Going

OUTSIDE THE LINES
to Differentiate Instruction for
Primary &Elementary Grades

Presented by:
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Song Lyrics to:

"Beat of a Different Marcher"
By Debbie Silver & Monte Selby

Bobby marches to the beat of his different drummers
Jeffery does his reading, but he can't do numbers
Shawna's up and talkin' 90 miles an hour, again
Can't find his book or pencil, that would be Ben
Hyperactive, dyslexic, class clown, non-reader
Upper class, no class, off-task, bottom feeder
Little Arty's a challenge; Martin's a dream
We've seen them all, they all need to be seen.

All children in reach when we find their rhythm --
The step, the dance, the song within them
That's a better journey, but so much harder
Too extraordinary, but so much smarter
To drum to the beat of each different marcher.

Sandy's in the slow group, a proven low achiever
She's the small quiet one, not a class leader
Crayons in her hand, she can draw what she knows best
But no room for pictures on the standardized test.
Ballerina, bricklayer, biochemist, ball player
Diesel driver, drum major, diva-destined, dragon slayer --
Some kids have a chance, with a different choice
To show what they know, they must have a voice.

All children in reach when we find their rhythm --
The step, the dance, the song within them
That's a better journey, but so much harder
Too extraordinary, but so much smarter
To drum to the beat of each different marcher.

Introspective, oversized, minimized, criticized
Round holes, square lives, not much room for compromise.
There's a new song not yet written
For each and every child, will we listen?

All children in reach when we find their rhythm --
The step, the dance, the song within them
That's a better journey, but so much harder
Too extraordinary, but so much smarter
To drum to the beat of each different marcher.
Let's all dance to the beat of each different marcher!

(reprinted with permission of Streetsinger Music Company

Essential Eight

Name- _____

The purpose of this "get acquainted" activity is to start thinking about the different areas of intelligence. Participants are to mix freely and try to get seven different people to sign the blanks (each participant may sign her/his own sheet once). In order to record a name in the blank, the person signing must actually perform the task (not just say that she/he can do it).

Find Someone Who Can:

_____ recite a poem from memory.

_____ finish this numerical sequence: 8,1,7,2,6,3,5, _____, and explain the logic behind it.

_____ with hands on head stand on one foot with eyes closed for at least 7 seconds.

_____ recall at least one dream from the last 3 weeks.

_____ hum the first line of *Silent Night* on key.

_____ tell 3 times they were very brave.

_____ name four very close friends in less than 15 seconds.

_____ Name 4 ways plants are different from animals.

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Checklists for Assessing "How Students Are Smart"
Adapted by Debbie Silver
from *Multiple Intelligences* in the Classroom by Thomas Armstrong

Name of Student- _____
Check all the items that apply:

Linguistic Intelligence (Word Smart)
__1.   Is a good reader.
__2. Enjoys word games.
__3. Is a good joke teller/ storyteller.
__4. Has a good vocabulary for age.
__5. Enjoys listening activities.
__6. Likes to write stories and/or poems
__7. Communicates with others in a highly verbal way.
__8. Appreciates rhymes, puns, and/or nonsense words.
__9. Has a good memory for words, stories, details.

Other linguistic strengths:

Logical-Mathematical Intelligence (Number Smart)
__1. Asks a lot of questions about how things work.
__2. Has a good sense of cause and effect.
__3. Finds math games interesting.
__4. Can see and repeat patterns easily.
__5. Enjoys working puzzles and brain teasers.
__6. Understands computer programming.
__7. Is a logical thinker.
__8. Can estimate things involving numbers with relative ease.
__9. Can work math concepts in head.
Other logical-mathematical strengths:

Visual-Spatial Intelligence (Picture Smart)
__1. Reports clear, visual images (or dreams).
__2. Can envision objects from more than one perspective.
__3. Daydreams more than peers.
__4. Likes to draw and/or create art projects.
__5. Has a good eye for detail and color.
__6. Is good at spatial games like chess and Tetris.
__7. Likes movies, slides, or other visual presentations.
__8. Can move between 2-dimensional and 3 dimensional representations
         with ease.
__9. Can read and/or create maps.

