

*On Target:*

# Strategies That Differentiate Instruction

*Grades K-4*



*ESA Regions 6 & 7*



Dear Educators,

In recent years differentiation has become a popular educational trend in classrooms across the nation. Differentiation embraces many of the processes, strategies, and approaches supported by best practice and research. Differentiation is not confined to a single content area or a specific grade level. Rather a differentiated approach to classroom instruction is one that can be applied to any content area at any grade level.

Teachers who differentiate are teachers who consider student learning preferences, abilities, styles, and interests. These instructors create classroom climates that build student comfort levels and encourage both academic and personal growth. In *Differentiating Instruction in the Regular Classroom*, author Diane Heacox lists characteristics of classroom environments that support differentiation (2002, 12-13). These classrooms reflect environments that:

- Promote acceptance of student differences.
- Affirm the learning strengths of all students.
- Acknowledge the differing learning rates and styles of students.
- Recognize that in order for work to be fair for all students, it will sometimes be different for some students.
- Accept that success means different things to different people.
- Allow students to work with various people, depending on learning tasks and student needs.
- Recognize that student interest is the key to motivation and that students have different interests.
- Promote personal responsibility for classroom learning.
- Build feelings of self-confidence and confidence in learning.
- Value effort.
- Nurture students toward independent learning.
- Support and celebrate student success.
- Encourage the development of student strengths, interests, and learning preferences.
- Nurture students' creative spirits.
- Honor the work of all students.

The strategies provided in this booklet, *On Target: Strategies That Differentiate Instruction, Grades K-4*, are only a beginning. They represent a brief glimpse into the array of ideas and strategies available to instructors who want to incorporate the concepts of differentiation into their classrooms. The strategies in this booklet represent a few of the ways teachers can build what Heacox calls a “supportive classroom environment for differentiation (12).

*On Target: Strategies That Differentiate Instruction, Grades K-4* is the eighth in the *On Target* series of booklets compiled by South Dakota's Education Service Agencies with support from the South Dakota Department of Education. Previous booklets in the *On Target* series are available through your ESA or at the following ESA 6 & 7 website: <http://www.sdesa6.org/content/projects.htm>. *On Target* booklets include the following titles:

- *On Target: Reading Strategies to Guide Learning*
- *On Target: Strategies to Help Struggling Readers*
- *On Target: Strategies to Improve Student Test Scores*
- *On Target: Strategies to Help Readers Make Meaning through Inferences*
- *On Target: Strategies to Build Student Vocabularies*
- *On Target: More Strategies to Guide Learning*
- *On Target: Bringing Writing into Content Area Classrooms*

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# Differentiation Basics

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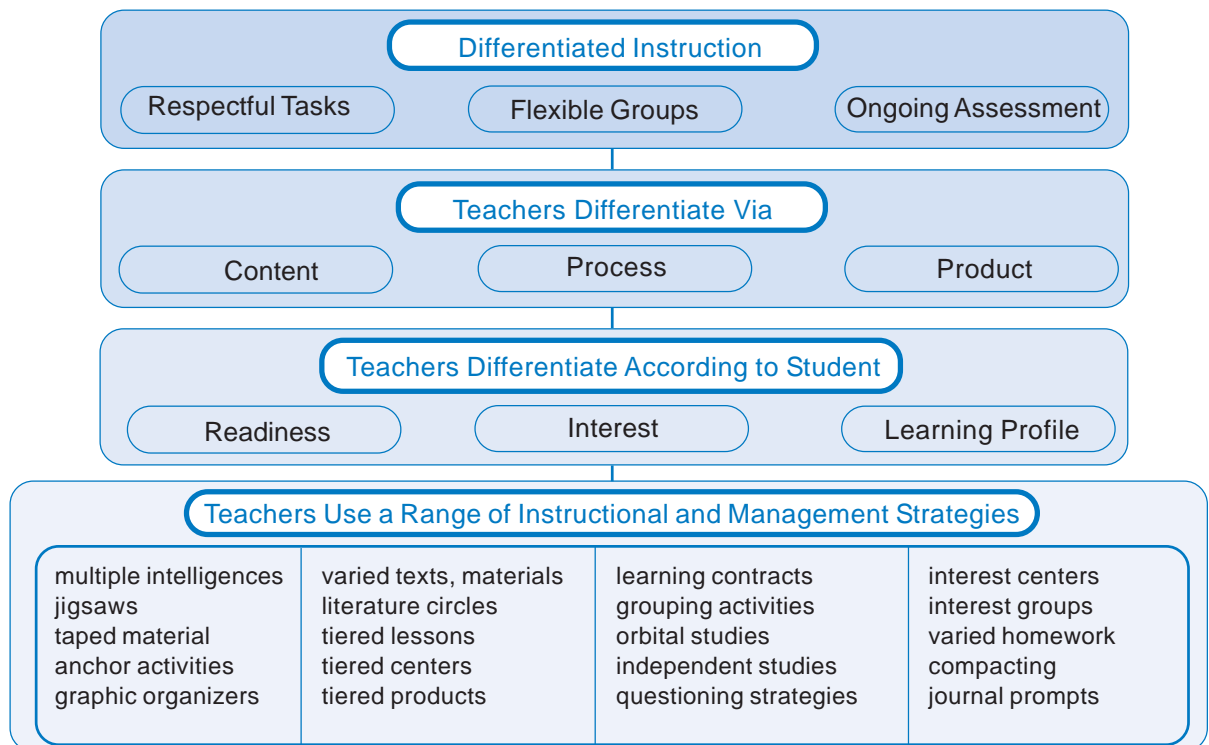
Before you begin, there are a few (well, maybe more than a few) basic elements to differentiation that will make the journey smoother for you and your students.

Remember, you are probably using various aspects of differentiation right now in your classrooms. But, are you being explicit about the ways in which you differentiate? In other words:

- Are you conscious of the efforts you make to meet the needs of all your students?
- Do you keep track of the ways you address individual learning styles and preferences?
- Do you arrange classrooms and structure lessons to increase student motivation?
- Whenever possible, do you provide students with options and choices regarding how they are going to learn and how they are going to show their learning?
- Do you vary the ways in which you assess student learning?
- Do you use cooperative learning and grouping strategies to increase student participation?

Odds are that you already incorporate some or most of these aspects of differentiation in your classrooms. As you venture into the world of differentiated instruction, look at what you are already doing. Then consider the principles and strategies provided in this booklet. Select and use those that complement the efforts you already make to meet the diverse needs of your students. Keep in mind that differentiation shouldn't be something that complicates your day or life. Although additional work and effort are required up front, the payoff comes later in the lesson of study or even in the school year. The payoff comes with students achieving more in your classrooms, becoming more involved in classroom discussions, smiling more during their school days, and, yes, even scoring higher on various assessments.

In *The Differentiated Classroom: Responding to the Needs of All Learners*, Carol Ann Tomlinson offers the following framework for helping teachers differentiate in the classroom (15).



Source:

Tomlinson, Carol Ann. *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: ASCD, 1999.

# Know, Understand, and Do (KUD)

A fundamental premise of differentiating instruction is that you, as the classroom leader, must take certain steps that guarantee your students will learn what you need them to learn in order to meet curriculum guidelines and state standards.

That means before you begin a unit of study, you need to know exactly what you expect from students. Of course, this is nothing new, but too often it's a simple step we neglect to follow as we instruct our students. One suggestion many practitioners of differentiation offer is the KUD method. As you prepare a unit, explicitly explain what it is you want students to Know (K), Understand (U), and Do (D).

Carol Ann Tomlinson, author of numerous articles and books focusing on differentiation, suggests that only when educators have defined for themselves the outcomes they expect can they begin to effectively develop units of study designed to meet student needs. She says the first step in designing an effective and differentiated unit is to focus. Using KUD helps teachers maintain focus.

## Steps:

1. Before beginning any unit, decide what you want students to Know (K), Understand (U), and Do (D). Keep in mind the following elements that differentiate each of these processes.

