignments to differentiate instruction is clearly substantiated by the following.

- Observational studies indicate that activities that are geared to the entire class seldom help struggling learners or challenge above-grade-level students to increase their thinking and expand their knowledge (Westberg et al, 1993).
- National reports document that most teachers incorporate almost no variations in their learning experiences despite the fact that students exhibit very different readiness levels (Ross, 1993).
- There is ample evidence that 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).

- Tomlinson (1999) advocates that teachers use tiered activities so all students can focus on the same essential understandings and skills at different levels of complexity, abstractness, and open-endedness. Tiered assignments are relevant to advanced learners in mixed-ability classrooms when these tasks keep the activity's objective the same but provide routes of access at varying degrees of depth and complexity. Thus, the teacher maximizes the likelihood that each student comes away with pivotal skills and key understandings at an appropriate challenge level.

Applications

Steps in Developing a Tiered Activity

1. Select the concept, skill, or generalization to be addressed.
2. Determine students' readiness and/or interests.
3. Create an activity that challenges most students, is interesting, and promotes understanding of key concepts.
4. Vary the activity appropriately for students with fewer skills.
5. Create additional activities that require high levels of thinking, are interesting, and use advanced resources and technology. Determine the complexity of each activity to document those that will challenge above-grade-level students and gifted learners.
6. Ensure that each student is assigned a variation of the activity that corresponds to that student's readiness level.

The complexity of tiered activities is determined by the specific needs of the learners in a class. The levels of the activities begin at the readiness levels of the students and continue to stretch the students slightly beyond their comfort zones to promote continual development. In classes with below grade-level learners, the lowest tier would respond to that level. 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. All tiers require teacher modeling and support.

There is no absolute number of levels of tiered activities. Sometimes two are sufficient; at other times, three to five or more work better to match the wide range of learners. The following lesson examples are tiered in process and product according to readiness.

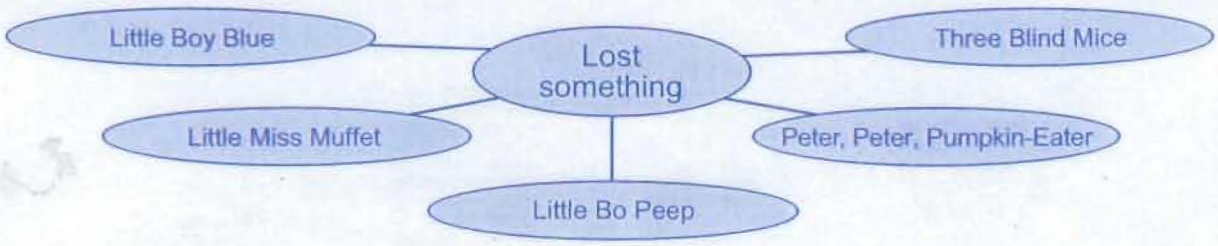
1.

Nursery Rhymes and Traditional Literature

Every student in the class listens to nursery rhymes to develop phonemic awareness. They also read familiar rhymes together and identify rhyming words. By identifying the problems in a rhyme and examining how different characters resolve them, students gain a greater understanding of character traits and problem solving.

Tier I

- The teacher writes on the board and discusses four words from different nursery rhymes. Students are given a happy-face sticker to place on the tip of one finger. They listen as the teacher recites well known rhymes and raise their sticker when they hear a word that rhymes with one on the board.
- The teacher and students read together another familiar rhyme. They identify the rhyming words, and students name and list additional words that rhyme.
- The teacher presents a list of nursery rhyme characters. Together, the group brainstorms and lists a problem experienced by each. Then, they add a star beside the name of each character if the problem was solved.
- During independent work time, students create a web with a problem in the center, listing the characters who experienced this problem in the connecting circles.



Tier II

- Students are given a happy-face sticker to place on the tip of one finger. They listen as the teacher recites a well known nursery rhyme. The teacher and students then read the same rhyme together. They stop at the end of each line, and students raise their sticker as they think of another word that rhymes with the last word. The teacher and students list the rhyming words and then discuss what they observe about the spelling patterns and differences among the rhyming words.
- After discussing *determination* as a trait of the Itsy Bitsy Spider, the group analyzes the spider's problem and how the spider used that trait to solve the problem. Students then work in pairs to decide a trait of another nursery rhyme character and how that character used that trait to solve the problem.

- Following the teachers' model, the students write analogies comparing two diverse characters.

  _____ is like _____ because _____.

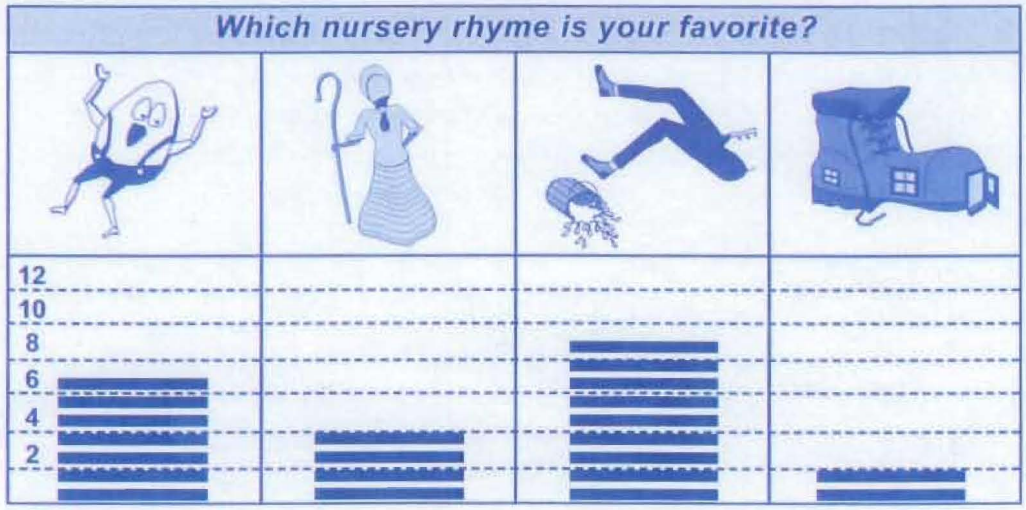
  _____ is like _____ when _____.

  Humpty Dumpty is like Jack and Jill because they all fell down.

  The cow who jumped over the moon is like Mirette on that high wire because they both did something very hard to do.

- During independent work time, students demonstrate their understanding of a character by writing and illustrating what they think happens next in a nursery rhyme of their choice.

As a culminating activity for both tiers, gather in a large group to read and recite favorite rhymes and discuss what each group learned. Together, construct a graph to determine which rhymes are the favorites of the children in the class.



2.

Novel Study

Another example of a lesson using tiered activities involves comparison/ contrast and cause/effect within a novel or between novels. Tier I analyzes cause/effect situations and compares information within one novel. Tiers II, III, and IV analyze cause/effect and compare/ contrast between two novels. Every student in the class reads *Chocolate Fever*. However, Tier II also reads *The Chocolate Touch*, and Tiers III and IV also read *Charlie and the Chocolate Factory*. All students are involved in analyzing text. The tasks vary in the kinds of interpretations and sophistication of products they require.

Tier I

Chocolate Fever
by Robert Smith

- The teacher presents a list of five causes in the story. Students review the story to determine the effect of each. The teacher records the effects.

	CAUSE: *Why?*	EFFECT: *What happened?*
1.	Henry's parents let him eat as much chocolate as he wants.	He eats chocolate with every meal.
2.		
3.		

- Select two of the cause/effect situations to compare. Discuss which is funnier and which is more important to the story.
- Students work with the teacher and use a Venn diagram (see Visual Tools, page 74) to compare and contrast the main character at the beginning and at the end of the book. Then, brainstorm and list together the events that caused the character to change.

Tier II

Chocolate Fever
by Robert Smith

&

The Chocolate Touch
by Patrick Catling

- Students create a story map (see Visual Tools, page 76) for each novel.
- Students use the information on their story maps to compare and contrast the two stories on a Venn diagram (page 74).
- Discuss what might happen if Henry and John became friends. Based upon the characters' development and the information in both books, list and illustrate the varied and unusual effects that might occur.

Tier III

Chocolate Fever
by Robert Smith

&

Charlie and the Chocolate Factory
by Roald Dahl

- Based upon an analysis of the character, discuss the possible effects if Henry found himself in Willy Wonka's factory.

- Students forecast a list of the many varied and unusual effects that might occur if Willy Wonka and Sugar Cane were to become partners. Next, students work in small groups using specific information from both stories to create a visual product that illustrates the results.
- Each student writes a letter to Roald Dahl or Robert Smith explaining the similarities and differences of the other author's work.

Tier IV

Chocolate Fever **by Robert K. Smith** **&** ***Charlie and the Chocolate Factory*** **by Roald Dahl**

- Based upon an analysis of both books, students debate whether or not either book will be valued as a classic by future generations. Students develop criteria to evaluate the relevancy of the theme for future youths, the appropriateness of the characterizations in a global society, and the significance of the issues posed in each book. Each debater represents a specific book character or someone with a relationship to the book, such as the author, publisher, librarian, literary critic, or reader.

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FLEXIBLE GROUPING

Strategy Introduction

Grouping within the classroom is essential in order to provide the optimal learning environment for all students. Flexible grouping is the practice of short-term grouping and regrouping students in response to the instructional objectives and students' needs. It contrasts with more stagnant grouping procedures in which students are placed in the same group or given whole-group instruction for all or most of the school year. Flexible groups are fluid. In any week, a child may work independently, be in one group for a specific purpose, and then participate in other groups to accomplish different objectives. In a differentiated classroom that uses flexible grouping practices, whole-class instruction can also be used for introductory information and group-building experiences.

Flexible grouping seeks to avoid the stigma of labeling children by their ability levels, and it recognizes that no single group placement matches all of a child's needs. With flexible grouping, students are assigned to groups in varied ways and for varied purposes. Students can be grouped by skill, readiness, ability, interest, learning style, or for socialization. Grouping can take place within a classroom, among grade-level classrooms, across grade levels, throughout an entire school, or even between schools.

Reading Recommendations for Advanced Learners

Flexible grouping is applicable to the following reading recommendations that are listed on page three: 1, 4, 5, 6, 8, and 10.

The Texas State Plan for the Education of Gifted/Talented Students

Multiple statements in the Texas State Plan (2000) support flexible grouping for gifted students.

- Services for gifted/talented students are comprehensive, structured, sequenced, and appropriately challenging... (2.1.1E)
- Program options enable gifted/talented students to work together as a group, work with other students, and work independently... (2.2A; 19 TAC §89.3(1))
- Flexible grouping patterns and independent investigations are employed... (2.2R; 3.3R)
- Flexible pacing is employed, allowing students to learn at the pace and level appropriate for their abilities and skills. (2.4.1R)
- Opportunities are provided for students to pursue areas of interest in selected disciplines through guided and independent research. (3.1.1R)

Overview of Research

The case for flexible grouping of students is strongly supported in educational literature with multiple studies detailing its positive effects.

- The Texas Reading Initiative (1997) noted that teachers in successful reading programs organize flexible and purposeful groups based upon children's instructional needs and adjust instructional practices according to how well and how quickly the children progress.
- The National Reading Panel (2000) reports that reading skill instruction is most effective when teaching children in small groups.
- Kulik (1992) detailed the advantages of ability grouping, and found that the greatest effects were realized when the curriculum was adjusted to the aptitude levels of the groups.
- Schuler (1997) surveyed 69 school districts in 29 states using cluster grouping. She concluded that gifted students benefit from this program approach and noted that cluster grouping may have a positive effect on the achievement of all students.
- Gentry (1999) documented the positive effects of cluster grouping and reported that flexible grouping provided numerous benefits to all students and teachers.
- Rogers (1998) reported the beneficial effects of ability and cluster grouping, pointing out that acceleration opportunities must be used in tandem with these grouping strategies for a substantial achievement effect. She accented that no

well-controlled research supports that whole group and mixed-ability grouping has any achievement effect with highly able or gifted students.