Other visual-spatial strengths:

Bodily-Kinesthetic Intelligence (Body Smart)
__1. Is very coordinated.
__2. Exceptionally mobile: moves, twitches, fidgets, taps when seated for long.
__3. Enjoys working with clay, finger paint, and other tactile media.
__4. Can mimic others' gestures, posture, and movements
__5. Must touch anything new or interesting.
__6. Loves to take things apart and put them back together.
__7. Uses dramatic body movements for self-expression.
__8. Enjoys running, hopping, climbing, wrestling, or similar activities.
__9. Exhibits fine motor control (crafts, painting, etc.).

Other bodily-kinesthetic strengths:

Musical Intelligence (Music Smart)
__1. Can detect music that is off-key, off-beat, or disturbing in some way.
__2. Remembers melodies of songs.
__3. Taps rhythmically as he/she works or plays.
__4. Sensitive to environmental noise (rain on the windows, etc.).
__5. Plays a musical instrument and/or sings in a choir.
__6. Has a good singing voice.
__7. Responds favorably when music is played.
__8. Sings songs that he/she has learned.
__9. Unconsciously hums much of the time.

Other musical strengths:

Interpersonal Communications Intelligence (People Smart)
__1. Establishes meaningful peer relationships.
__2. Seems to be a natural leader.
__3. Empathizes with others.
__4. Likes to play with others.
__5. Shows good teamwork skills.
__6. Others seek this student's company.
__7. Has two or more close friends.
__8. Frequently acts as a mediator and/or peace maker.
__9. Enjoys teaching others.

Other interpersonal communication strengths:

Intra-personal Awareness Intelligence (Self Smart)
__1. Displays a sense of strong will.
__2. Enjoys playing or working alone.
__3. Has high self-esteem.
__4. Has a good sense of self-direction.
__5. Does not mind being different from others.
__6. Has a realistic view of his/her strengths and weaknesses.
__7. Is able to deal effectively with successes and failures.
__8. Has an interest or talent that is not readily shared with others.
__9. Seems to "march to the beat of a different drummer."

Other intra-personal awareness strengths

Naturalistic Intelligence (Nature Smart)
__1. Likes to identify and classify living and nonliving things in nature.
__2. Cares for pets or animals.
__3. Understands repeating patterns in nature and the universe.
__4. Seems more "in tune with nature" than peers.
__5. Would rather be outside than inside.
__6. Has a demonstrated appreciation for a part of the natural world
    (i.e. dinosaurs, clouds, rocks, etc.)
__7. Likes to garden and/or appreciates plants.
__8. Understands and appreciates the environment.
__9. Loves to collect things from nature.

Other naturalistic strengths

M. I. And Your Science Classroom
(adapted from J. Abruscato's *Teaching Children Science*, 2001)

Logical-mathematical (Number/Puzzle Smart)
- Emphasize the underlying patterns children observe in science activities.
- Have students think about the steps involved in all deductions and activities.
- Stress numbers, measuring, and other mathematical concepts whenever possible.

Linguistic (Word Smart)
- Begin concept studies with popular children's books.
- Emphasize writing down predictions, observations, and writing in science journals.
- Encourage students to keep personal science dictionaries.
- Connect creative writing activities to science concepts.

Musical (Music Smart)
- Use songs, raps, and music selections to accompany the introduction of new concepts and/or to practice vocabulary.
- Encourage students to make up their own songs using science concepts.

Visual/Spatial (Picture Smart)
- Encourage students to use models and pictures to demonstrate understanding.
- Present new material through videos and pictures.
- Connect graphs to information whenever possible.

Bodily/Kinesthetic (Body Smart)
- Provide ample opportunities for students to use science materials and equipment.
- Whenever possible, have students demonstrate new learning through movement and dance. (i.e. acting out the metamorphosis of a butterfly).

Interpersonal (People Smart)
- When doing a cooperative activity help students "de-brief" not only their findings but also how well they worked together.
- Provide opportunities for students to share their findings, discoveries, and questions with their classmates.

Intrapersonal Awareness (Self Smart)
- Encourage the use of personal journals and reflective activities.
- Allow students to choose solitary, independent work occasionally.

Naturalist (Nature Smart)
- Use activities from programs such as Project Learning Tree, Project WILD/Aquatic, and Project WET that link science to the natural world.
- Use natural objects or media using natural objects to illustrate points.

Cartesian Diver

Introduction:

The Cartesian Diver was made popular in the 1800's by the philosopher Rene Descartes. It is commonly found in science classrooms or perhaps you have seen the *Diving Tony* toy distributed in boxes of Frosted Flakes. The Cartesian diver offers an eloquent demonstration of the most unique property of a gas, its compressibility.