**Know:** (facts, vocabulary, definitions, places, information)  
Example: Multiplication tables

**Understand:** (essential truths, principles and generalizations, big ideas of a discipline, I want students to understand that...)  
Example: I want students to understand that multiplication is another way to add numbers

**Do:** (basic skills, thinking skills, planning skills, uses verbs or phrases)  
Example: Students **solve** problems requiring multiplication.

2. Use the chart as a framework to guide instruction.
3. Display the KUD chart so students know the expectations

## KUD Template

**Know:**

**Understand:**

**Do:**

### Source:

Tomlinson, Carol Ann. "Educators at Work: Differentiating Curriculum and Instruction." ASCD Conference. Orlando, FL. 30 March 05-1 April 05.

# Content, Process, and Product

Once you've decided to explicitly include differentiation into your classroom routines, you are confronted with the question: OK, so what exactly can I differentiate? Differentiation usually includes one or more of the following areas:

- **Content**
  - Is “what” students learn
  - Includes curriculum topics, concepts, or themes
  - Reflects state or national standards
  - Presents essential facts and skills
  - Differentiates by preassessing student skills and understandings, then matching learners with appropriate activities
  - Provides students with choices in order to add depth to learning
  - Provides students with additional resources that match their levels of understanding
- **Process**
  - Is “how” students learn
  - Refers to how students make sense or understand the information, ideas, and skills being studied
  - Reflects student learning styles and preferences
  - Varies the learning process depending upon how students learn
- **Product**
  - Is the end result of student learning
  - Tends to be tangible: reports, tests, brochures, speeches, skits
  - Reflects student understanding
  - Differentiates by providing challenge, variety, and choice

Author Carol Ann Tomlinson offers the learning environment as a fourth way to differentiate. She suggests that the learning environment is the “weather” of a classroom and includes the classroom’s operation and tone. Class rules, furniture arrangement, lighting, procedures, and processes all affect the classroom’s mood.



## *Sources:*

Heacox, Diane. *Differentiating Instruction in the Regular Classroom: How to Reach and Teach All Learners, Grade 3-12*. Minneapolis: Free Spirit, 2002, pages 10-11.

Tomlinson, Carol Ann. *Fulfilling the Promise of the Differentiated Classroom: Strategies and Tools for Responsive Teaching*. Alexandria, VA: ASCD, pages 4-6.



# Marker Boards

If you're looking for a way to increase class participation and make daily assessment easier for yourself, marker boards could be a solution for you. The boards provide a means for you to informally monitor student progress. When students use marker boards, you can simply look around the room and learn which students are struggling with a concept and which students have mastered new material.

Use marker boards whenever you want to check understanding. For example, you want to quickly see if students are able to solve an equation. Rather than presenting the problem, use the marker boards for students to solve the problem and then show their answer. The process requires participation from all students, not just those likely to participate in class discussions.

## Steps:

1. Provide each student with a white board. Boards can be purchased at office supply stores. However, educator Nancy Powell says if you, or your school, operates on a small budget, white boards can easily be made.
  - At a home improvement store purchase 4 by 8-foot sheet of melamine, tile board, or white board. Expect to pay about \$9 to \$15.
  - Check to see if the business will cut the board into 12-inch squares or cut the material yourself. One sheet should provide about 32 white boards.
  - Smooth the edges with sandpaper.
  - Store boards in large (about 2 gallon) zippered bags to prevent the boards from scratching.
  - Provide each student (or have students bring) a dry erase marker.
  - Have students store boards in their desks or notebooks to avoid handing them out for each use.
  - Want an easy way to erase boards? Powell suggests that old, CLEAN socks make excellent erasers.
2. Provide students with a question that reviews a lesson or concept (list biomes, draw a picture of a tornado, spell the following words. . . , solve the following story problem. . .).



3. Require all students to attempt the problem.
4. As students attempt to solve the problems, walk around and spot check student work.
5. When most or all students have solved the problem, ask them to hold their boards up for you to check.
6. A quick glance around the room allows you to assess student understanding.

## Source:

Powell, Nancy. "Keeping Students Engaged in Learning with Marker Board." *Teachers Network*. New York. 26 June 06 <<http://www.teachnet.org/ntol/howto/adjust>>.

# Clock Buddies

The Clock Buddy strategy provides a quick and easy way for teachers to move students into pairs. The strategy helps avoid situations where students continually try to pair with the same partners.

## Steps:

1. Use the strategy when you want to pair students for discussion or review.
2. Before using the strategy, give each student a handout. Tell students they will need to find a partner for each hour mark on the clock. Remind the students that they can't use any classmate's name twice on the clock.
3. Explain to students that when they find a partner for a certain hour, each buddy must record the other's name on his clock.
  - For example, if Tim lists Mary on his clock at 3 o'clock, Mary must **also** list Tim as her 3 o'clock buddy.
4. Once students have filled the clock face with the names of partners, direct them to tape the clock inside a notebook or on their desks.
5. When you are ready to use the chart for partner work, simply tell students to "Get with your 3 o'clock partner." Or, tell them "It's time to work with your 10 o'clock buddy." Students refer to their clock handout and then meet with the designated partner to discuss the assigned topic or complete the assigned work. (Randomly select the times as you use the chart so students are paired with various partners.)

## Adaptations:

- To avoid confusion as students look for pairs, you may want to regulate the process. For example, tell students, "You have 30 seconds to locate a 12 o'clock partner." After 30 seconds have passed, tell students, "You now have 30 seconds to locate a 1 o'clock partner."
- When working with younger students, consider using only the 12, 3, 6, and 9 hours.
- When working with younger students, consider assigning pairs yourself and then providing students with a completed clock sheet.

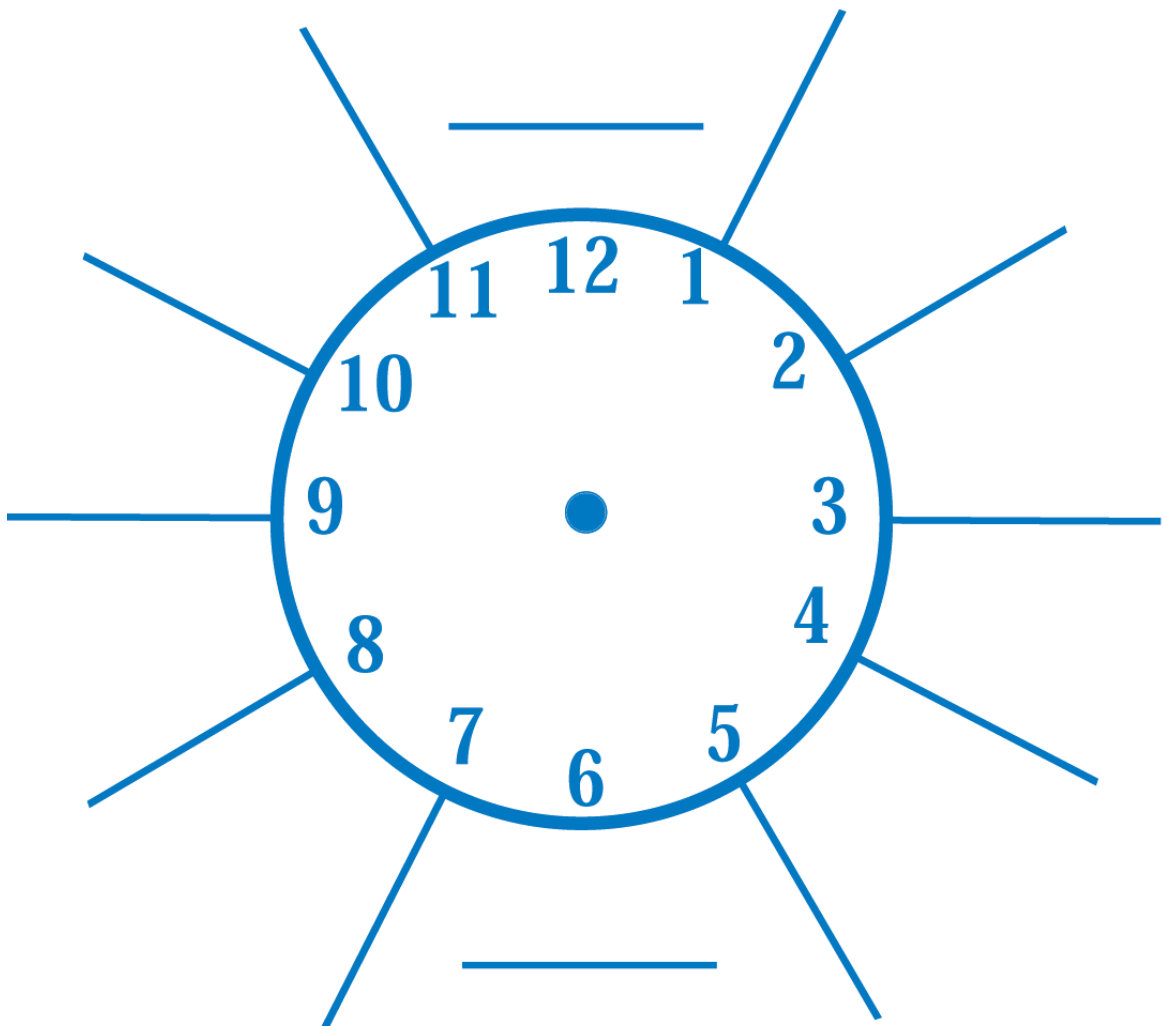
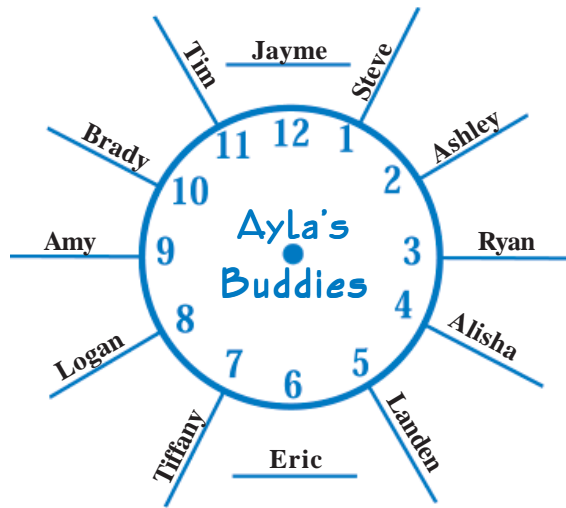