- Loveless (1998) stated that within-class and cross-grade ability grouping are both supported by research.

Applications

1.
Cluster Groups

Flexible grouping practices are positively impacted by cluster grouping. Cluster grouping is a program model in which at least five advanced or gifted students in a grade level are placed in one classroom with an otherwise heterogeneous student mix. This placement responds to the fact that gifted students benefit from learning together and need to work with intellectual peers who have similar areas of strength (Kulik, 1992; Rogers, 1998). This cluster is assigned a teacher who has special training in teaching advanced and gifted children to ensure that the learning needs of these students are met within the heterogeneous class.

Cluster grouping encourages a variety of flexible grouping arrangements. In response to different instructional objectives, students work independently, in small groups, in mixed-ability groups, or with the entire class. Since several advanced students are clustered together full-time in one room, a teacher can flexibly place them in a homogeneous group part of the day for more effective compacting and differentiation. Cluster grouping allows advanced readers to learn together on a daily basis (because the research supports that they learn better in homogeneous groups) while students of all other ability levels are grouped heterogeneously (as research indicates is best for them) (Winebrenner & Devlin 2001).

2.
Examples of Flexible Grouping

Teachers in one grade level or across grade levels can utilize these flexible-grouping examples. The assistance of a librarian or special populations teacher such as a gifted specialist can be invaluable in helping make this strategy successful.

Skill Groups

Skill groups are short-term placements based upon a diagnosed instructional need in grade-level skills or for acceleration in advanced-level skills. Instruction may be in word analysis, comprehension, increasing reading fluency, or adding depth to a composition. Students are regrouped as they master the skill. Gifted and talented students may exit the group before other students.

Independent or Guided Studies

Using an interest inventory and an assessment of individual student's content readiness, the teacher groups students for independent or guided studies. Facilitated by a classroom teacher, librarian, special populations teacher, gifted specialist, or an adult specialist in that topic, students work independently or in a small group to research a topic of personal interest in greater depth and complete a project to share with an audience. Independent or guided projects are an effective replacement task for students who pretest beyond the planned curriculum. Gifted students have the opportunity to develop the level of products described in the state goal for services for gifted students found in *The Texas State Plan for the Education of Gifted and Talented Students* (2000).

Reading and/or Writing Workshops

Workshops provide an authentic purpose for the development of reading and writing skills. Students work together to read, write, edit, and/or comment on each other's original work. Schedules are flexible and include periods of time for students' uninterrupted reading or writing, sharing, debriefing, and conferencing with the teacher and/or other students. Teachers continually assess through observation and model appropriate reading and writing behaviors as needed. Student responsibilities include reading and writing logs, goal setting, self-assessment, and creating portfolios of products that reflect their level of expertise.

Literature Circles and Book Clubs

Literature circles and book clubs are informal, interest-based, flexible groups. Their purpose is to augment the regular reading program, build upon students' interests, and encourage a love of reading. Multiple copies of several books are made available for students to select. The books represent different levels of complexity and appeal to diverse interests. A small group is formed by students interested in reading the same book. Other groups form to read different books, books by the

same author, or books around a common theme. The focus is conversational as groups discuss story elements, inferences and opinions. The teacher facilitates the process, prompts content comparisons, motivates sharing across groups, and authentically assesses students' strengths and instructional needs as well as possibilities for future book selections.

These flexible groups change with each book students read. Literature circles and book clubs provide groups of advanced students opportunities to read at their appropriate pace and level. These groups also encourage advanced readers to construct more complex and abstract analyses with others who are prepared to think at that level.

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HIGH-LEVEL THINKING AND INQUIRY

Strategy Introduction

All students need to be exposed to challenges and thinking experiences that encourage them to process information at high levels. Many activities shared here can be used with the entire class. Some are best used with grouping arrangements that allow advanced students to work together and challenge each other while other students experience a simpler level of success appropriate to their needs. This section describes techniques that enable teachers to differentiate lessons to promote greater depth, complexity, and abstract-thinking opportunities for the gifted learners. These advanced students can also use high-level thinking strategies to invent their own variations for challenge.

Reading Recommendations for Advanced Learners

Inquiry and high-level thinking are applicable to the following recommendations that are listed on page three: 3, 4, 5, 6, 7, 8, 9, 10, and 11.

Texas State Plan for the Education of Gifted/Talented Students

Several statements in the Texas State Plan (2000) support incorporating inquiry and high-level thinking experiences for gifted students.

- School districts assure an array of learning opportunities that are commensurate with the abilities of gifted/talented students... (2.1A; 3.1A; 19 TAC §89.3)
- Program options enable gifted/talented students to work together as a group, work with other students, and work independently... (2.2A; 19 TAC §89.3(1))

- School districts, when possible, shall provide out-of-school options relevant to the student's area of strength. (2.3A; 19 TAC §89.3(3))
- Opportunities are provided for students to pursue areas of interest in selected disciplines through guided and independent research. (3.1.1R)
- A continuum of learning experiences is provided that leads to the development of advanced-level products and/or performances. (3.2A; 19 TAC §89.3(2))

Overview of Research

Differentiation through high-level thinking and inquiry is supported by the following.

- The use of inquiry and high-level thinking is a long-standing instructional goal (Bloom, 1956) and a frequently-used method of differentiation (Tomlinson, 1995).
- If teachers pose simple questions, they get basic responses from students. If teachers ask questions that require high-level analysis, they are more likely to receive high-level responses (Westberg et al.,1993).
- The Classroom Practices Study substantiated that teachers differentiate very little in question types and levels between the average and gifted students. In regards to wait time (the length of elapsed silent time after a question), this study noted that more wait time was provided to average-ability students than to gifted students. This practice risks encouraging advanced students to respond more glibly rather than develop depth and complexity in their responses (Westberg et al.,1993).
- A common objective for gifted students is to increase their critical and productive thinking capacity (Gallagher & Gallagher, 1994).
- Attention to high levels of thinking help ensure that activities for advanced students are not just busy work and time fillers (Davis & Rimm, 1989).

Applications

1.
A Thinking Skills Checklist

Lessons can be differentiated through high-level thinking skills that promote greater depth, complexity, and abstract thinking opportunities for gifted learners. A

list of critical and creative problem-solving skills from The National Research Center for Gifted and Talented (Kaplan and Cannon, 2000) is adapted and organized here as an alphabetized checklist.

THINKING SKILLS

- ❑ Categorize
- ❑ Classify
- ❑ Determine cause and effect
- ❑ Determine relevancy
- ❑ Determine strength of argument
- ❑ Differentiate real and fantasy
- ❑ Discriminate similarities and differences
- ❑ Formulate questions
- ❑ Hypothesize
- ❑ Identify ambiguity
- ❑ Identify characteristics
- ❑ Identify the pattern
- ❑ Judge with criteria
- ❑ Make analogies
- ❑ Rank, prioritize, and sequence
- ❑ See relationships
- ❑ Summarize
- ❑ Think deductively
- ❑ Think inductively

Use these thinking skills to enhance a lesson by:

- Checking the skills that most apply to the materials being used and the readiness of the students in the class.
- Modeling those skills in activities and discussions with a group of advanced learners.
- Providing that group a copy of a shorter version of the most applicable thinking skills that have been successfully demonstrated and experienced.
- Encouraging students who demonstrate competency in this process to use the checklist independently to incorporate their own variations and develop more challenging lessons and products.

Examples of incorporating some of these thinking skills into a reading lesson are provided using two popular children's books. In these first and third grade examples, teachers select a small number of thinking skills that apply to the content and then guide the discussion and tasks with a small group of advanced students who have already read and comprehended the stories. Later, teachers instruct some students to independently apply the same thinking skills to another book as the teacher works directly with other students.

Where the Wild Things Are

by Maurice Sendak

THINKING SKILLS

- ❑ Discriminate similarities and differences
- ❑ Differentiate real and fantasy
- ❑ Determine relevancy

Group discussion and learning tasks

- Complete a Venn Diagram that compares how Max is different before and after visiting the wild things.
- Fold a paper in half. On one side, draw things in the story that could be real. On the other side, draw things in the story that could only be fantasy.
- Discuss the value of imagination for children and for adults.

The Mysteries of Harris Burdick

by Chris Van Allsburg

THINKING SKILLS

- ❑ Identify characteristics
- ❑ Identify the pattern
- ❑ Determine cause and effect
- ❑ Judge with criteria

Group discussion and learning tasks

- What attributes do all of the pictures have in common?
- Illustrate or explain one pattern you identify in this book.
- Identify several cause and effect relationships inferred in this book.
- As a group, brainstorm and list criteria for judging a piece of literature as a classic. Then, individually, write an editorial declaring whether or not this book will be valued as a classic by future generations.

2.

Bloom's Taxonomy of Educational Objectives

Bloom's Taxonomy is probably the most familiar way to examine thinking. This taxonomy includes six levels from the beginning level (knowledge) to the highest level (evaluation). Each student needs to experience the full range of Bloom's

Taxonomy. However, it is appropriate for advanced-level students and imperative for gifted students to spend the majority of their time experiencing the analysis, synthesis, and evaluation levels.

Judging concepts and ideas by established criteria

Arranging and rearranging information and ideas to create new elements or an original product

Interpreting whole/part relationships; interrelating knowledge and concepts

Illustrating, constructing, or applying a principal to solve a wide range of problems

Demonstrating an understanding of the concept or principal

Recalling facts, giving definitions, and providing descriptions

The literary elements of setting and character effectively demonstrate an application of Bloom's Taxonomy to a story. Notice in the examples how the Taxonomy can be used to develop both questions and learning tasks.

Setting

KNOWLEDGE	Where does the story take place?
COMPREHENSION	What words are used to describe the setting?
APPLICATION	Illustrate the setting as it is described in the story.
ANALYSIS	Discuss three ways that the setting is like or different from where you live.
SYNTHESIS	Create a different setting for this story and predict how the story would change.
EVALUATION	Establish criteria to evaluate whether the original or the new setting is more compatible for the characters.

Character	
KNOWLEDGE	Who is the main character?
COMPREHENSION	Write two or three sentences describing the character.
APPLICATION	Demonstrate how the character uses _____ in the story.
ANALYSIS	List three traits, and explain how the main character exhibits these traits in the story.
SYNTHESIS	Hypothesize what happens to the character after the story ends. Explain your prediction by relating it to the characters' traits and actions in the original story.
EVALUATION	Evaluate the main characters, and provide evidence of who were the cleverest, funniest, bravest, and most or least likeable characters in the story.

3. Inquiry

Inquiry is used in this section to model four types of questions applicable to primary children: quantity questions, compare/contrast questions, feelings/opinions/personification questions, and what-if/how-come questions.

Quantity Questions

Quantity questions are basically *listing* questions (Johnson, 1992). Teachers tend to ask reproductive quantity questions more than other types (Westberg et al.,1993). Reproductive questions refer to those questions that only require students to review the story or passage and then to reproduce the materials from it. Care must be taken with advanced and gifted readers to ensure that questions engage their productive thinking. Productive thinking questions require learners to interpret the material in their reading to produce more creative responses. The challenge is to move from reproductive questions to productive questions. Primary teachers like to refer to these as skinny and fat questions.