Materials:

One 2-liter plastic bottle with cap
One glass eyedropper

Procedure:

1)   Fill the bottle with water.
2)   Fill a glass with water.
3)   Draw water into the dropper until it is 2/3 full.
4)   Place the dropper into the glass of water. If it sinks, adjust the water level until the dropper floats.
5)   Place the dropper into the 2-liter bottle and screw the cap tightly in place.

Activity:

Hold the bottle in one hand and squeeze. What do you observe? Release the pressure with your hand and observe again.

Questions:

Why does the dropper sink when you apply pressure to the bottle?

As you squeeze the bottle the pressure inside increases. Liquids are not compressible but gases are. Therefore, the air in the dropper compresses and allows more water to flow into the dropper. This increases the weight of the dropper. As the weight increases, the density increases until it becomes greater than the density of water. Objects that have a density greater than water will sink.

Why are gases compressible and liquids not?

In gases the molecules are very far apart compared to their size. In other words, gases are mostly empty space. When put under increased pressure, the gas molecules can move closer together and the gas will occupy less volume.

On the other hands, in liquids the molecules are already crowded very close together. Since there is no empty space between the molecules, an increase in pressure cannot cause a decrease in volume.

Logical Analytical/Linguistic

Science Fact Sense

_____ = Number of _____

a. 7   = Number of C in the R

b. 24   = Number of H in a D

c. 3   = Number of B P on an I

d. 4   = Number of S in a Y

e. 8   = Number of L on a S

Make Up Your Own-

TOPIC: _____

_____

_____

_____

_____

_____

These Are Barfs:

These Are NOT Barfs:

Which of These Are Barfs?
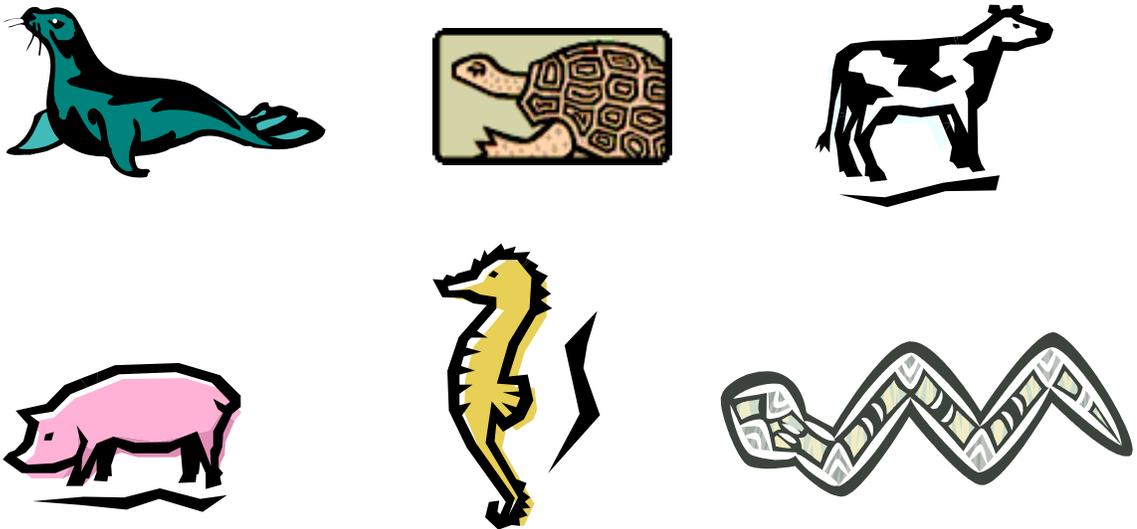
Ways to Manage Your Differentiated Classroom
(from Betty Hollas, 2005)

•   **Build relationships with students.**

•   **Open pathways for students to construct meaning from the content you teach.**

•   **Structure students' interactions with one another.**

•   **Encourage students to interact with the information they are learning in ways that challenge, engage, and actively involve them.**

Differentiating Instruction

CONTENT:

1.   **Use reading materials at varying readability levels.**

2.   **Put text materials on tape.**

3.   **Use spelling and/or vocabulary lists at readiness levels of students.**

4.   **Present ideas through both auditory and visual means.**

5.   **Use reading buddies.**

6.   **Meet with small groups to re-teach an idea or skill for struggling learners or to extend the thinking or skills of advanced learners.**

PROCESS:

1. **Use tiered activities through which all learners work with the same important understandings and skills but proceed with different levels of support.**

2. **Provide interest centers that encourage students to explore subsets of the class topic or particular interest to them.**

3. **Develop personal agendas to be completed either during a specified agenda time or as students complete work early.**

4. **Offer manipulatives or other hands-on supports for students who need them.**

5. **Vary the length of time a student may take to complete a task in order to provide additional support for a struggling learner or to encourage an advanced learner to pursue a topic in greater depth.**

PRODUCT:

Different Ways to Find Out What Students Understand		
Make a chart or diagram	Do a demonstration	Create a dance
Write a letter to the editor	Make a scrapbook	Design a Web Quest
Conduct a discussion	Participate in a debate	Create a puppet show
Create an advertisement	Make an editorial video	Keep a journal log
Write an essay	Design a structure	Create a report
Participate in a simulation	Develop a collection	Make a plan
Create a poem	Write and do a rap	Make a mural
Do a photo essay	Design a game	Create a new product
Create an invention	Present a news report	Do an experiment
Teach someone else	Judge an event	Make a model
Write an analogy	Conduct an interview	Develop a rubric
Participate in a mock trial	Create cartoons	Write a book
Design and teach a class	Create a flow chart	Make a learning center
Devise a new recipe	Give a performance	Draw a blueprint
Write a monologue	Defend a theory	Do a self-assessment
Illustrate a math concept	Create a brochure	Solve a mystery
Do a multimedia presentation	Develop an exhibit	Critique a book
Write a diary from the perspective of someone else	Set up a system of checks and balances	Do a Gallery Walk (Carousel Walk)

Strategies for Differentiating Instruction

1. **Stations.** Using stations involves setting up different spots in the classroom where students work on various tasks simultaneously. These stations invite flexible grouping because not all students need to go to all stations all the time.

2. **Compacting.** This strategy encourages teachers to assess students before beginning a unit of study or development of a skill. Students who do well on the preassessment do not continue work on what they already know.

3. **Agendas.** These are personalized lists of tasks that a student must complete in a specified time, usually two to three weeks. Student agendas throughout a class will have similar and dissimilar elements.

4. **Complex Instruction.** This strategy uses challenging materials, open-ended tasks, and small instructional groups. Teachers move among the groups as they work, asking students questions and probing their thinking.

5. **Orbital Studies.** These independent investigations, generally lasting three to six weeks, revolve around some facet of the curriculum. Students select their own topics, and they work with guidance and coaching from the teacher.

6. **Entry Points.** This strategy from Howard Gardner proposes student exploration of a given topic through as many as five avenues: narrational (presenting a story), logical-quantitative (using numbers or deduction), foundational (examining philosophy and vocabulary), aesthetic (focusing on sensory features), and experiential (hands-on).

7. **Problem-Based Learning.** This strategy places students in the active role of solving problems in much the same way adult professionals perform their jobs.

8. **Choice Boards.** With this strategy, work assignments are written on cards that are placed in hanging pockets. By asking a student to select a card from a particular row of pockets, the teacher targets work toward student needs yet allows student choice.

9. **4MAT.** Teachers who use 4MAT plan instruction for each of four learning preferences over the course of several days on a given topic. Thus, some lessons focus on mastery, some on understanding, some on personal involvement, and some on synthesis. As a result, each learner has a chance to approach the topic through preferred modes and also to strengthen weaker areas.

Learning Center Plan

Topic or Subject:

Standards:

Essential Ideas:

Activities:

Materials:

Location:

Assessment:

Teacher Comments:

Learning Centers

1. **Make directions clear.**
2. **Make directions comprehensive.**
3. **Provide incentives and reinforcements.**

TIPS:

A. **Laminate everything.**
B. **Number & label pieces for easy pick-up & storage.**
C. **Use "blogs" and/or interactive journals.**
D. **Use sign-in sheets, logs, charts, etc. for record keeping.**
E. **Monitor frequently and give feed-back.**
F. **Change centers often.**
G. **Encourage students to help create, add to, and improve centers.**
H. **Use center monitors when appropriate.**
I. **Use volunteers to create and monitor centers.**

Common Principles of Differentiated Instruction

Flexible grouping: matching students to skill work by virtue of readiness, not with the assumption that all need the same task, computation skill, writing assignment, etc. Movement among groups is common, based on readiness on a given skill and growth in that skill.