## Sources:

- Garmston, Robert, and Bruce Wellman. *The Adaptive School: Developing and Facilitating Collaborative Groups*. 4<sup>th</sup> ed. El Dorado Hills, CA: Four Hats Seminars, 2002, page 3.
- Jones, Raymond C. "Think-Pair-Share." *ReadingQuest.org*. Curry School of Education, University of Virginia, Charlottesville, VA. 25 Oct. 02. 26 June 06  
<[http://curry.edschool.virginia.edu/go/readquest/strat/clock\\_buddies.html](http://curry.edschool.virginia.edu/go/readquest/strat/clock_buddies.html)>.



# Clock Buddies



Adapted from Raymond C. Jones, "Making Sense in Social Studies." *ReadingQuest.org*

# Seasonal Partners

Seasonal Partners helps students share ideas and insights into their learning. As a result, they are better able to process that information and store it into long-term memory. A basic premise of differentiated instruction calls for giving students the opportunity to talk about, think about, and share their ideas.

## Steps:

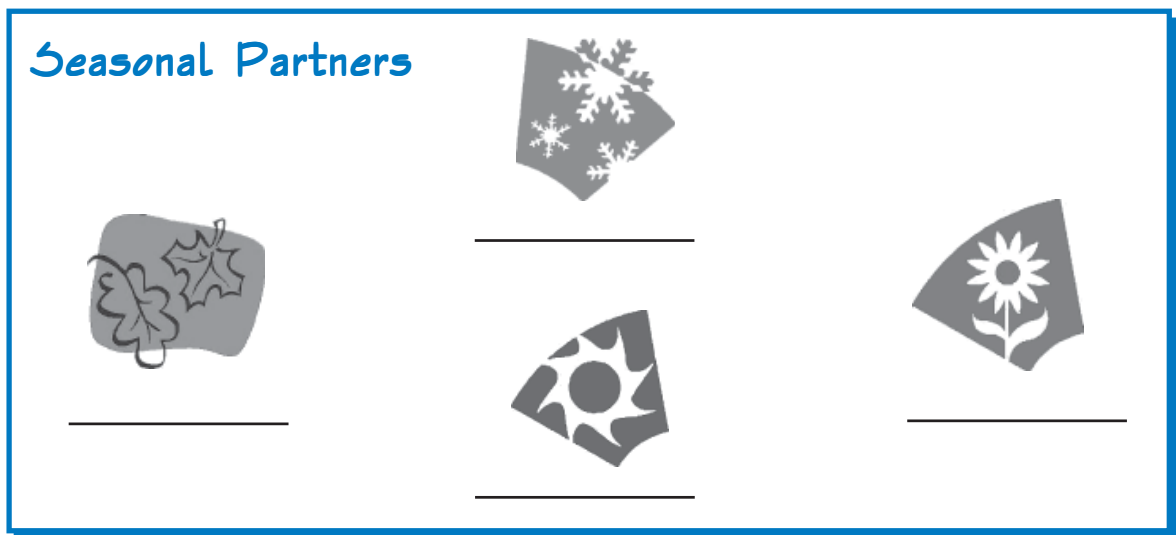
1. Explain to students that they will have a partner for each “season.” Students will meet with the partner whenever you call out a season.
2. Assign students Seasonal Partners and have them record each partner’s name below the season.
3. After studying a lesson, completing an experiment, or reading a story, ask students to find a Seasonal Partner. Present students with an idea, question, or concept from the lesson.
4. Give students time to discuss and compare their thoughts and ideas. (See Think-Pair-Share, pages 12-13).

## Example:

After studying tornadoes as part of a weather unit, a teacher wants to give students the chance to think about what they should do if a tornado warning siren sounds in their community. She poses the scenario: “It’s 2 p.m. in the afternoon and you are at recess. You suddenly hear the sound of the tornado siren. What do you think you should do?” After posing the question, she tells students to look at their Seasonal Partner sheet and find their Spring partner. Spring partners meet and talk about the scenario for a specified amount of time (usually no more than a minute or two). Partners then share their ideas with classmates.

## Adaptation:

- Allow students to select their own seasonal partners. Give students about five minutes to locate one person for each season. No classmate’s name can appear twice on a student’s Seasonal Partner sheet. At the end of the process, each student will have four different classmate’s names on the list.



*Source:*

Garmston, Robert, and Bruce Wellman. *The Adaptive School: Developing and Facilitating Collaborative Groups*. 4<sup>th</sup> ed. El Dorado Hills, CA: Four Hats Seminars, 2002, page 2.

# Popsicle Sticks

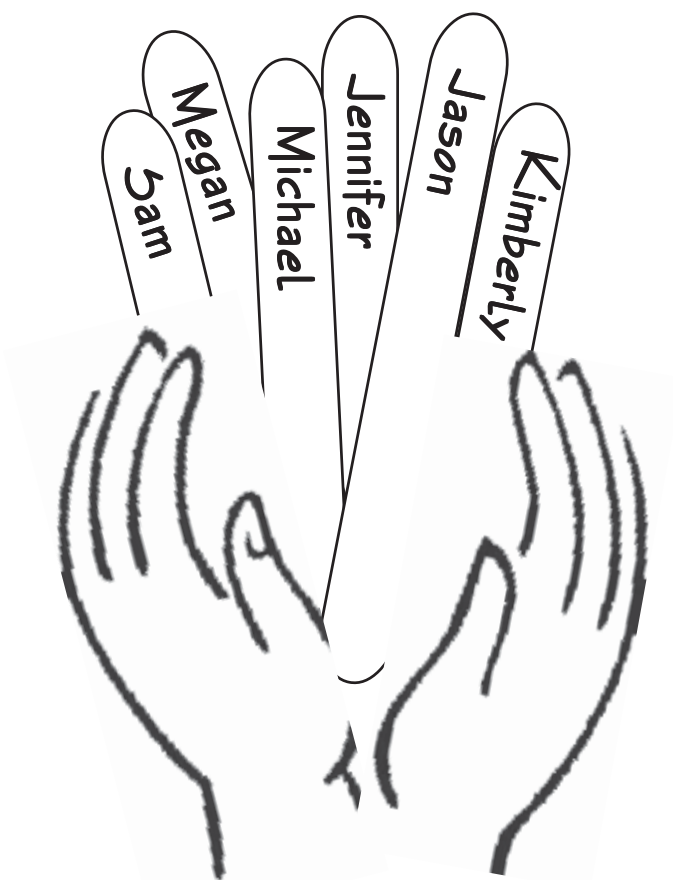
Popsicle Sticks encourages all students to be active listeners and participants in class discussions. The sticks are especially well-suited to differentiation when they are used with open-ended questions. These questions allow all students, even the struggling students in your class, to share ideas and perceptions about a lesson.