Reproductive/Skinny Questions	Productive/Fat Questions
Responses	
Simple thinking One or two word answers Right-and-wrong-answer responses	High-level thinking More elaborated answers Open-ended, multiple possibilities
Key words and phrases	
List _____. Name _____. How many _____?	Create _____. Analyze _____. What are different ways _____?
Examples	
What is three plus two? List all the parts of a clock.	What are all the ways to make five? What are all the ways besides clocks to tell time?

Brainstorming is a technique to encourage quantity questions. It provides the opportunity to share as many ideas and details as a particular group can list. One pneumonic device for establishing the brainstorming process is BUILD.

B uild on each other's ideas.
U se the far-out.
I nvent, invent, invent many answers.
L ist anything and everything.
D o stretch your ideas.

Remember that during brainstorming, answers are not judged, and all ideas are accepted. Many times, the most original ideas come after the group gets silly or just as ideas seem to be exhausted.

Compare and Contrast Questions

Compare and contrast questions analyze how two items are alike and/or different. Venn diagrams (see Visual Tools) help students visualize and organize the similarities and differences between items. Challenge advanced students to complete Venn diagrams individually or in pairs rather than only in whole class discussions.

Compare and contrast questions are ideal for advanced students when the questions progress from the concrete to the abstract and gradually evolve to more

difficult and complex categories requiring forced associations and analogies. Forced associations and analogies are linking-thinking comparisons involving items that do not seem to belong together.

- How is a button like a zipper or a sand dollar?
- How is the rain forest like spring or winter or a house?
- How is thinking like a tree or an umbrella?
- How is a pencil like you or your community or an eagle?

These forced associations can be content rich when students must analyze common attributes of the compared items to complete the task.

Feelings, Opinions, and Personification Questions

Feelings, opinions, and personification questions are characterized as viewpoint or personal-involvement questions that encourage students to make connections to the content being studied. These questions prompt multiple points of view and invite personal responses. The following guidelines enable teachers to implement feeling, opinions, and personification questions while promoting a risk-free thinking environment for children.

- Allow time to really listen to students' opinions.
- Discuss *why* certain ideas are expressed.
- Encourage children to elaborate and build upon initial statements.
- Help students learn that it is okay for them to have different opinions and preferences.

EXAMPLES FOR EACH TYPE OF QUESTION

- **FEELINGS:** If you were a bridge over the river in our story, what would make you feel happy? What would make you feel tired? What might make you feel worried?
- **FEELINGS/OPINIONS:** How do you think it would it feel to be this character?
- **OPINIONS:** Which five words do you think are the most important words in the world? Why do you think so?
- **OPINION:** In your opinion, what is the most important story we have read this year. What makes you think that?
- **PERSONIFICATION:** If you were something that lives in the ocean, what would you be? Why would you choose that?
- **PERSONIFICATION:** If you were one of the characters in this story, which one would you be? Why do you prefer that character?

Help students develop their own questions such as:

- How would it feel to be a_____?
- What do you think _____ would have done in the same situation?

- How would this look if you were a _____?
- If you were this book we are reading, what would you want to ask the author? What might you ask a librarian?
- What might a pencil want to ask a marker? What might a book about animals ask an animal at the zoo?
- How do you feel about _____? How might you feel about it if you had lived 150 years ago?

What-If and How-Come Questions

These questions help students learn to think beyond facts and details. Teachers frequently rely on *who, what, when, where, why,* and sometimes *how* questions to prompt students' retelling of the main points of a story. Enhance those simple questions with more productive thinking challenges that encourage high-level responses.

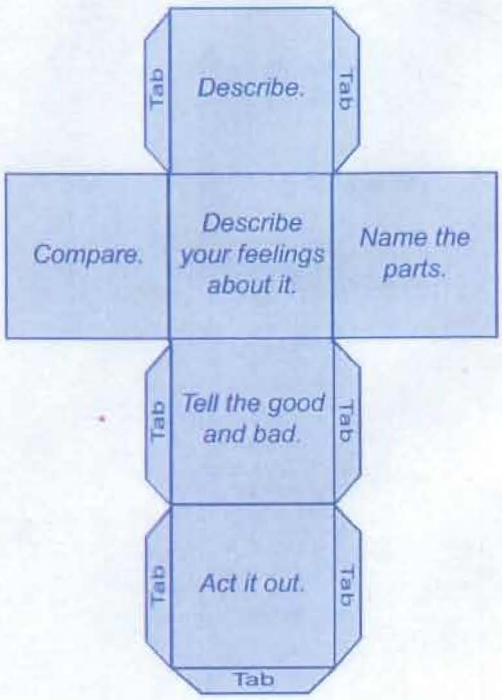
- What are all the ways_____?
- What if_____?
- Why shouldn't the character_____?
- Who cannot_____?
- How would_____?
- Who will_____?
- How is _____ different from _____?
- What might happen next if_____?
- When would_____?
- Where might_____?

4.
Question Cubes

Question cubes are a technique to connect thinking skills and inquiry. Using the cube pattern in this section, teachers list on each of the cube surfaces different thinking skills, verbs that correspond to Bloom's levels of thinking, or prompts based upon the four types of inquiry questions. A cube is then gently tossed. The prompt that ends up on the top of the cube determines the question or learning task for students to complete.

Teachers can make cubes in different colors corresponding to the degree of difficulty or complexity of the thinking required by the prompts. Colored cubes allow the teacher to group students for tasks appropriate to their level. For example, on

one cube the *describe* question could ask students to describe the setting using words or pictures. Another cube directs other students to describe the setting using at least three sentences with two or more adjectives in each sentence.

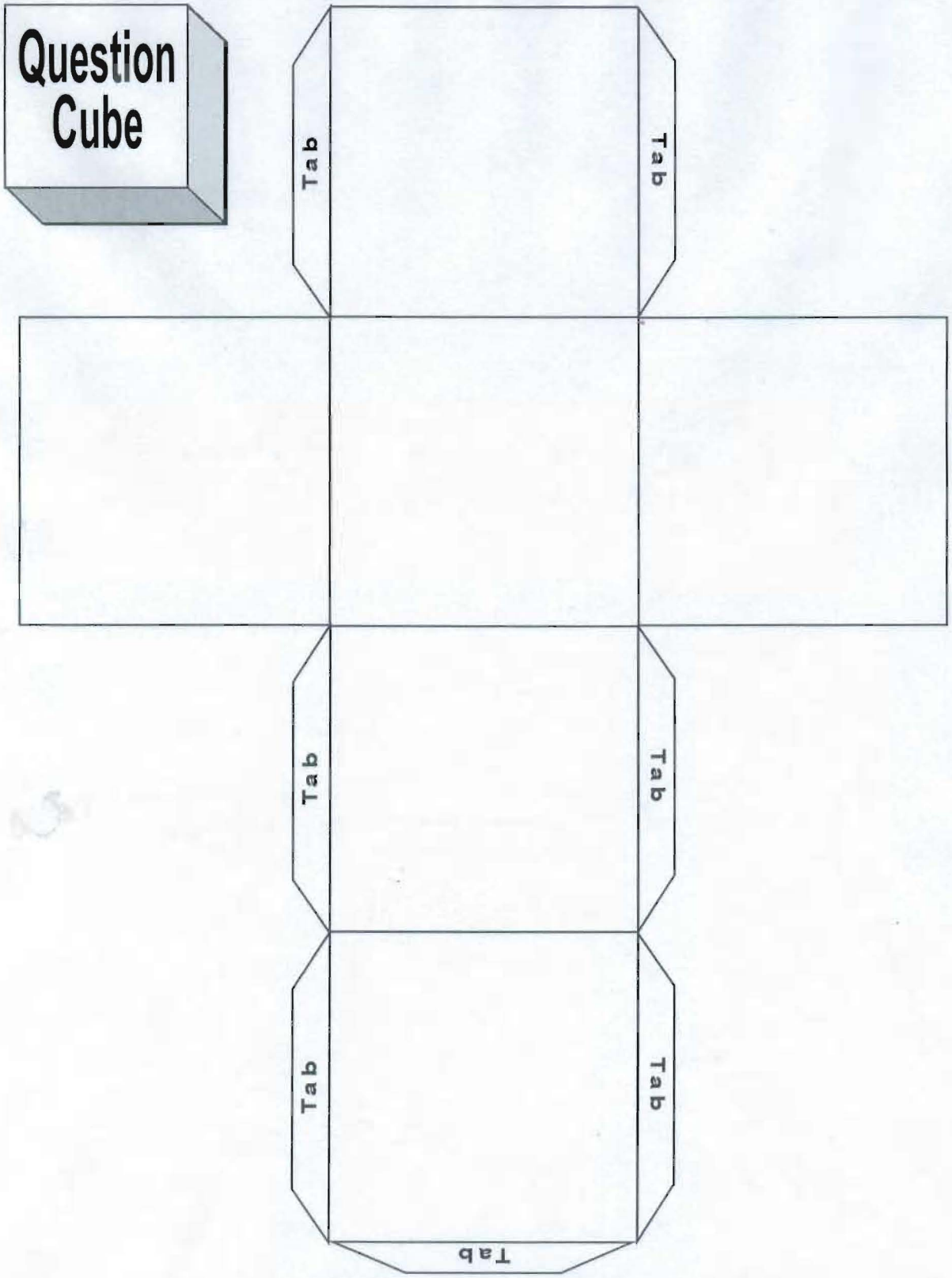


Question Cube Activities

- Students work in groups. When it is their turn, each group tosses a cube that is pre-made by the teacher. Each group then has two or three minutes to prepare and share with the class what they think is the best response to the prompt on the top of the cube.
- Each group of students is given a different colored cube appropriate to their readiness level. Each group works together to pose one question about the topic or story for each side of the cube. Later, groups exchange questions and answer each other's questions.
- Individuals are given different-colored cubes according to their readiness. Each student then responds to the prompts on the cube using the specific content of a story.
- Individuals or pairs of students are provided a blank copy of the cube pattern. On each surface of the cube, they create and write a question to ask others about the topic or story.

5.
Independent High-Level Thinking and Inquiry Activities

Many advanced and gifted students would benefit from opportunities to use the thinking-skills checklist, Bloom's Taxonomy, and the four types of inquiry questions in small, advanced groups or independently. After analyzing student readiness and the demands of the learning task, teachers select and provide students with a list of three or more appropriate thinking prompts that have been modeled with the children. These students then use those prompts to incorporate their own variations and develop more challenging lessons and products.



Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers.* Austin: Texas Education Agency.

Independent and Guided Studies.

Students use the prompts to plan and organize research projects. Independent and guided studies are richer and result in more sophisticated products when children incorporate high-level thinking prompts and questions. Specific questions also guide them toward authentic texts and genres which best serve as resources.

Research Question Models

Children post their research questions in the classroom, hall, or library as models for other students. Students can compare ideas for unanswered questions they might incorporate into their projects.

Discussion Questions

Students develop questions to pose to other advanced classmates during small group discussions of the current topic of study. Many students ponder a topic's depth of possibilities more seriously when they are preparing questions that others will be challenged to answer.

Interviews

Advanced and gifted learners compose questions with which to interview others who have expertise in the student's topic of interest. Interviewing "experts" (both adults and other students) extends students' learning depth and provides new information to ponder. High-level thinking enables students to avoid interview questions that are typically answered with only a word or two and instead focus on questions that provoke more insight and information. (Children can tape record their interviews to avoid handwriting limitations.)