Tiered instruction: using varied levels of activities to ensure that students explore ideas at a level that builds on their prior knowledge and prompts continued growth. Student groups use varied approaches to exploration of essential ideas.

Source:
<http://www.mcps.k12.md.us/DEPARTMENTS/EII/gr/eiihomebutton.jpg>

Tiered Assignments

Rationale:

- Blends assessment and instruction
- Allows students to begin learning from where they are
- Allows students to work with appropriately challenging tasks
- Allows for reinforcement or extension of concepts and principles based on student readiness
- Allows modification of working conditions based on learning style
- Avoids work that is anxiety-producing (too hard) or boredom producing (too easy)
- Promotes success and is therefore motivating

Guidelines for Use:

1. Be sure the task is focused on a key concept or generalization essential to the study.

2. Use a variety of resource materials at differing levels of complexity and associated with different learning modes.

3. Adjust the task by complexity, abstractness, number of steps, concreteness, and independence to ensure appropriate challenge.

4. Be certain there are clear criteria for quality and success.

(Tomlinson, 2001, p. 101)

Pre-assessment is vital when addressing advanced reading needs. Results from pre-assessments must be employed to guide teachers' use of curriculum compacting, tiered assignments, and flexible groups. Pre-assessment is needed to accomplish the following:

- Determine students' instructional reading levels and skill needs.
- Group students flexibly by readiness and the 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 pre-assessments

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

Other Pre-assessment Strategies:
  * Teacher prepared pretests
  * KWL charts and other graphic organizers
  * Writing prompts/samples
  * Questioning
  * Guess Box
  * Picture Interpretation
  * Prediction
  * Teacher observation/checklists
  * Student demonstrations and discussions
  * Initiating activities
  * Informational surveys/Questionnaires/Inventories
  * Student interviews
  * Student products and work samples
  * Portfolio analysis
  * Game activities
  * Show of hands to determine understanding: Every Pupil Response
  * Drawing related to topic or content
  * Standardized test information
  * Anticipation journals

Criteria for Rubrics

Complexity	Too simple or not appropriate	Simple information; limited critical thinking	Information shows critical thinking; compares and contrasts	Beyond expectations; 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

From: *Reading Instruction for the Primary Gifted Learner* by Bertie Kingore,Ph.D
http://www.bertiekingore.com/readinginstruction.htm

Activities for Teaching Sound

FOR CENTER EXPLORATION:

Bin 1 small musical instruments

Bin 2 rubber bands, forks, spoons, screws, nuts, bolts, combs, straws, empty boxes and containers (some round), cardboard tubes, pot lids, tuning forks, wooden mallots, waxed paper, plastic wrap.

Bin 3 Opaque containers each containing an object or objects, resealable bags with a collection of objects similar to those in containers, empty containers.

Encourage students to interact with the materials in the bins and to add to them if they like.

Introduction Of Sound:
•Read *I Have a Sister, My Sister is Deaf* by Jeanne Whitehouse Peterson. Discuss how a deaf child might know that a dog is growling or a radio is playing.

•Place a clear container of water on the overhead projector. Tap a tuning fork on your heel or the palm of your hand and then place it in the water. Observe what happens. Discuss the fact that sounds produce vibrations.

•Place beans or rice on the surface of a drum and then tap the drum. Discuss what this demonstrates.

•Use various objects hidden from view to make sounds and see if the students can identify what is producing each sound.

How Sound Travels:

•Have students hang a coat hanger upside down. Help them tie a piece of string to each end of the bottom of the coat hanger. Have them wrap the other end of the strings a couple of times around the ends of their index fingers. Ask them to place their index fingers in their ears. Have a partner use a pencil to lightly tap the hanger. Ask students to describe the sound they hear.

•To demonstrate how sound travels through water, place an alarm clock in a sealed bag and hold it submerged in a pail of water. Students can press one of their ears against the pail tor into the water to listen for the sound.

•Have students place one ear on a desk while another student taps the opposite end. Ask them what they experience. Read a story or show a picture of a frontiersman with his ear to the ground. Ask them why they think a person would do this.

•Provide a variety of containers such as tin cans, plastic cups, styrofoam cups and alternatives to string such as wire, rope, or elastic so that the students can build several types of "telephones" to test which materials are the most effective. Have students observe which materials make the best telephones.