## Steps:

1. Write each student's name on a Popsicle stick.
2. Place the sticks in a jar or can at the front of the room.
3. When holding a class discussion, randomly draw a stick. The person named on the stick responds to the question.
4. Make sure that you replace the student's stick back in the jar or can. That way, students realize they can be called upon to respond more than once during a class period or day. Leaving the stick in place makes students accountable for continued listening.

## Adaptation:

- Use the sticks to create random groups for cooperative lessons.



## Sources:

- Forsten, Char, and Jim Grant, and Betty Hollas. *Differentiating Instruction: Different Strategies for Different Learners*. Peterborough, NH: Crystal Springs, 2002, page 14.
- . *Differentiating Textbooks: Strategies to Improve Student Comprehension & Motivation*. Peterborough, NH: Crystal Springs, 2003, page 15.
- Hopkins, Gail. "'Concentration' Review Game." *Education World*. 28 March 03. 25 June 06  
<[http://www.education-world.com/a\\_lesson/03/lp306-05.shtml](http://www.education-world.com/a_lesson/03/lp306-05.shtml)>.

# Think-Pair-Share

**T**hink-Pair-Share provides young students with the opportunity to carefully think and talk about what they've learned. The strategy requires a minimal effort on the part of the teacher yet encourages a great deal of participation from students, even reluctant students. In addition, the strategy incorporates various learning styles which results in a greater amount of involvement and interaction from more students.

After studying a segment of content with students, give students silent thinking time to consider a question about what they've learned. Then, with a partner, students discuss their thinking before sharing their conclusions with the large group.

Raymond C. Jones writes on his *ReadingQuest.org* web site that Think-Pair-Share helps structure discussion and decrease off-task time, thinking, and behavior. Various elements contribute to encouraging all students to participate in the Think-Pair-Share process:

- The question, observation, or prompt leads to focused thinking by all students—not just the students who typically raise their hands to participate in class discussions.
- The process has a built-in safety factor for reluctant learners or shy students. They get to “practice” their thinking with a partner before sharing their thoughts with the entire class.
- The strategy encourages a deeper level of thinking since students have to communicate their ideas to at least one other person—their partner.
- When teachers take care NOT to invest too much time in the first two steps, student involvement increases. Although students shouldn't be stressed by the quick pace, they should feel the need to focus and quickly come up with ideas. Misbehavior or side conversations by students are indicators that too much time is being allotted to each step.

## Steps:

- 1. THINK:** Provide students with a question, prompt, or observation that reflects an important standard from the day's lesson. Give students a few moments to SILENTLY think about the question. Be careful not to make this time too lengthy. You want students to focus and just quietly think. Students can also jot down notes or drawings to illustrate their thinking.
- 2. PAIR:** Pair students with a partner. (Clock Buddies, Seasonal Partners, Popsicle Sticks, pages 8, 9, 10, 11, provide options for pairing students.) During this time, students take turns sharing ideas with partners. They compare ideas and create one best answer. The answer should be the one they consider most interesting.
- 3. SHARE:** Call on pairs to share their thinking.

## Sources:

Billmeyer, Rachel. *Strategies to Engage the Mind of the Learner: Building Strategic Learners*. Omaha: Dayspring, 2003, pages 224-225.

Gregory, Gayle H., and Lin Kuzmich. *Differentiated Literacy Strategies for Student Growth and Achievement in Grades K-6*. Thousand Oaks, CA: Corwin, 2005, page 64.

Jones, Raymond C. “Think-Pair-Share.” *ReadingQuest.org*. Curry School of Education, University of Virginia, Charlottesville, VA. 25 Oct. 02. 26 June 06  
<<http://curry.edschool.virginia.edu/go/readquest/strat/tps.html>>.

Lyman, Frank. “Think-Pair-Share, Thinktrix, Thinklinks, and Weird Facts: An Interactive System for Cooperative Thinking.” *Enhancing Thinking through Cooperative Learning*. Eds. N. Davidson and T. Worsham. New York: Teachers College Press, 1981. pages 169-181.

# Think-*Pair*-Share

## Adaptation:

- The template below provides a framework for students to record thoughts, ideas, and notes. Students can use the template to record notes and ideas or to draw pictures that reflect their thinking about a topic.

Think - My thoughts and ideas:

Pair - What my partner and I think:

Share - What my classmates shared:

# Hands Down

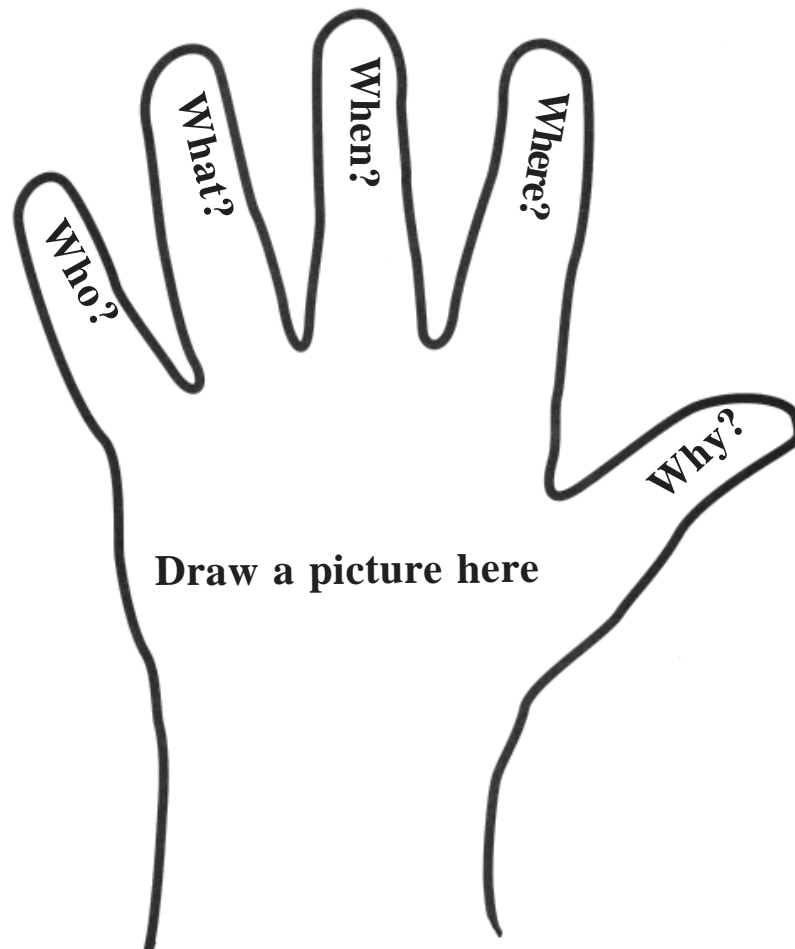
**H**ands Down allows students to make use of their hands as tools to help them organize their thoughts or remember details. A student's fingers become the framework for recording information. The strategy appeals to most students but is especially liked by kinesthetic learners. Students can use the template to record information. Or, they can simply place their "hands down" on a piece of paper and trace. Hands Down can be used anytime you want students to focus on five basic elements of a lesson.