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Book list--Critical thinking. Eau Claire Area School District (ECASD) Curriculum & Instruction. <www.ecasd.k12.wi.us/departments/ci/critical_thinking/criticalthinkingbib.htm>

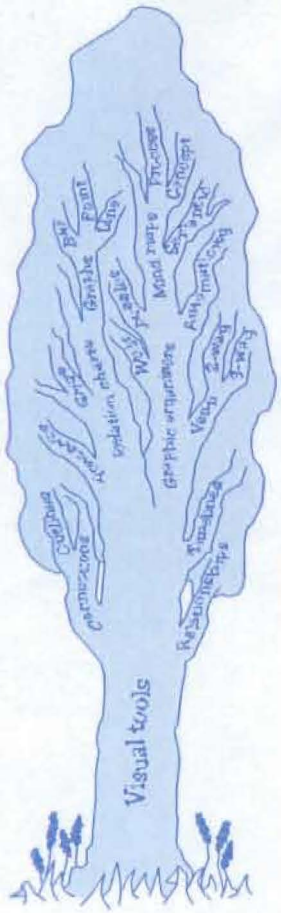
Combining brain power and the internet. WebQuest at San Diego State University. <http://webquest.sdsu.edu/webquest.html>

How to use thinking skills to differentiate curricula for gifted and highly creative students. OCLC. <http://libsnap.dom.edu/Reserves/EDU571Johnson_How.htm>

VISUAL TOOLS FOR INDIVIDUALS OR GROUPS

Strategy Introduction

Visual tools are symbols graphically linked by mental associations to create a pattern of information and a form of knowledge about an idea. These linear or nonlinear forms are constructed by individual or collaborative thinkers on paper, board, or computer screen (Clarke, 1991).



Educators typically associate visual tools with graphic organizers. However, the concept of visual tools extends beyond just graphically organizing data and enables learners to generate, analyze, synthesize, and evaluate information (Hyerle, 2000, 1996). These dynamic and constructive tools take multiple forms, such as brainstorming webs, thinking-process maps, semantic maps, concept maps, story maps, charts, time lines, graphs, Venn diagrams and outlines, helping students predict, explore, and expand concepts.

Reading Recommendations for Advanced Learners

Visual tools are applicable to the following recommendations on page three: 1, 4, 5, 6, 7, 8, 9, and 10.

The Texas State Plan for the Education of Gifted/Talented Students

Several statements in the Texas State Plan (2000) support the use of visual tools for gifted students.

- School districts assure an array of learning opportunities that are commensurate with the abilities of gifted/talented students... (2.1A; 3.1A)

- Curriculum for gifted/talented students provides options in intellectual, creative, or artistic areas... (3.1E)
- Students at all grade levels are involved...in the development of sophisticated products and/or performances that are targeted to an audience outside the classroom. (3.2R)

Overview of Research

Researchers document the benefits of using visual tools to foster active learning.

- Visual tools are especially relevant for advanced or gifted learners who characteristically think in relationships, prefer to organize information in unique ways, and often have a depth of understanding beyond that of their age-mates (Kingore, 2001).
- Graphic tools enable gifted visual-spatial learners to synthesize and demonstrate their intuitive grasp of complex systems (Silverman, 2002).
- Young children high in spatial intelligence thrive on exploring abstract concepts and problem solving by expressing themselves visually or graphically (Gardner, 1993).
- Reading comprehension is enhanced through the use of graphic and semantic organizers where readers make graphic representation of the written material (NRP, 2000).

Applications

1.
Values of Visual Tools

Visual tools are an appropriate strategy for differentiation, not from the application of the blank structures themselves but from the perspective of the complex content and productive thinking processes that a gifted student applies to complete the structures. As a differentiation strategy, visual tools:

- Emphasize advanced, abstract, or complex material rather than the simple acquisition of knowledge.
- Provide an effective assessment device for preinstruction, formative, and summative evaluation.

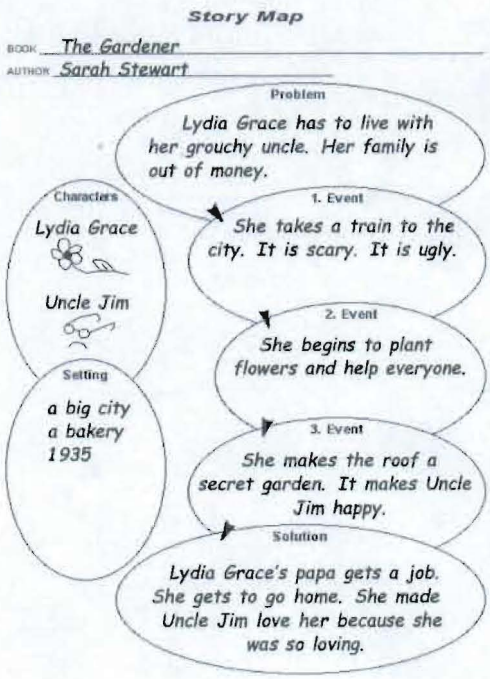
- Can be used independently by individuals or small groups while the teacher is directing instruction with others once students experience modeling and successful applications with a specific tool.
- Are particularly applicable for young learners with limited writing skills (whose hands tire before their heads) because extensive analysis and synthesis can be expressed in pictures, symbols, or a few words.
- Can be used repeatedly during the school year with different books or topics of study.
- Require a minimum of preparation time.
- Prompt many educators to engage gifted students in constructing their own visual tools. More advanced levels of learning are demonstrated when children produce original graphics and visualizations to convey their ideas and relationships.

2.

Reading Connections

Visual tools have a myriad of applications in a reading program. Visual tools are effective when:

- Mapping a book or story.
- Predicting and summarizing.
- Developing individual text interpretations.
- Analyzing cause and effect relationships.
- Webbing character traits and actions.
- Developing vocabulary connections and extensions.
- Analyzing story structure and text patterns.
- Organizing and categorizing.
- Synthesizing sequences.
- Synthesizing main ideas and themes.
- Comparing and contrasting characters, books, or themes.
- Contrasting fact and fantasy.



When using visual tools with a small group of advanced students in a reading program, discussion emerges as an integral, continual feature of the learning process. Students discuss their ideas, explain their rationales, clarify uncertainties, and enhance their understanding through interaction with other advanced students and/or by thoughtful questions posed by the teacher.

3.

Assessment and Evaluation Connections

To ensure appropriately-challenging learning experiences and products for advanced learners, consider the following suggestions when these students are using visual tools independently or with direct teacher instruction.

1. As students use visual tools, challenge them to demonstrate the depth of their information about a topic rather than allow them to simply list facts.
2. Require an oral or written reflection from each student elaborating and explaining the components on the graphic.
3. Use products generated from learning experiences with visual tools to include in portfolios as documentations of the student's mastery of specific learning objectives or skills.
4. Enhance analysis and discussion by providing a completed version of a visual tool with errors on it. In small groups or as individuals, students correct and explain the errors.
5. Develop rubrics to establish a standard that students and teachers can use to evaluate the content and value of completed visual tools. Include levels of proficiency for each criterion, and share the completed rubric with students before they begin the learning task to clearly communicate expectations. The attributes that follow are suggestions for criteria to incorporate in a rubric for visual tools (Kingore, 1999). To increase the depth of responses rather than foster a fill-in-the-blank attitude, implement these attributes as students construct visual tools.

Attributes of Effective Graphic Products

- Content relationships are evident.
- Ideas are clearly developed and organized.
- High-level thinking is apparent.
- Integrated skills are accurately applied.
- The response exceeds typical or simple information.
- The response includes an appropriate degree of elaboration to clearly inform.
- In-depth content is incorporated.
- Complex ideas and concepts are evident.