•Seal a freezer bag of sand (firmly sealed with no air in it), a bag of water (with no air in it), and a bag with just air blown into it. Have students place the bags one at a time on a flat surface. Ask them to put one ear gently on the bag on the table. Put one finger in the other ear. Have them lightly tap or rub the table with the eraser end of a pencil. Have them rank the bags by which helped them best hear the sound.

EXPLORING PITCH:

•Have students create homemade guitars with shoeboxes or empty tissue boxes by stretching different width rubber bands across the container. Arrange the rubber bands in order from highest to lowest pitch. Can they make a generalization about how the width influences the pitch?

•Have students create their own kazoos by attaching a 5 cm square of waxed paper over one end of a cardboard tube with a rubber band. Punch a small hole (diameter of a pencil) into one side of the tube about 3 cm from where the waxed paper is attached. Students can hum into the tube and feel the vibrations if they lightly touch the waxed paper.

•Have students create their own whistles by flattening the end of a drinking straw and cutting it to took like a pointed arrow. Students then flatten the other end and put it between their teeth (with lips folded over teeth). They blow into the straw to create a unique sound that can be altered by changing the length of the straw.

•Allow students to align bottles with varying amounts of water in an order that creates a musical scale. Challenge them to play a song using their newly created instruments.

•Have students extend a ruler about 10 cm off a flat surface (desk or table). While holding the end on the flat surface stable with a heavy book they can gently flip the loose end and listen to the sound. Ask them to vary the length of the overhanging ruler and record their results. Have them try this sequence and try to figure out the tune (**14, 14, 10, 10, 9, 9, 10, 11, 11, 12, 12, 13, 13, 14 cm**).

FURTHER IDEAS AND INTERDISCIPLINARY CONNECTIONS:

ART
•Ask students to choose high pitch or low pitch. Have them draw only objects that make the pitch they choose.

•Have students listen to a certain musical selection. Have them create a picture that comes to mind when they hear that kind of music.

•Read *Emily's House* by Niko Schauer and have students make a collage of pleasant and/or unpleasant sounds.

LANGUAGE ARTS
•Have students write a paragraph about an object that produces high pitched sounds. Have them explain how they think that happens.

•Show students how to create sound chimes with string and different metal objects (forks, spoons, nails, nuts, bolts). Then have them write the directions in their own words.

•Have students listen to the mystery sounds or musical tape shared by the teacher. Ask them to write words that tell describe each sound.

•Have students play a game of charades or mime certain common terms.

•Allow students to record a story of their choice using their own sound effects.

•Read aloud children's literature that pertains to sound (like *The Magic School Bus in the Haunted Museum: A Book About Sound* (Scholastic, 1995). Relate the relevance of the material presented in the book to the concepts studied in class.

•Read *Whistle for Willie* by Ezra Jack Keats. Ask students to try to whistle. Pair up whistlers with non-whistlers and have them explain how their techniques contribute to success.

•Choose a story with which the children are familiar and that suggests a variety of sounds. Encourage the students to create sound effects to go with the story as the teacher reads.

MUSIC
•Read *The Orchestra* by Mark Rubin and Alan Daniel. Have students create their own musical instruments and create a performance.

•Select a word for the students to chant. Establish hand signals for loud, soft, fast, and slow. Conduct the chant using the hand signals to vary the sounds.

•Ask older band students to visit your class with their instruments to show children how sounds are produced and altered in various instruments.

•Ask students to listen to recorded music and to identify instruments by their pitch.

•Allow students to make recordings of themselves playing the instruments they made along with a tape or CD of their favorite music.

•Allow students to record various sounds they make on a tape recorder. Challenge them to create a mystery activity for others.

Math

•Create simple sound patterns by clapping, snapping, and tapping.

•Ask students to number their bottle caliopy and then write down the numbers that will allow others to play a tune.

PE

•Using a few objects to make sound patterns, have students do specific movements to particular sounds. For example, they hop when you ring a bell, stop when you tap sticks, and run when you blow a whistle.

•Have students use responsive body movements to different sounds. Play different kinds of music and allow them to create dance movements to each sound.

SOCIAL STUDIES

•Read *What's That Noise?* By Michele Lemieux. Invite a naturalist to talk about different animal sounds with students or have a short video available for students to watch about animal sounds.

•Make a list of jobs that involve listening to sound such as piano tuner, musician, and doctor. If possible have one of these professionals visit the classroom to discuss how sound affects his/her work.