## Steps:

1. Create a sample hand. Label each thumb and finger with categories (see following options). Display the sample and provide students with a handout or ask them to trace their own hands.
2. Allow students to work in pairs or groups.
3. Ask students to fill in the information by completing their "hands" templates or handouts.

*Hands Down Examples:*

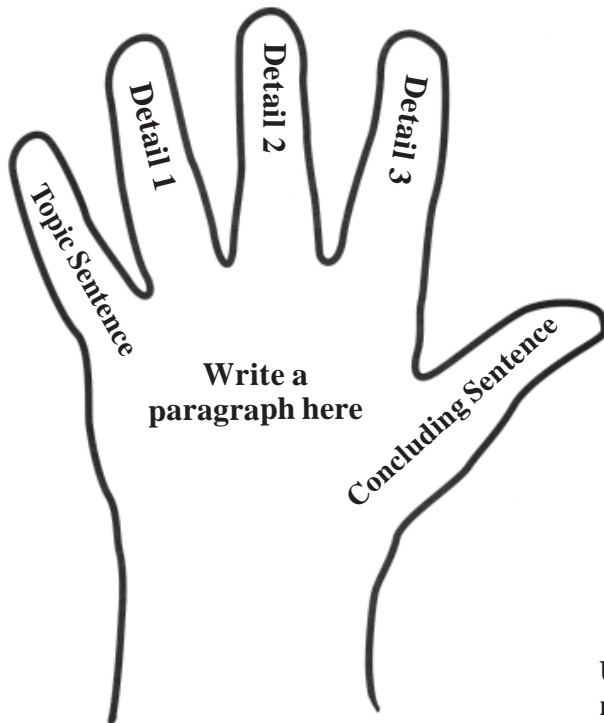
**Use the following template for recalling details from a lesson or short story:**



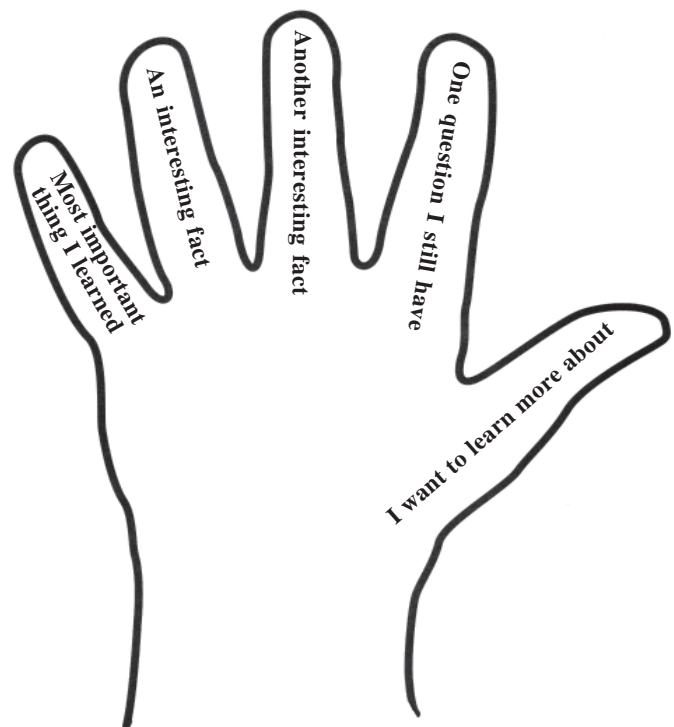


# Hands Down

Use the following template for writing a paragraph:



Use the following template for student reflection about a day's lesson:



## Adaptation:

For math skills, ask students to solve problems written on the thumb and each finger. Ask students to write and solve their own math problem in the palm.

## Sources:

Hoyt, Linda. *Revisit, Reflect, Retell: Strategies for Improving Reading Comprehension*. Portsmouth, NH: Heinemann, 1999, page 57.  
Preszler, June, Education Specialist, TIE.

# Anchor Activities

Anchor activities allow students to work on an ongoing assignment directly related to class content. The activities can be worked on independently throughout a unit or a semester. An anchor activity is a logical extension of learning during a unit. Each activity should expand on important goals and outcomes for which students are held accountable.

The purpose of an anchor activity is to provide meaningful work for students when they are not actively engaged in classroom activities (e.g., when they finish early, are waiting for further directions, are stumped, first enter class, or when the teacher is working with other students.)

## Benefits of anchor activities:

- Can be used to differentiate activities on the basis of student readiness, interest, or learning profile
- Allow students time to work on independent research, to explore a concept more deeply, and to enrich their skill development
- Can be used as a management strategy when working with small groups of students
- Can be a vehicle for making the classroom more student-centered

## Steps:

1. Explain each anchor activity, model and practice the procedure with the whole class.
2. Be clear on expectations—establish clear policy for accountability, evaluation, and value.
3. Develop ground rules with students.
4. Only use tasks that require some time and thinking—it's not worth the time of making the anchor activity to have the student be able to finish it easily and quickly.
5. Provide clear instructions, materials, responsibilities, and expectations.
6. Develop an anchor activity that has students using multiple skills and several content outcomes.



# Anchor Activities

## Ways to Anchor: Ideas for the Elementary Classroom

Puzzles	Graphic organizers
Learning packets	Content related silent reading
Activity boxes	Create an advertisement
Learning/interest centers	Write a story
Vocabulary work	Illustrate a lesson
Listening stations	Draw a comic (related to a lesson)
Write or solve riddles	

## Ways to Manage and Monitor Anchors

Points	Percentage of Final Grade
Rubric	Portfolio Check
Checklist	Teacher/Student Conference
Random Check	Peer Review
On Task Behaviors	Other _____

## Sample Rubric

4	Exceeds the requirements, more creativity displayed, understanding of concept demonstrated at a deeper level
3	Meets all requirements of task, all details and operations are accurate, shows understanding of the concept, demonstrates creativity
2	Most details and operations are accurate, shows partially developed understanding of concepts, displays some or little creativity
1	Some or few details and operations are accurate, shows little or poorly developed understanding of concept, displays little or no creativity

Adapted from "Using Anchor(ing) Activities." Montgomery County Public Schools, Rockville, MD.

# Anchor Activity Planning Guide

(Considerations to Make When Planning Anchors)

**Indicators and outcomes:**

Have all the skills and/or concepts been taught previously?

**Name and description of anchor activity:**

Provide the name and a brief description of the activity.

**Differentiation of anchor:**

How will you make it respectful of each ability level in the class?

**Instructional task:**

What do you have to do so all students can work on the anchor independently?

**Materials needed:**

What will students need? Where will the materials be?

**Expectations:**

When do you expect students to work on this?

**Due date:**

How much time do you want it to take? Will there be checkpoint due dates along the way?

**Points and/or rubric:**

If graded, what is the activity worth?

**Accountability:**

What's collected? Where does finished work go? What is checked by the teacher?

What is checked by the students?