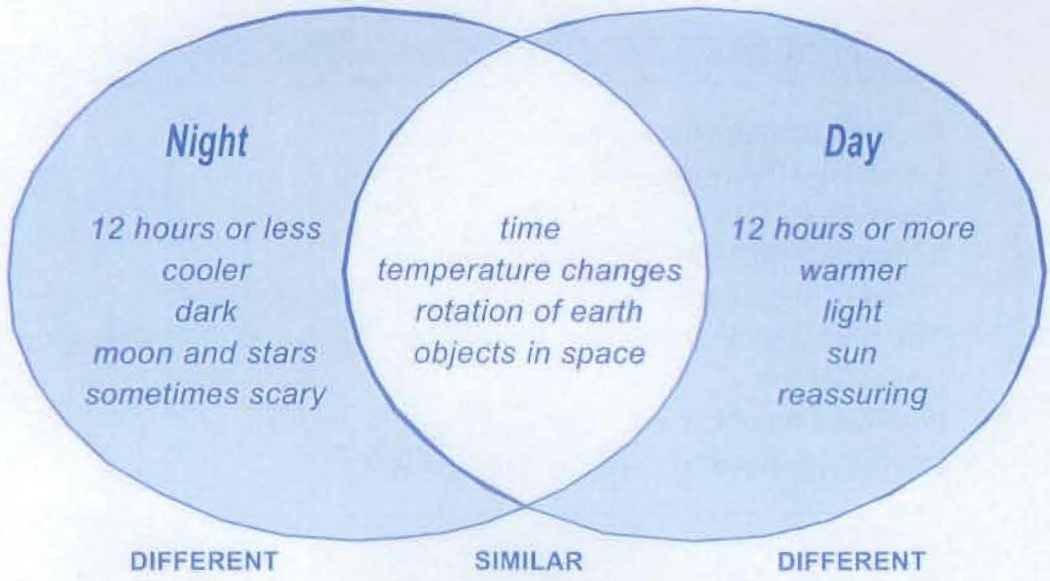
4.
Visually Challenging Books

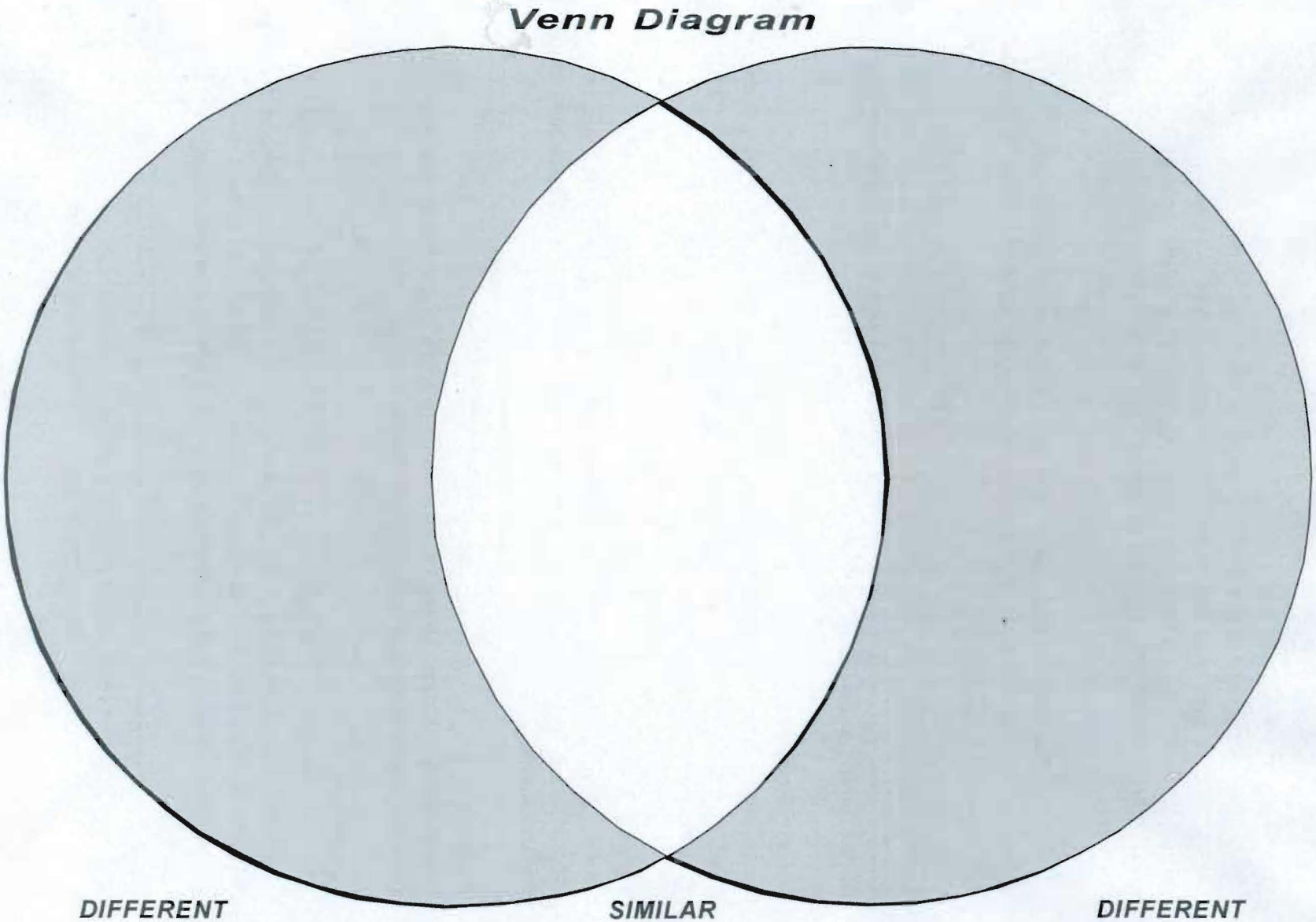
Some books themselves are visual tools to ignite thinking. Visually challenging books rely on the reader's sophisticated visual intelligence to be understood or enjoyed. David Macaulay's *Black and White* intermingles four independent but related stories on each page that require the primary reader to recognize the transformation as the stories evolve into one another. David Wiesner's *Sector 7* is a wordless book that demands the reader's interpretation to develop a plot with complex character emotions. Wiesner's *The Three Pigs* incorporates visual references to animation and several literary sources to weave a story on multiple levels of fantasy. Many primary-aged readers do not enjoy these works because "they don't get it". Gifted spatial readers find these books intriguing and delight in analyzing the visual analogies incorporated within the pages.

5.
Examples of Graphics

Venn Diagrams

A Venn Diagram compares how things are different and how they are similar. On the classic Venn with two overlapping ovals such as the one below, information is organized by listing in the ovals the attributes of each item; the attributes common to both items are listed in the overlapping area.





Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers*. Austin: Texas Education Agency.

Vary the process for completing a Venn diagram. In most primary classes, the teacher completes the Venn using ideas and suggestions from the students. After modeling, however, have small groups of students complete Venn diagrams by themselves. A pair or small group of advanced readers working together can focus on text structure as they read or analyze more complex concepts and how they are related. Make the diagram large enough to accommodate young children's handwriting.

Varying the form of the Venn increases visual appeal and enables it to be used frequently without becoming mundane. Several variations are suggested as possibilities (Kingore, 1999).

- Vertical Venn
  Use the Venn vertically instead of horizontally to provide a wider area to encourage more legible handwriting from young hands.

- Three-dimensional Venn
  Large, three-dimensional Venn diagrams are effective when a small group works together. Use concrete items to manipulate or provide large index cards for children to write on and categorize.

- Yarn Venn
  Use thick yarn to form large, overlapping circles on carpet or felt boards. The yarn adheres to the carpet or felt surfaces and allows the comparison of large manipulatives.

- Hula Venn
  Two hula hoops can overlap on the floor to form large manipulative areas for categorizing and comparing concrete items.

Story Map

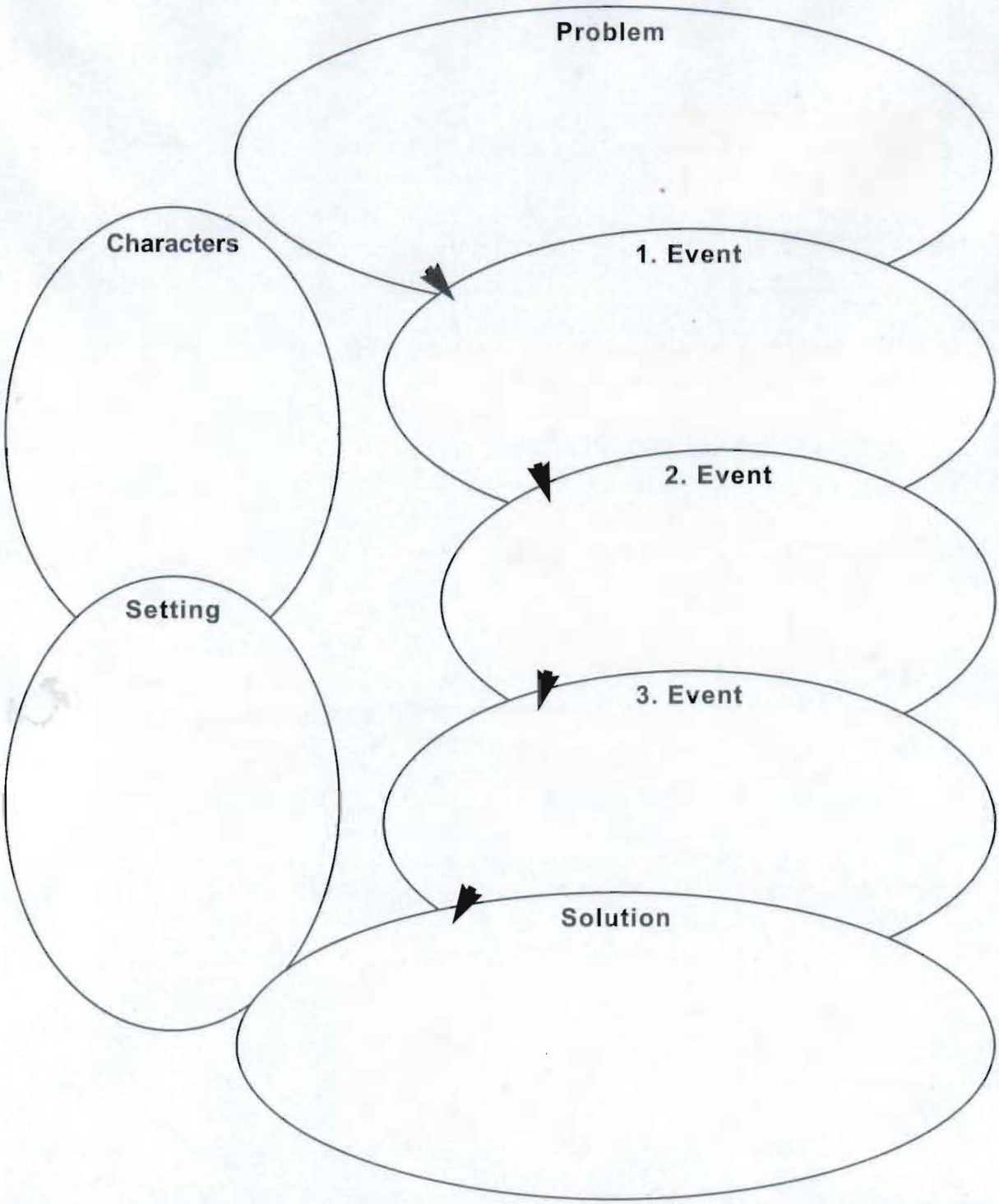
A story map categorizes the key elements of a story. One example is shared on page 71. A story map has several applications with young readers.

- The teacher models completing the map as children in a group suggest content to include.
- Enlarge the blank tool to poster-size and laminate it so it can be repeatedly used.
- Have a flexible group of advanced and gifted students complete a story map together. Encourage them to show depth and complexity in their interpretation of the story.

Story Map

BOOK _____

AUTHOR _____



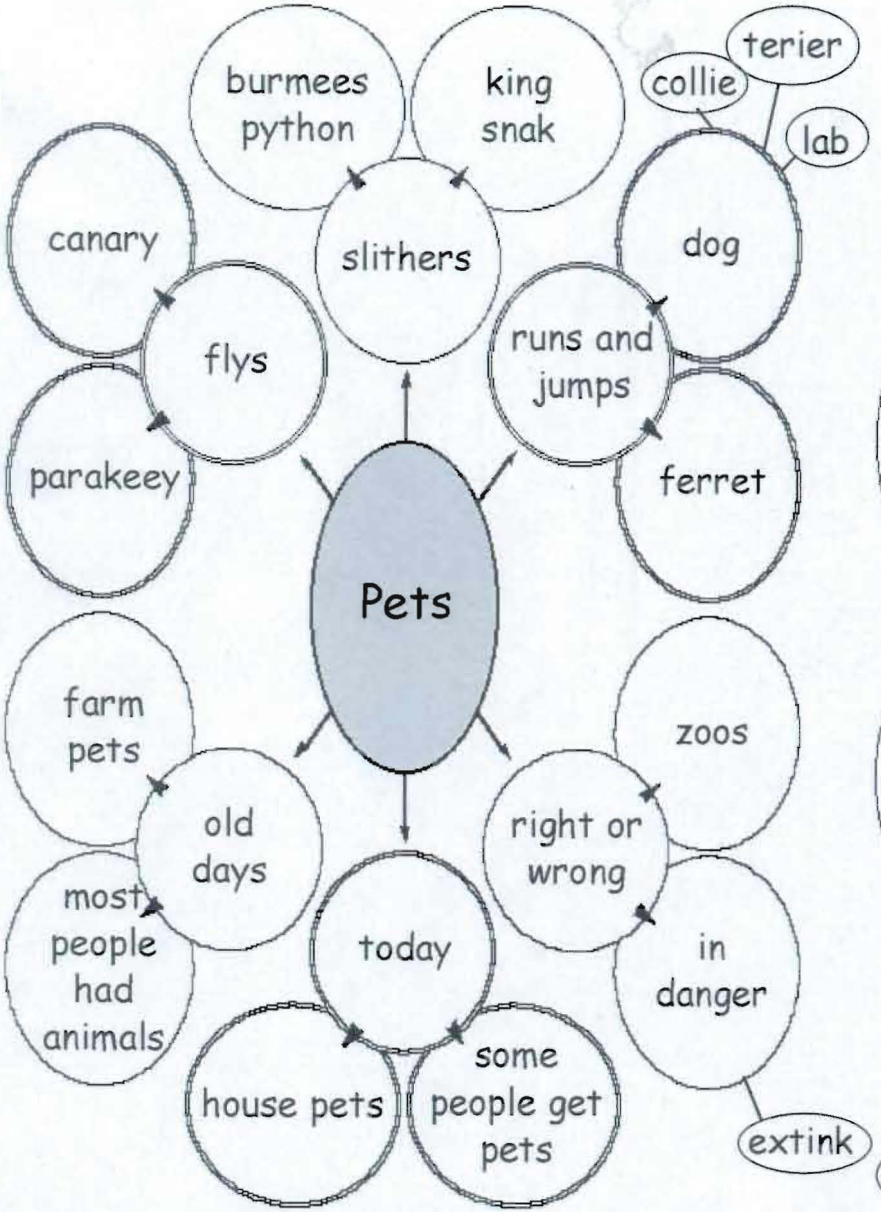
Kingore, B., Ed. (2002). *Reading Strategies for Advanced Primary Readers*. Austin: Texas Education Agency.