•Check for naturalist activities on sound if you have the curriculum guides from these programs:
-Project Learning Tree   http://www.plt.org
-Project WILD   http://www.projectwild.org
-Project Aquatic WILD   http://www.projectwild.org
-Project W.E.T.   http://www.projectwet.org/

3rd Grade Sound – Essential Ideas

Major Ideas	My Notes
Sounds are produced by vibrating objects and vibrating columns of air.	
Pitch and volume are two characteristics of sound. They are different from each other.	
Pitch refers to how high (like a whistle) or how low (like a tuba) the sound is.	
The faster the vibration, the higher the pitch will be. The slower the vibration, the lower the pitch will be.	
Changing the length, tension, or thickness of a string affects the frequency of vibration, and therefore, the pitch of the sound.	

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GALLERY WALK -- Sound

1. **Name an instrument that can make both high-pitched and low-pitched sounds. Tell what must be done to change the pitch produced by the instrument.**

2. **Name something that makes a very loud sound. Explain why it is able to produce so much volume.**

3. **Name something that can only make a very soft sound. Explain why it is unable to produce a louder sound.**

4. **Name something that can make a very low pitch with a lot of volume.**

5. **Name a sound that you consider noise. Explain why you don't like it.**

6. **Invent an instrument that will make a very high-pitched sound and tell how you will design it.**
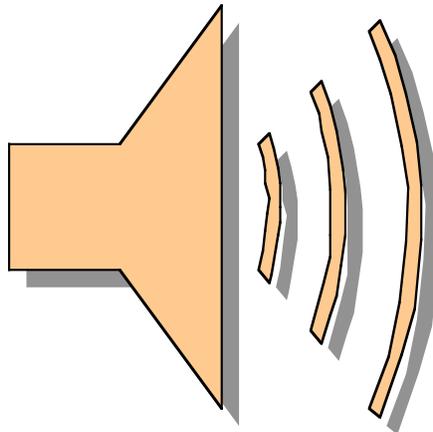
GALLERY WALK -- Sound

Invent an instrument that will make a very high-pitched sound and tell how you will design it.

1. A uka-tar. It will be like a small guitar, but made of metal with only a tiny air hole. The strings will be so thin and short that they have to move very vast and make only high sounds.

2. A Flistle. We will get a tiny metal tube and flatten one in for blowing. The tube will be short and have several holes. The air moving through the tube will vibrate fast and make a shrill sound.

3. A bongum. We'll start with a little metal bowl. We will cover it with a piece of thin stretchy rubber. We'll make it real tight so that when you pound on it the rubber will move fast and make a high sound.

4. A Cylinblow. We are going to fill a graduated cylinder almost full of water and then blow across the top. The small amount of air will vibrate fast and make a high-pitched sound.

5. Heelshrills. We are going to put shoes with rubber heels on several kids and have them drag them across squares of floor tiles. The friction makes the air vibrate quickly, and the sound is squeaky.

6. A squeeny. Take a teeny metal tube square that is held up with a piece of leather. Hit the square with a tiny rod made of metal. The metal will vibrate very fast and make a really high-pitched sound.

Designing a Tiered Assignment

Procedures for Developing a Tiered Activity

10. Select the concept, skill, or generalization to be addressed.
11. Determine the students' readiness and/or interests.
12. Create an activity that challenges most students, is interesting, and promotes understanding of key concepts.
13. Vary the activity appropriately for students with fewer skills.
14. 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. Ensure that each student is assigned a variation of the activity that corresponds to that student's readiness level.

Low Prep Tiering:

• Choices of reading material and/or reading buddies
• Number of steps involved
• Time Allotment
• Supplemental materials (calculator, dictionary, note cards, etc.)
• Mini-teacher led workshops to teach or re-teach skills
• Varied levels of questions (Bloom's Taxonomy)
• Others? _____

Higher Prep Tiering:

• Learning/Interest centers
• Audio/visual resources
• Cubing
• Project/portfolio assignments
• Varied levels of knowledge demonstration (Bloom's Taxonomy)
• Others? _____

Tiered Activities
To Vary the Level of a Lesson

Subject Area: **Grade Level:**

Outcome/ Performance Indicators			
Assessment			
Instruction/ Learning Activity			
Resources			
Assignments			

Pre-assessment:

Ross School's Differentiated Instruction (DI) Program
by Diana Abbati, DI Mentor

Kindergarten
- Reading - flexible skills grouping (lunch bunch & class groupings)
- Writing - Open-ended writing and seatwork assignments
- Math - whole group is introduced to a skill followed up by small group instruction for either remediation, practice, or enrichment.
- Skill based small group instruction and individualized instruction.