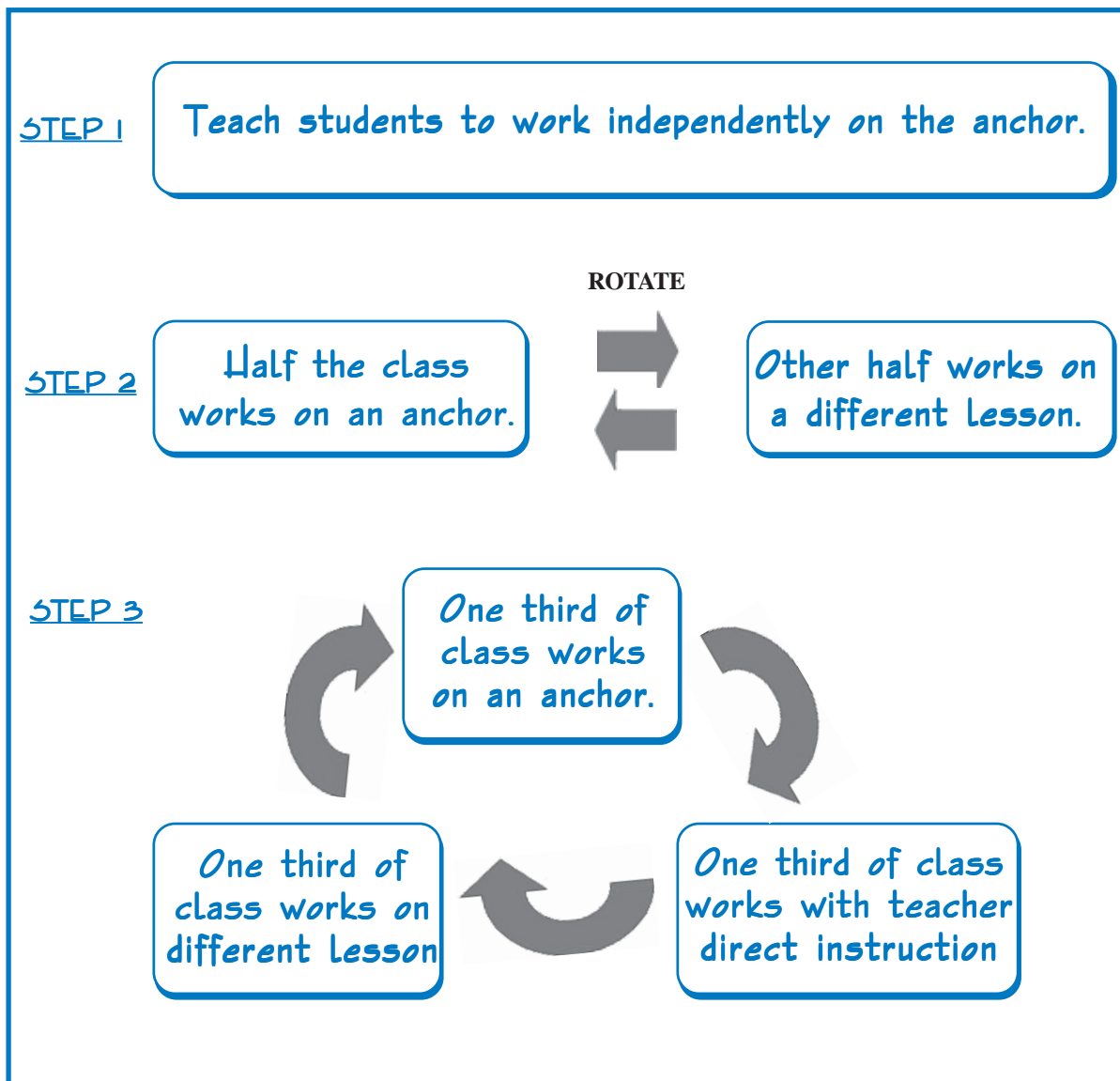
**Additional implementation suggestions:**

- Go over the entire anchor activity with the class.
- Model all of the games.
- If using contracts, go over the contract with everyone and make sure they all understand the expectations.
- Hand out rubrics and review them.
- Point out where materials will be kept.
- Be clear on expectations.
- Review management strategies with the class so they know what to do if they have a question and you're busy.
- Let students know if any of the activities can be done at home or if they're all meant to be done in class.

Adapted from "Using Anchor(ing) Activities." Montgomery County Public Schools, Rockville, MD.

## Using Anchors to Organize Class Activities

In *How to Differentiate Instruction in Mixed-Ability Classrooms*, author Carol Ann Tomlinson suggests that teachers can use anchors to focus student attention.



### Sources:

- “Anchor Activities.” *Best Practice: Instructional Strategies & Techniques*. Regina Public Schools and Saskatchewan Learning. Regina, SK. 25 June 2006  
< <http://wblrd.sk.ca/~bestpractice/anchor/index.html>>.
- Tomlinson, Carol Ann. *Fulfilling the Promise of the Differentiated Classroom: Strategies and Tools for Responsive Teaching*. Alexandria, VA: ASCD, 2003, pages 104-105.
- . *How to Differentiate in Mixed Ability Classrooms*. Alexandria, VA: ASCD, 2001, page 35.
- “Using Anchor(ing) Activities.” Montgomery County Public Schools, Rockville, MD. 25 June 2006  
<<http://www.mcps.k12.md.us/curriculum/enriched/giftedprograms/docs/anchor.ppt#13>>.

# Differentiating Instruction with Technology

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Today's world is different from the one in which we lived just ten years ago. To be truly prepared for the 21st century, our students need schools that reflect those differences. Today's students are digital and visual learners who thrive on collaboration through the use of computers, video equipment, audio equipment, digital cameras, and telephones.

If we think about differentiating the classroom content, product, process, and learning environment with the digital learner in mind, the students will become more actively involved in their learning. Multimedia applications combine video, sound, text, animation, and graphics which address the various learning styles of our students. Frank and Catherine Townsend identify six benefits of using multimedia-based lessons to meet learning needs:

1. Multimedia reaches a variety of senses. This allows the individual to tailor or focus their learning to the individual style, whether it is verbal, auditory, or physical.
2. Multimedia projects validate self expression by allowing students to decide how they want to create a project or assimilate information.
3. Technology gives a sense of ownership to the user. The students actually create evidence of what they have learned, which can later become part of a portfolio.
4. Multimedia creates an active rather than passive atmosphere for learning, which requires student participation and makes students think.
5. Technology fosters communication among students as well as between student and teacher. They discuss the content, organization of content, and how to present it to others (topics which may not have otherwise been discussed).
6. The use of technology and multimedia makes sense because it is already built into the everyday life of all students. (Townsend, 1992)

The tables on the following pages reflect the use of multimedia to promote differentiation in the classroom. The three focus areas are the interactivity on the web, handheld technologies, and software. Each provides great resources to support choices in the classroom.

**The web** provides every aspect of interactivity for each learning style. Graphics, images, and video support the visual learner, while interactive tools support the kinesthetic learner. The auditory learner benefits from video and audio and the textual learner finds outlets for reading and writing that are more motivating than the paper/pencil format of the past.

**Handhelds** provide an array of uses. Students can use them for organization, writing, document reading, document sharing, data collection, visualizations, concept maps, calculating, assessing, and concept mapping. These devices are effective in active learning situations where students ask questions, gather information, analyze information and share results. Most important, handhelds facilitate a collaborative learning environment. Students can share a document by beaming to each other, or they can upload or download documents to or from the web. Putting a palm-sized computer in the student's hand will enable educators to unleash learning opportunities afforded by this small, but revolutionary technology.

**Software** – A variety of software programs support differentiation. There is a cost for these programs, but they are well worth the expense as they open new avenues to our multi-modal digital learners.



# Differentiating Instruction with Technology

As educators, we need to try to meet the needs of our students by providing a variety of lessons using various teaching methods. Technology and computers easily combine various media formats and provide a variety of different learning opportunities. So by nature, technology-based lessons lend themselves to teaching students with various learning styles. When designing lessons that incorporate technology, we need to be sure to use various techniques and keep the needs of all learners in mind.