- Ask individual advanced and gifted students to each complete a story map. Then, group those students to compare and contrast their different interpretations.
- Challenge gifted students to incorporate symbols on their maps to represent the literary elements and the events. Invite them to explain their symbols.

Concept Map

A concept or semantic map enables students to visually represent the relationships within a topic, story, or concept. The conceptual pattern shared here begins with a central idea or category and is then surrounded by related or supporting information. Both a more simple and an expanded form are provided for students' responses. Teachers might begin with simpler forms to model the process. The simple forms may also prove more appropriate for some young learners. However, many advanced readers should work with expanded forms to encourage them to embellish their ideas and then move toward creating their own visual tools.

The examples provided here were completed by first grade students--one identified as a regular learner and one identified as a gifted learner in reading. Notice that both children were successful, but the gifted learner demonstrates depth of information and relationships. She also approaches the more abstract idea of ethics involved in the topic.



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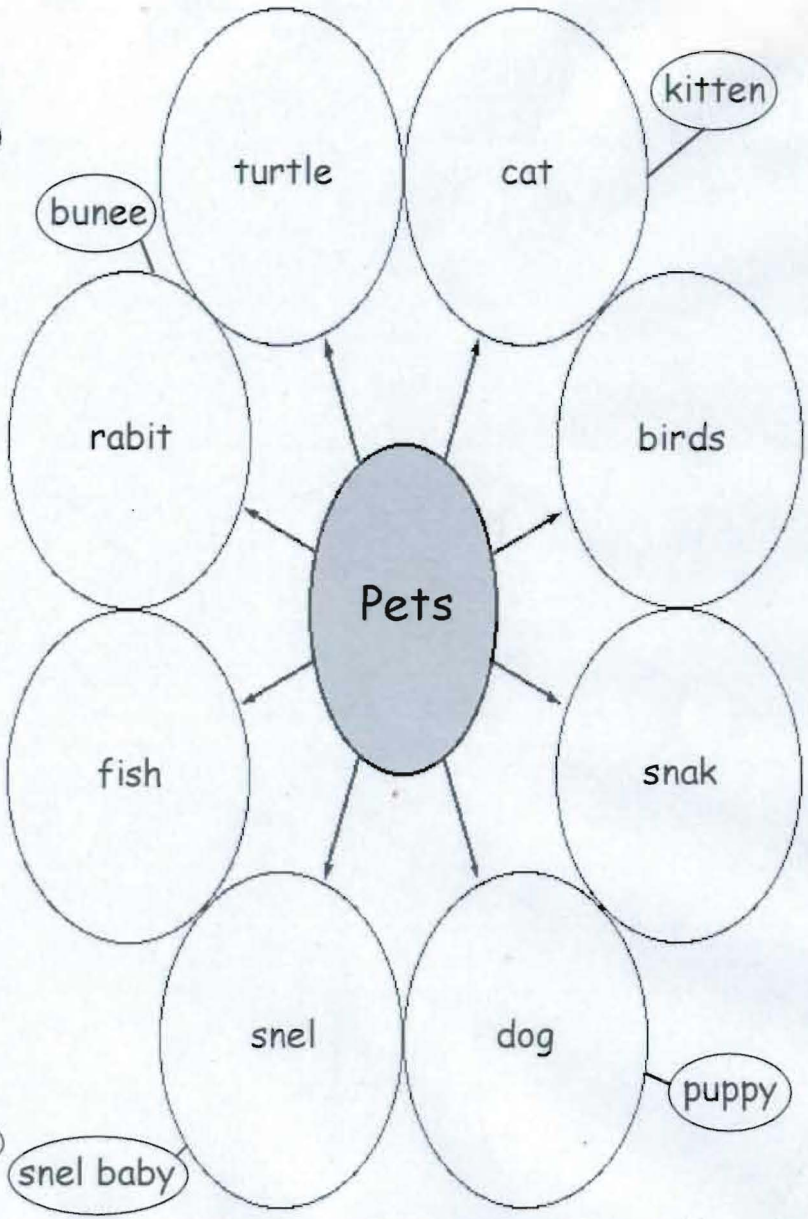

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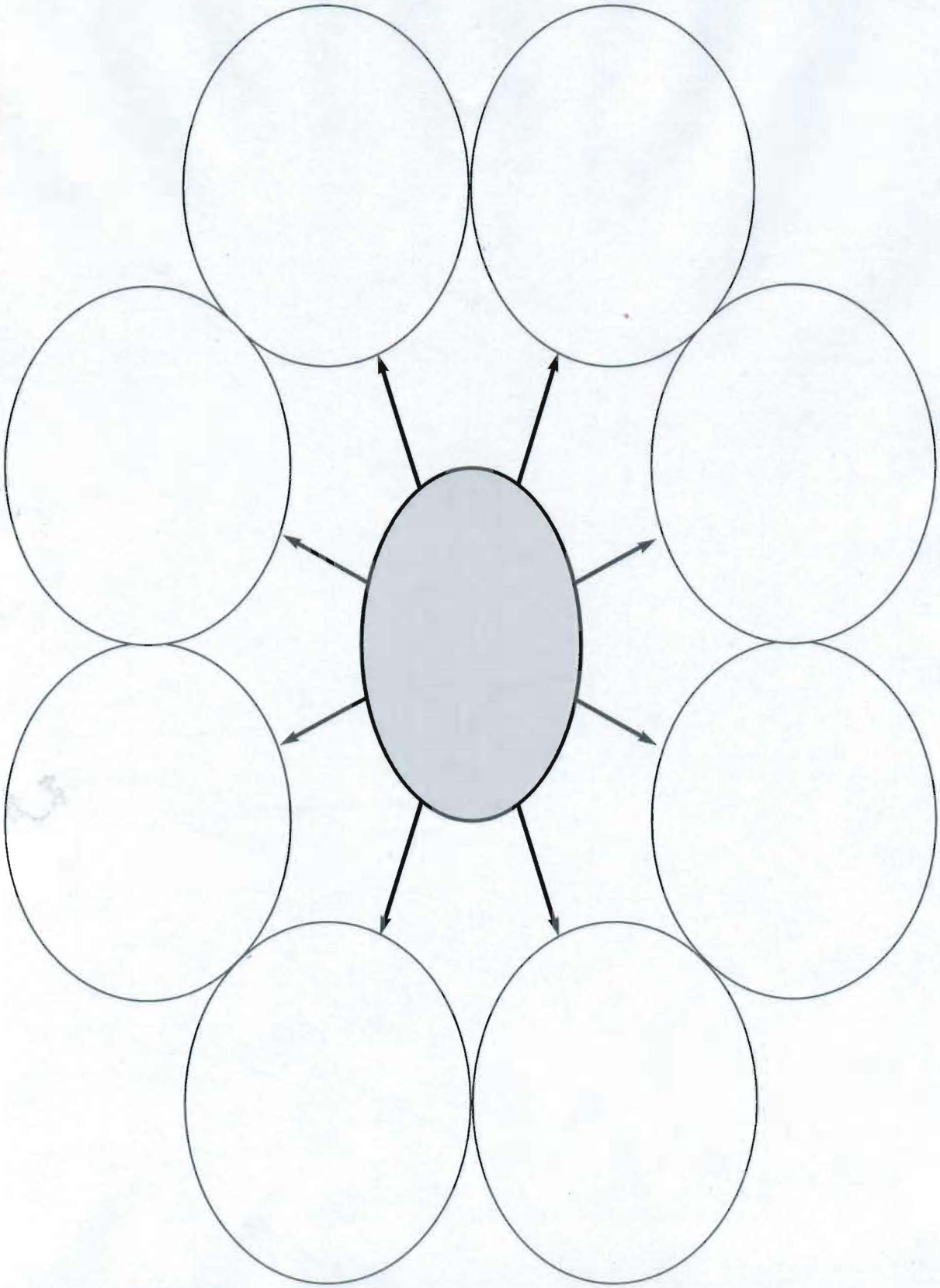

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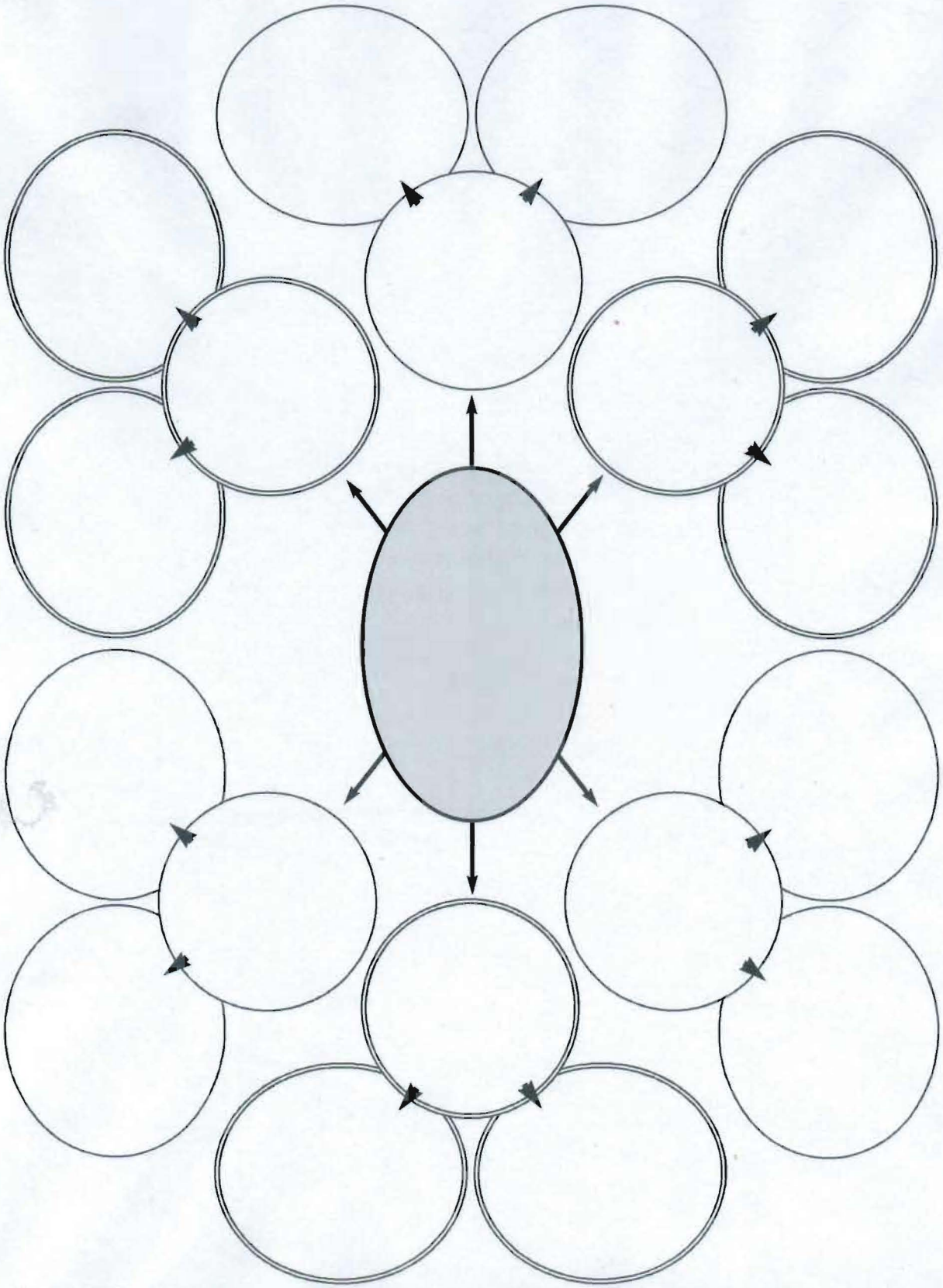

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VOCABULARY AND WORD PLAY

Strategy Introduction

Vocabulary is important because readers must know what most of the words mean before they can understand what they are reading. In order to help advanced and gifted readers understand more sophisticated information and concepts, these students need to expand their repertories of facilely read and understood words.