## Creating Choices with Technology in the K-4 Classrooms

Examples – these are only a few of what is available for your classroom

Resource Type	Content Area	Descriptor
<b>Interactivity on the Web</b> - Lessons are provided at each of the sites to support the use of the tools	<b>All Curricula</b>	<i>MarcoPolo</i> provides seven content web sites with lesson plans, student interactive learning tools, video, audio, links to panel-reviewed Web sites and additional resources created by the nation's leading education organizations. These partners use multimedia throughout the content to support all the learning styles of students. – <a href="http://marcopolo-education.org">http://marcopolo-education.org</a> – <b>All content on this site is free and specifically created for education.</b>
<b>Interactivity on the Web</b>	<b>Reading, Writing</b>	<i>The Graphic Map</i> assists teachers and students in reading and writing activities by charting the high and low points related to a particular item or group of items, such as events during a day or chapters in a book. <a href="http://www.readwritethink.org/student_mat/student_material.asp?id=39">http://www.readwritethink.org/student_mat/student_material.asp?id=39</a>
<b>Interactivity on the Web</b>	<b>Reading, Writing</b>	<i>The Webbing Tool</i> provides a free-form graphic organizer for activities that ask students to pursue hypertextual thinking and writing. The tool provides a quick way for students to trace out options and rearrange connections in prewriting and post-reading activities. <a href="http://www.readwritethink.org/student_mat/student_material.asp?id=38">http://www.readwritethink.org/student_mat/student_material.asp?id=38</a>
<b>Interactivity on the Web</b>	<b>Reading, Writing</b>	<i>Venn Diagram, 2 Circles</i> – This interactive tool allows students to create Venn Diagrams that contain two overlapping circles, enabling them to organize their information logically. Students may edit and print their finished diagrams. <a href="http://www.readwritethink.org/student_mat/student_material.asp?id=6">http://www.readwritethink.org/student_mat/student_material.asp?id=6</a>
<b>Interactivity on the Web</b>	<b>Reading</b>	<i>What's in the Bag?</i> invites primary students to play with vocabulary common to their environment. <a href="http://www.readwritethink.org/student_mat/student_material.asp?id=17">http://www.readwritethink.org/student_mat/student_material.asp?id=17</a>
<b>Interactivity on the Web</b>	<b>Writing</b>	<i>ePals Classroom Exchange</i> ® maintains the Internet's largest community of collaborative classrooms engaged in cross-cultural exchanges, project sharing and language learning. ePALS is also the leading provider of school-safe email™, blogs, eMentoring and web-browsing technology for the global educational market. <a href="http://www.epals.com/">http://www.epals.com/</a>

# Differentiating Instruction with Technology

## Creating Choices with Technology in the K-4 Classrooms

Examples – these are only a few of what is available for your classroom

Resource Type	Content Area	Descriptor
Interactivity on the Web	Writing	<i>Multigenre Mapper</i> – teaching multigenre is a natural way to incorporate reading, writing, and research into the content areas and other disciplines. This interactivity invites students to create original multigenre, multimodal works—one drawing and three written texts—and allows writers to name the genres for each section, making the tool flexible for multiple writing activities. <a href="http://www.readwritethink.org/student_mat/student_material.asp?id=47">http://www.readwritethink.org/student_mat/student_material.asp?id=47</a>
Interactivity on the Web	Math	<i>Bobbie Bear</i> – Use counting strategies to make as many outfits for Bobbie Bear as you can, using different colored shirts and pants. The activity is customizable to student ability levels. <a href="http://illuminations.nctm.org/ActivityDetail.aspx?ID=3">http://illuminations.nctm.org/ActivityDetail.aspx?ID=3</a>
Interactivity on the Web	Math	<i>Turtle Pond</i> – Estimate length and angle measure while guiding a turtle to a pond using computer commands. <a href="http://illuminations.nctm.org/ActivityDetail.aspx?ID=83">http://illuminations.nctm.org/ActivityDetail.aspx?ID=83</a>
Interactivity on the Web	Math	<i>Bar Grapher</i> – Create a customized bar graph with your own data, or display a bar graph from an included set of data. <a href="http://illuminations.nctm.org/ActivityDetail.aspx?ID=63">http://illuminations.nctm.org/ActivityDetail.aspx?ID=63</a>
Interactivity on the Web	Math	<i>Factor Game</i> – Play an interactive game that exercises your factoring ability. Test your skills against a human or the computer. <a href="http://illuminations.nctm.org/ActivityDetail.aspx?ID=12">http://illuminations.nctm.org/ActivityDetail.aspx?ID=12</a>
Interactivity on the Web	Math	<i>Fraction Game</i> – By working on this activity, students have opportunities to think about how fractions are related to a unit whole, compare fractional parts of a whole, and find equivalent fractions, as discussed in the Number and Operations Standard. <a href="http://illuminations.nctm.org/ActivityDetail.aspx?ID=18">http://illuminations.nctm.org/ActivityDetail.aspx?ID=18</a>
Handheld Technologies	All Curricula	<i>Modeling Handheld Use in the Classroom</i> – Integrating the tool within the lesson as a way of assisting students in understanding, collaborating, building their knowledge and expertise, and expressing their own creative thinking and problem solving abilities is the ultimate goal. <a href="http://handheld.tie.net/integration/modeling.htm">http://handheld.tie.net/integration/modeling.htm</a>
Handheld Technologies	Reading	<i>PalmReader</i> and <i>Acrobat Reader</i> allow students to read text on their Palm handheld. As they read, they can take notes, make bookmarks, and read notes and questions provided by the teacher within the text as they are reading. The features of the handheld allow students to enlarge text, invert from black/white to white/black accommodating for the various reading levels and needs. <a href="http://handheld.tie.net/integration/curricular.htm">http://handheld.tie.net/integration/curricular.htm</a>
Handheld Technologies	Reading, Writing	<i>PicoMap</i> and <i>Inspiration</i> are the premiere graphic organizers that may be used to brainstorm, organize thoughts, or retell the story in graphic format. <a href="http://handheld.tie.net/integration/curricular.htm">http://handheld.tie.net/integration/curricular.htm</a>

# Differentiating Instruction with Technology

## Creating Choices with Technology in the K-4 Classrooms

Examples – these are only a few of what is available for your classroom

Resource Type	Content Area	Descriptor
Handheld Technologies	Reading, Writing	<i>eBook Studio</i> allows students to write their own books on the handheld including images for publication. <a href="http://handheld.tie.net/integration/curricular.htm">http://handheld.tie.net/integration/curricular.htm</a>
Handheld Technologies	Writing	<i>FreeWrite Pro</i> , <i>Word to Go</i> , and <i>Wordsmith</i> provide wordprocessing tools for the handheld with the ability to beam or send their document to others to contribute in Round Robin Story writing exercises or similar activities. <a href="http://handheld.tie.net/integration/curricular.htm">http://handheld.tie.net/integration/curricular.htm</a>
Handheld Technologies	Writing	<i>Sketchy Pro</i> allows students to tell stories through animated graphics. <a href="http://handheld.tie.net/integration/curricular.htm">http://handheld.tie.net/integration/curricular.htm</a>
Handheld Technologies	Math	<i>Math Amigo</i> motivates kinesthetic learners. Even the slowest learners feel gratification with the “well done” messages. The teachers are especially pleased with how easily MathAmigo allows for differentiation. <a href="http://www.mathamigo.com/">http://www.mathamigo.com/</a>
Software	Reading, Writing	<i>Kidspiration</i> – Created for K-5 learners, Kidspiration® provides an easy way to apply the proven principles of visual learning. Students build graphic organizers by combining pictures, text and spoken words to represent thoughts and information. Younger learners develop early literacy skills, and more advanced students improve comprehension skills and better organize ideas for writing. This program does have a cost, but it is well worth it. <a href="http://inspiration.com/productinfo/kidspiration/index.cfm">http://inspiration.com/productinfo/kidspiration/index.cfm</a>
Interactivity on the Web	All Curricula	<i>netTrekker D.I.</i> – netTrekker® d.i. allows you to differentiate instruction with standards-based, educator-selected online resources aligned with state standards and organized by readability level to meet individual students’ learning needs. This is a site that does have a fee attached, but many schools in SD have licenses to this program. SD State Standards are included in this site. <a href="http://school.nettrekker.com/frontdoor/">http://school.nettrekker.com/frontdoor/</a>

### Sources:

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<<http://edweb.sdsu.edu/courses/edtec596r/students/Rosen/Rosen.html>>.

Townsend, Frank, and Catherine Townsend. “Meeting Learning Needs Through Multimedia. South Carolina:

ERIC Clearinghouse (ERIC Document Reproduction Service No. ED 352969) 1992.

Torgrude, Marcia, and Londa Richter. 25 June 2006

<<http://www.handheld.tie.net>>.

Warlick, David. *ClassBlogMeister*, The Landmark Project. 26 June 06

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# Connections to Previous *On Target* Books

## *On Target: Reading Strategies to Guide Learning*

### **ABC Chart, Pages 6-7**

Students record their thoughts and ideas regarding a topic prior to beginning a unit of study. The strategy allows students to access background knowledge and to share ideas in a non-threatening format.

### **Word Splash, Page 9**

The Word Splash provides students working in groups with the opportunity to categorize and organize content specific words.