Advanced and gifted children learn at a much faster pace than their age-level peers. As a result, vocabulary study must be differentiated for these students. Following appropriate preassessments to determine a student's instructional level, the teacher plans developmentally appropriate vocabulary activities to challenge the gifted learner. These readers should be provided multiple avenues to demonstrate their vocabulary comprehension through verbal explanations, written responses, graphics and illustrations, and other open-ended products. Instructional strategies for both indirect learning and direct teaching of vocabulary are presented in this section in order for teachers to guide students' enlargement of their reading vocabularies and expand their reading proficiency.

Reading Recommendations for Advanced Learners

Vocabulary and word play are applicable to the following reading recommendations on page three: 3, 4, 6, 7, 9

Texas State Plan for the Education of Gifted/Talented Students

Several statements in the Texas State Plan (2000) support incorporating vocabulary development and word play for gifted students.

- School districts assure an array of learning opportunities that are commensurate with the abilities of gifted/talented students... (2.1A; 3.1A; 19 TAC §89.3)
- Services for gifted/talented students are comprehensive, structured, sequenced, and appropriately challenging, including options in the four (4) core academic areas... (2.1.1E)
- Program options enable gifted/talented students to work together as a group, work with other students, and work independently... (2.2A; 19 TAC §89.3(1))
- Opportunities are provided for students to pursue areas of interest in selected disciplines through guided and independent research. (3.1.1R)
- Opportunities are provided to accelerate in areas of student strengths. (3.3A; 19 TAC §89.3(4))

Overview of Research

The research on vocabulary instruction reveals several factors to guide vocabulary development for advanced and gifted readers.

- Intense and effective vocabulary study must be a daily component of an effective literacy program (Adams, 1990; Clay, 1993).
- A child's mastery of oral language is one of the most critical factors in a child's success in reading. Wide-ranging knowledge of the world and the ability to express that knowledge through language becomes critical in advanced reading development (Jackson & Roller, 1993).
- Although most vocabulary is learned indirectly, some vocabulary must be taught directly. Students learn vocabulary directly when they are explicitly taught words and word-learning strategies. Direct vocabulary instruction aids reading comprehension (CIERA, 2001).
- Indirect learning of vocabulary is encouraged in two ways: first, by reading aloud to students and discussing the selection together, and secondly, by inviting students to read extensively on their own (CIERA, 2001).
- One element of curricula depth and complexity is a strong underpinning in the language of the discipline (Kaplan & Cannon, 2000).
- The difficulty level of vocabulary is much greater in the reading texts of the past. Current texts use simple vocabulary that provides little or no challenge for advanced readers (Chall & Conard, 1991).
- Gifted children need to encounter and use increasingly difficult vocabulary and concepts (Clark, 2002).

- Verbal talent develops as a result of challenge, which is an encounter with something beyond one's capability (Thompson, (2001).

Applications

1.

Word Analysis Chart

A word analysis chart is a graphic organizer adapted from the linguistic study of semantic features analysis (Pittelman,1991). Its purpose is to encourage students to analyze and compare the significant characteristics of several words. It also serves as an effective vehicle to revisit word analysis skills and check for understanding. After modeling and successful learning experiences working with the graphic in small groups of advanced learners, some gifted readers are able to complete the analysis chart independently.

- Allow students to place a question mark in any box for which they are uncertain.
- Discuss the similarities, differences, and question marks recorded on completed graphics.
- Challenge students to expand the graphic with different characteristics by which to compare words.
- Encourage individuals or pairs of readers to select interesting words to analyze from the book they are reading.

Analysis Word Chart

SOURCE OF THE WORDS Mouse and the Motorcycle AUTHOR Beverly Cleary

	CHARACTERISTICS				
WORDS	Part of speech	Synonym	Number of syllables	Long vowels	Suffix
momentum	noun	?	3	o	?
remorseful	adjective	sorry	3	e	ful
muttered	verb	mumbled	2	none	ed
astounded	verb	amazed	3	none	ed
incredulous	adjective	disbelieving	4	u	ous

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Analysis Word Chart

SOURCE OF THE WORDS _____ AUTHOR _____

WORDS	CHARACTERISTICS				

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2.
Word Sorts

Word sorts is an activity where students group words by categories. Although all students should do word sorts, advanced and gifted students should complete more advanced examples, such as the following.

- Prefix/Suffix
  Students sort a variety of words by affixes (prefixes and suffixes), such as *predictable, preempt*, and *preface*. In addition, students use the affixes to create and define new words, such as *pre-eat (when you have to have a snack before dinner)*.
- Homophones
  Students sort words by homophones, such as *bear/bare, sea/see/si,* and *there/their/they're*. Invite them to write and illustrate sentences using homophone pairs or trios.
- Palindromes
  Students identify palindromes and words that are not palindromes. Palindromes are words or phrases spelled the same forward and backward, such as *dad, mom*, and *Madam, I'm Adam*. Encourage children to consult books and web sites to develop a collection of palindromes.
- Euphemisms
  As a fun comprehension task, students sort euphemisms into matched pairs. Euphemisms are more gentle ways of saying things, such as *They let him go* instead of *He was fired*.

3.
Vocabulary Notebooks

Word study notebooks are usually organized around orthographic features, such as simple spelling patterns. Advanced and gifted students should study more advanced orthographic features, such as word stems. Students may use their notebooks to record word sorts, interesting new words to add to their vocabulary, and origins of words. In addition, they use vocabulary notebooks to record and question the connotative and denotative meaning of words encountered in the current text they are reading. For example, a student might write: *"Innuendo" has negative connotations.*

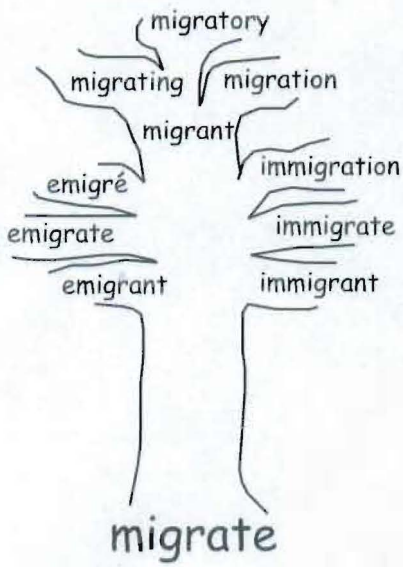
4.
Study of Word Stems

Although learning words in context is an important practice, gifted students also need more academic vocabulary study targeted toward the Latin-based language that pervades professional life (Thompson (2001). About 60% of all English words have Greek and Latin stems (CIERA, 2001). Thus, learning word stems is more powerful than learning one word at a time. When children learn *bio*, they have learned a meaningful connection to *biographer*, *biologist*, *biofeedback*, *biosphere* and dozens of other words that involve life or living organisms. Many gifted readers could begin to study applicable word stems in first or second grade.

Whereas thousands of English words are actually two or three stems in a row, learning stems means that gifted learners can automatically spell thousands of words. Consider, for example, how perfectly these words break into stems: *bi•cycle*, *thermo•meter, geo•graphy,* and *auto•graph.* Furthermore, when spelling by stems, each stem has meaning, so spelling makes more sense to gifted minds.

The study of word stems could be completed in centers, in pairs, or independently in vocabulary notebooks. Visual students enjoy organizing their studies of word stems on Word Trees.

5.
Word Trees



Word Trees can be used with young advanced and gifted readers to stimulate vocabulary development. Using an overhead pen and a laminated poster board of a tree with branches, students write a base word at the bottom of the tree. Next, they brainstorm and research as many words as possible that contain the base word. After completing the word tree, students can illustrate some words and/or create a story using many of the words from the word tree.

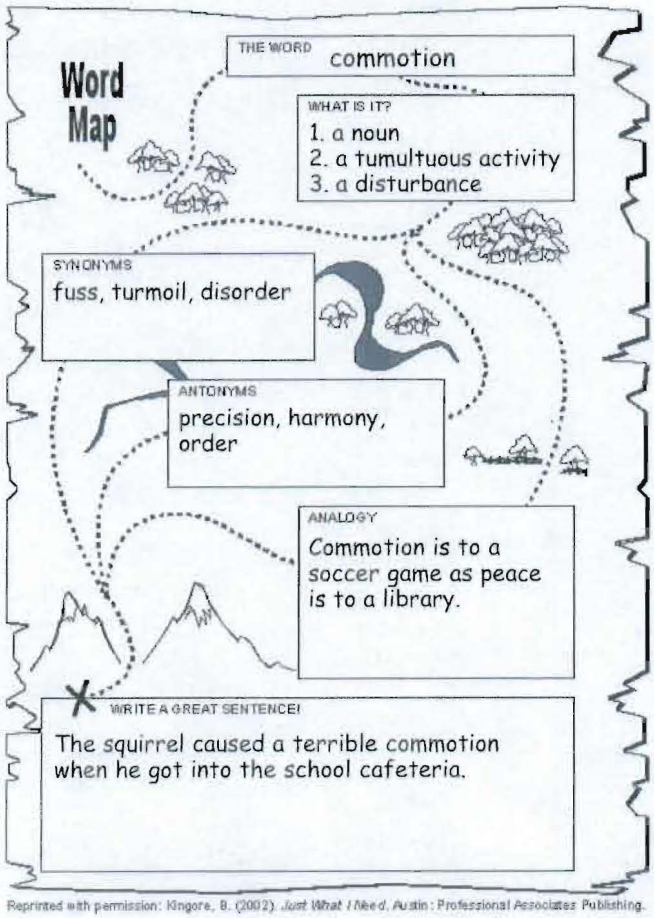
6.
Micropoems

Thompson (2001) wants to excite gifted readers with the micropoetry of words. Ordinary dictionary definitions are only the surface of words. Interpreting the stems that compose the word enables the reader to see that some of humanity's best insights are captured in the words we use.

> An example is the word *respect,* which is an ordinary word that most elementary students could define, but when we look at the stems in the word, we see *re* and *spect*. Suddenly, we realize the micropoetry of the word; at the moment that we come to respect someone, we find ourselves *looking* at him or her *again*, in a new way (Thompson, 2001, 9).

7.
Word Map

A word map is ideal for gifted readers to organize their in-depth study of words. Word maps help these students define and refine their understanding of the multiple applications of a word. Word maps can be completed individually, but it is an effective activity to work on in pairs to encourage extensive conversations about the word.



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Word Map

THE WORD

WHAT IS IT?

SYNONYMS

ANTONYMS

ANALOGY

WRITE A GREAT SENTENCE!

8.
Figurative Language

Concise figurative language is the ideal playground for the impressive array of vocabulary and syntax strategies exhibited by young gifted readers (Abilock, 1999). Poetry and books rich in figurative language challenge gifted readers to elicit definitions from context and by analogy to other root words. Figurative language also sharpens advanced learners' ability to deduce meaning from word order.