## *On Target: Strategies to Help Struggling Readers*

### **Three Facts and a Fib, Page 25**

The strategy allows students to identify important information while trying to fool or trick their classmates. The Three Facts and a Fib works well with struggling students.

### **Name Card Method, Page 26**

The Name Card Method encourages all students to participate in class discussions.

### **Exit Cards, Page 27**

Exit Cards help teachers gather information on student readiness levels, interests, and/or learning profiles.

## *On Target: Strategies to Improve Test Scores*

### **Yea or Nay/Why? Strategy, Page 20**

Yea or Nay helps students develop a deeper understanding of vocabulary words.

## *On Target: Strategies to Help Readers Make Meaning through Inferences*

### **Pairs Read, Page 10**

Paired Reading gives students the chance to process material using their visual and auditory learning styles.

## *On Target: Strategies to Build Student Vocabularies*

### **Synecitic Comparisons, Page 21**

Synecitic Comparisons require students to compare two different things and find similarities. The strategy encourages students to create comparisons using words and pictures.

### **Word Games, Pages 12-19**

The booklet provides several word game activities that allow students to play with words while developing their understanding of content vocabulary words.

## *On Target: More Strategies to Guide Learning*

### **3-2-1 Strategy, Pages 20-21**

3-2-1 gives students the opportunity to pause and review their learning. The strategy helps students hone their synthesizing and questioning skills.

## *On Target: Bringing Writing into Content Area Classrooms*

### **Think-Ink-Pair-Share, Pages 12-13**

Think-Ink-Pair-Share helps students develop critical thinking skills in the following areas: making predictions, problem solving, decision making, and consensus building.

# Websites to Explore

**Enhance Learning with Technology: Differentiating Instruction**

<http://members.shaw.ca/priscillatheroux/differentiating.html>

**Gigglepotz: Eight Ways of Being Smart**

<http://www.gigglepotz.com/mi8.htm>

**Kathie Nunley: Layered Curriculum®**

<http://www.help4teachers.com/>

**Missouri Innovations in Education: A Resource for Education Diverse Learners**

<http://www.cise.missouri.edu/publications/innovations/inno0103.pdf>

**Public School Parent's Network (PSPN): Elementary Education in Public Schools**

<http://www.psparents.net/Elementary%20School.htm>

**Reading Rockets®: Launching Young Readers**

<http://www.readingrockets.org/>

**SDE: Differentiated Instruction Resources**

<http://www.sde.com/Conferences/Differentiated-Instruction/DIResources.htm>

**Teachers Network: Adjust Your Teaching Style to Your Students' Learning Styles**

<http://www.teachnet.org/ntol/howto/adjust/>

**Teachnology: How to Differentiate Instruction**

<http://www.teach-nology.com/tutorials/teaching/differentiate/planning/>

**Tech for Learning: Tools for an Active Learning Environment**

<http://www.tech4learning.com/>

**Tech Trekers: Early Elementary**

<http://www.techtrekers.com/early.htm>

**Technology: The Difference in Differentiation**

[http://www.riley.d21.k12.il.us/Resources/tech\\_differentiation.html](http://www.riley.d21.k12.il.us/Resources/tech_differentiation.html)

**Various Resources**

<http://www.wilmette39.org/CD39/resource.html>

## Books for Further Reading

- Bender, William. *Differentiating Instruction for Students with Learning Disabilities: Best Teaching Practices for General and Special Educators*. Thousand Oaks, CA: Corwin, 2002.
- Benjamin, Amy. *Differentiated Instruction: A Guide for Middle and High School Teachers*. Larchmont, NY: Eye on Education, 2002.
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- Beninghof, Anne M. *Engage ALL Students Through Differentiation: K-8*. Peterborough, NH: Crystal Springs, 2006.
- . *SenseAble Strategies: Including Diverse Learners Through Multisensory Strategies*. Longmont, CO: Sopris West, 2003.
- Billmeyer, Rachel. *Strategies to Engage the Mind of the Learner: Building Strategic Learners*. Omaha: Dayspring, 2003.
- Forsten, Char, and Jim Grant, and Betty Hollas. *Differentiated Instruction: Different Strategies for Different Learners: K-8*. Peterborough, NH: Crystal Springs, 2002.
- Gregory, Gayle H. *Differentiating Instruction with Style: Aligning Teacher and Learner Intelligence for Maximum Achievement*. Thousand Oaks, CA: Corwin, 2005.
- Gregory, Gayle H., and Carolyn Chapman. *Differentiated Instructional Strategies: One Size Doesn't Fit All*. Thousand Oaks, CA: Corwin, 2002.
- Gregory, Gayle H., and Lin Kuzmich. *Differentiated Literacy Strategies for Student Growth and Achievement in Grades K-6*. Thousand Oaks, CA: Corwin, 2005.
- Heacox, Diane. *Differentiating Instruction in the Regular Classroom: How to Reach and Teach All Learners, Grades 3-12*. Minneapolis: Free Spirit, 2002.
- Hoyt, Linda. *Revisit, Reflect, Retell: Strategies for Improving Reading Comprehension*. Portsmouth, NH: Heinemann, 1999.
- Jensen, Eric. *Brain Compatible Strategies*. Del Mar, CA: Turning Point, 1997.
- . *Top Tunes for Teaching: 977 Song Titles and Practical Tools for Choosing the Right Music Every Time*. San Diego: Brain Store, 2005.
- Paterson, Kathy. *Differentiated Learning: Language and Literacy Projects That Address Diverse Backgrounds and Cultures*. Markham, Ontario: Pembroke, 2005.
- Sprenger, Marilee. *Differentiation through Learning Styles and Memory*. Thousand Oaks, CA: Corwin, 2003.
- . *Learning and Memory: The Brain in Action*. Alexandria, VA: ASCD, 2003.



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- Tomlinson, Carol Ann. *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: ASCD, 1999.
- . *Fulfilling the Promise of the Differentiated Classroom*. Alexandria, VA: ASCD, 2003.
- Tomlinson, Carol Ann, and Caroline Cunningham Eidson. *Differentiation in Practice: A Resource Guide for Differentiating Curriculum: Grades K-5*. Alexandria, VA: ASCD, 2003.
- Winebrenner, Susan. *Teaching Kids with Learning Difficulties in the Regular Classroom: Strategies and Techniques Every Teacher Can Use to Challenge and Motivate Struggling Students*. Minneapolis: Free Spirit, 1996.
- Wormeli, Rick. *Fair Isn't Always Equal: Assessing and Grading in the Differentiated Classroom*. Portland, ME: Stenhouse, 2006.



## ESA Region 6

Serving schools in southcentral  
South Dakota. . .

Agar-Blunt-Onida  
Harold  
Lyman  
Pierre  
Stanley County

**Education Specialist:** Colleen Blake  
cblake@tie.net 605-224-6287

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Jones County  
Midland  
Winner  
Kadoka  
Wood

**Education Specialist:** Roxanne Everhard  
reverhard@tie.net 605-669-3279

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Bennett County  
Todd County (11 schools)  
White River

**Education Specialist:** Paula Kilonzo  
pkilonzo@tcsdk12.org 605-856-2151

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**Sandra Gaspar**  
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### **Co-Director**

**Micky Wienk**  
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### **Executive Director**

**Randy Morris**  
605-347-4467



ESA Regions  
6 & 7

## ESA Region 7

Serving schools in the Black Hills area of  
South Dakota. . .

### **Northern Hills Area**

Belle Fourche  
Lead-Deadwood  
Meade  
Newell  
Spearfish

**Education Specialist:** Pam Lange  
plange@tie.net 605-394-1876

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Haakon

**Education Specialist:** Micky Wienk  
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### **Southern Hills Area**

Custer  
Edgemont  
Elk Mountain  
Hill City  
Hot Springs  
Oelrichs

**Education Specialist:** Debbie O'Doan  
dodoan@tie.net 605-394-1876

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Shannon County

**Education Specialist:** Sandy Gaspar  
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Douglas  
New Underwood  
Rapid City  
Wall

**Education Specialist:** Julie Mathiesen  
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