Young children need time to explore relationships when developing figurative language skills. Providing analogy formats and a list of words, ask students to develop a relationship between two of the words, and explain their thinking. Consider the following list of words as a beginning example.

words, sign, cloud, pencil, bolt, toe, TV, potato, barn, bird, carrot, tree, house, car, chalk, book, doll, truck, rock, fish, love, joy, kindness, smile, bottle, light

_____ is to _____ as _____ is to _____.	_____ is like _____ because _____.
A bird is to a birdhouse as a car is to a garage. *A bolt is to a TV as words are to a book.* *Love is to hate as a smile is to a frown.*	*A doll is like a fish because they both need someone to take care of and love them.* *A carrot is like a book because they both help you grow in healthy ways.*

9.
Materials

Certain classroom resources support vocabulary study and facilitate advanced and gifted students working with the teacher or with less teacher direction in small groups or independently.

- Pocket charts and sentence strips
- Wide variety of texts and nonfiction books above grade level
- Individual magnetic boards, write on/wipe off boards, and chalk boards for letter, word, and vocabulary work
- A set of four to eight thesauruses so several children or small groups can simultaneously engage in vocabulary studies
- Dictionaries and glossaries appropriate for young children yet with sufficiently rich word power to engage gifted readers. (Some beginning dictionaries are too simple to allow gifted children to encounter and use increasingly difficult vocabulary.)

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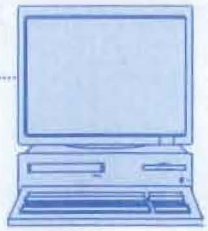

Grammar hotline. Grammar Lady. <www.grammarlady.com/hotline.html>

Pun of the Day, funny joke of the day, free archive of funny one liners, and funny people. Pun of the Day. <www.punoftheday.com>

Vocabulary drill for kids. CANITech. <www.edu4kids.com/lang>

Vocabulary, free word puzzles, and activities. Vocabulary University. <www.vocabulary.com>

The wordplay website. Fun-with-Words. <www.fun-with-words.com>

REFLECTIONS

Be not afraid of going slowly;
be afraid only of standing still.
--Anonymous

The collection of strategies and activities in this publication is a work in progress. Teachers are encouraged to use these ideas to prompt additional applications to differentiate reading instruction for advanced readers. When you find an effective differentiation strategy or activity, share it with two or three other teachers. Let's network successes.

Expand your understanding of advanced and gifted readers. Challenge yourself to continue consulting articles, books, and web sites to remain current in the research and best practices for instructing highly-able learners. Several web sites at the end of this section provide valuable updates that are more current than some publications.

Discuss differentiation issues with your colleagues. Support staff development opportunities that enable your faculty to become more confident in adapting curriculum and instruction to be responsive to all students' needs--including advanced and gifted learners.

Help parents understand the use of differentiation strategies for their gifted child. Parents need information. Your insights are invaluable to them and ensure them of your concern for their child's optimum learning and development. Consider placing a few brief articles about gifted children and their learning needs in a folder that you can share with parents seeking information. Well-informed parents are in a much better position to support your instructional plan for their child.

Providing an Appropriately Challenging Reading Instruction

- All children need a teacher's instruction and interaction. Without teacher feedback and guidance, reading is less effective (National Reading Panel, 2000).
- To grow in reading proficiency, children require small-group instruction at their ability/readiness level (National Reading Panel, 2000).
- Children continue to learn and grow toward their potentials when encouraged to stretch through tasks that are just a little too hard for them.
- Exempt gifted children from work they already know, and guide their continued progress with alternatives that promote high levels of complexity.
- Prompt more advanced reading and research investigations by supplying complex, in-depth information through multiple texts, supplementary materials, and technology.
- Use inquiry that requires children to incorporate high-level thinking at a greater level of complexity.
- Encourage students' development of expertise by inviting their in-depth pursuit of topics of personal interest.
- Motivate children to establish personal goals and criteria for success in their work.
- Guide students to develop responsibility and independence by means of self-assessing and maintaining records of their own progress rather than only comparing their work with less-advanced peers.

A parting thought...

> Only when students work at appropriate challenge levels do they develop the essential habits of persistence, curiosity, and willingness to take intellectual risks. To ask less of advanced learners is to predict less productive and engaged adult lives (Tomlinson, 2001, 5).

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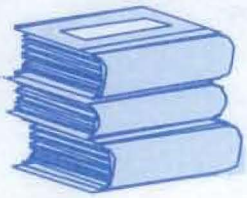

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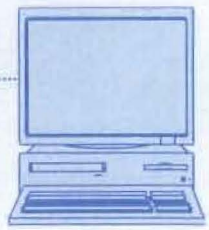

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ERIC Reading, English, and Communication. Education Resource Information Center (ERIC). <www.indiana.edu/~eric_rec>

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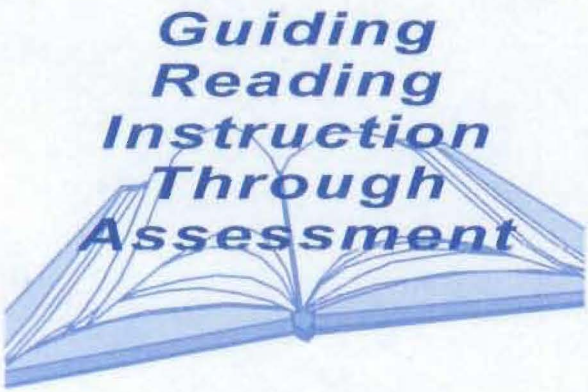
US Department of Education. <www.ed.gov>

APPENDIX



Dr. Shirley V. Dickson

Reading instruction for advanced learners balances students' strengths and needs, breadth and depth of content, and pace of instruction. To avoid haphazard instruction for advanced learners, assessment before, during, and following instruction is critical. Assessment provides students an opportunity to demonstrate what they know and guides teachers' decisions regarding what to teach, what to review, and the most appropriate pace of instruction.

Overview of Research

Preassessing student knowledge guides appropriate instructional decisions for advanced learners (Assouline, 1997). Information from the preassessment prevents teachers from teaching gifted students what they already know and from assuming students have all prerequisite skills (Winebrenner, 2001). For example, a student may read above grade level but lack knowledge of some letter-sound correspondences such as /au/. The teacher may temporarily group this student with others learning /au/ as a word analysis strategy. Students who complete the pretest successfully require no more work in that area.

In addition to being administered at the beginning of the school year, preassessments should be administered throughout instruction. They must include an analysis of strategies and skill levels in word recognition, fluency, and comprehension. Preassessments can take the form of checklists, oral reading fluency measures, criterion-referenced measures, and diagnostic activities.

To illustrate the use of pretests, imagine an advanced reader in grade one. The student reads at a grade-seven level. However, the student does not understand the vocabulary or fully comprehend the text. When reading grade-four text, the student understands the vocabulary and recalls and summarizes but does not infer. Based on this information from the pretests, the teacher may decide to use grade four reading materials (e.g., literature, expository text) for instruction and include instruction in vocabulary development and/or comprehension strategies (Assouline, 1997).

Just as preassessment guides instruction, so too does progress monitoring or ongoing assessment. Ongoing assessment measures a student's incremental progress. Information

from ongoing assessment helps teachers to determine the pace of instruction for advanced learners and maintain instruction in appropriate content (Smutny, 2000). For example, advanced learners usually require less practice in new knowledge than typical learners. Through progress monitoring, the teacher can judge when the advanced learner no longer needs to be part of an instructional group based on needed skills or no longer requires practice in a skill such as summarizing or drawing conclusions. Ongoing assessments include portfolios, class assignments, observations, informal interviews, and checklists.

Finally, assessments at the end of a unit of study provide an opportunity for learners to demonstrate what they have learned. Additionally, unit assessments may reveal a need of the advanced learner for greater differentiation of instruction, higher level work, and/or more comprehensive planning for future instruction (Howley, Howley, & Pendarvis, 1986). The assessment needs to allow for the differences of the advanced learners in understanding, achievement, and creativity (Smutny, 2000). If the advanced learner scores at the top of the scale on the measure, the teacher gains little information about the learning of the advanced learner, especially if the student also scored at the top of the scale on the pretest (VanTassel-Baska, 1992).

Applications

Teachers of advanced learners need multiple approaches to assessment before, during, and following instruction. Assessments should cover a broad range of skills within the following areas:

- Phonemic awareness and phonics,
- Fluency,
- Comprehension,
- Vocabulary, and
- Spelling.

Teachers may find appropriate, ready-made, sample assessments in advanced-level classroom basals. Informal reading inventories that extend through high-school levels may be the most appropriate for use with primary gifted students. Ganske (2000) and Johns (1997) are two sources of reading assessments. Teachers of advanced primary readers can develop assessments based on their classroom reading curriculum. If teachers develop their own assessments, they should have a specialist in gifted education, another teacher with training in gifted education, or a reading specialist with a background in gifted education critique the measure before administering it to primary gifted students.

1. Phonemic Awareness and Phonics

The National Reading Panel (2000) concluded that phonemic awareness and phonics instruction produce significant benefits for primary students. However, they cautioned that phonics teaching is a means to an end. Children appropriately applying phonics skills in the reading process do not require the same level and intensity of phonics instruction provided to most children. "In light of this, teachers need to be flexible in their phonics instruction in order to adapt it to individual students' needs" (NRP, 2000, 11).

2. Fluency

Fluent readers read orally with speed, accuracy, and appropriate expression. Oral reading fluency is sensitive to student growth and correlates strongly with reading comprehension (NRP, 2000). Directions for creating and administering oral reading fluency measures are in the First, Second, and Third Grade Teacher Reading Academy notebooks. Monitoring student progress in fluency is useful in evaluating instructional needs and setting instructional goals (CIERA, 2001).

Advanced readers as well as those experiencing reading difficulties require guidance from teachers (NRP, 2000). Independent silent reading is not effective when used as the only type of reading instruction to develop fluency (NRP, 2000). Hence, able readers need time with the teacher in guided oral reading procedures at their instructional level.

3. Comprehension

Harris' and Hodges' (1995) definition of comprehension as "instructional thinking during which meaning is constructed" fits advanced readers who engage in active, problem-solving, thinking processes as they construct meaning from text. With advanced primary students, assessment of comprehension should include critical reading skills such as analysis, synthesis, integration, application, and extension of ideas. Gifted students can demonstrate comprehension through oral summaries, small group discussions, tape recordings, written responses, and other open-ended options.

Teachers need to assess comprehension carefully. Advanced learners with well-developed verbal and memory skills can hide a lack of understanding with a barrage of words relating closely to the questions asked (Barbe & Milone, 1985). Teachers should maintain a checklist of comprehension skills and be sure to teach those skills/strategies that students lack (Barbe & Milone, 1985).

4. Vocabulary Assessment

Vocabulary is critically important in comprehension. The larger the reader's vocabulary, the easier it is to comprehend text (NRP, 2000). Teachers can orally assess students understanding of words prior to reading new material. The teacher should pre-read the material, select words key to understanding the content or story (Texas Education Agency, 2000), and check students' understanding of the words. Teachers should elicit student-provided meanings that go beyond using the word "thing" or that merely state the class the word belongs to, e.g., a desk is a piece of furniture (Ganske, 2000). The teacher can monitor the student's vocabulary knowledge by analyzing a student's written work for appropriate usage of new vocabulary words. These readers should be provided multiple avenues to demonstrate their vocabulary comprehension, such as verbal explanations, writing, drawing, and other open-ended strategies.

5. Spelling Assessments

A developmental spelling measure can be used to determine students' spelling strengths and instructional needs. Asample developmental

spelling screening and inventory assessment can be found in Ganske (2000). The measure includes an inventory to identify a student's spelling stage and a longer spelling assessment with words representative of various spelling features or patterns within that stage. Teachers can also assess spelling strengths and instructional needs by analyzing students' writing.

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