1st Grade
- Reading - reader's workshop, guided reading, and small group instruction based on ability grouping, trade books
- Writing - Writer's workshop and journals with opened ended writing prompts
- Spelling - individualized spelling where students choose words from set lists
- Math - individualized math folders
- Homework - optional monthly challenge packets

2nd Grade
- Reading – ability grouping based on readiness and learning profile, guided reading, leveled trade books, Reader's Workshop
- Writing - Writer's Workshop, individualized based on skills, open-ended writing prompts, leveled spelling lists, open ended oral reports
- Math - differentiated learning groups based on skill, enrichment activities, and individualized math folders for all students
- Science – Investigation and Experimentation through project based learning
- Social Studies – non-fiction literature and expository writing (individualized pacing depending upon readiness and interest)
- Homework - enrichment writing and math activities
- Drama – Thanksgiving Poetry Recital

3rd Grade

- Reading - flexible grouping, higher level thinking questions, leveled trade books
- Writing - individualized program/expectations for each student
- Spelling - Pretests given. Alternate advanced spelling lists for students demonstrating mastery.
- Math - enrichment sheets provided by text, optional challenge homework packets for advanced math students.

4th Grade

- Reading - reading journals, book reports, higher level questions, oral responses, ability groups with different core literature and response questions, reading logs and book reports at own level
- Writing - individualized workshops, open-ended, high interest level, gem sentences, special challenge spelling group, personal spellers
- Math - target folders, flexible grouping, enrichment sheets provided by text
- Science - Scientific method, compacting, tiered assignments, activities
- Social Studies - compacting, tiered assignments, open-ended activities

http://www.rossschool.net/~diana_abbati.

Tips for Cooperative Learning in the Early Grades

Differences Between Cooperative and Traditional Learning Groups
(adapted from J. Abruscato's Teaching Children Science, 2001)

Cooperative Learning Groups	Traditional Learning Groups
Positive interdependence	No interdependence
Individual accountability	No individual accountability
Shared leadership	One appointed leader
Shared responsibility	Responsibility only for self
Task and process emphasized	Only results emphasized
Social skills directly taught	Social skills assumed and ignored
Teacher observes and intervenes	Teacher ignores group functioning
Groups process their effectiveness	No time for group processing

- Do not assign a cooperative learning activity that could just as easily (or more easily) be done alone. Be sure to create a *positive interdependence* in the way you structure the activity.

- Provide time for small group-building activities that are designed to help students develop awareness of others, build communication skills, foster trust, and provide practice for interacting successfully with others.

- Participation can be encouraged by grouping reluctant students with more nurturing students.

- Be sure that assigned group work is well-thought-out, organized, challenging, and reasonable.

- Help groups learn to write their goals and agree on major steps *before* they begin working.

- Constantly move among groups monitoring, encouraging, and providing feedback.

- If the activity is fun, no other reward may be needed since intrinsic rewards are most fulfilling. However, teachers of young learners may choose to use:
  - verbal praise
  - singing a favorite song
  - an art activity
  - game time
  - other suitable reinforcers
  - activities may be videotaped as a reward

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Flexible Grouping

Rationale:
- Allows both for quick mastery of information/ideas and need for additional exploration by students needing more time for mastery
- Allows both collaborative and independent work
- Gives students and teachers a voice in work arrangements
- Allows students to work with a wide variety of peers
- Encourages teachers to "try out" students in a variety of work settings
- Keeps students from being "pegged" as advanced or struggling
- Keeps students from being cast as those in need of help and those who are helpers

Guidelines for Use:

1.   Ensure that all students have opportunities to work both with students most like themselves and with students dissimilar from themselves in readiness and interest.

2.   Teacher assigns work groups when task is designed to match individual readiness/interest based on pre-assessment or teach knowledge.

3.   Teacher assigns work groups when desirable to ensure that students work with a variety of classmates.

4.   Students select groups when task is well-suited for peer selection.

5.   Alternate purposeful assignment to groups with teacher/student selection.

6.   Ensure that all students learn to work cooperatively, collaboratively, and independently.

7.   Be sure there are clear guidelines for group functioning that are taught in advance of group work and consistently reinforced.

(Tomlinson, 2001, p. 102)

Anchor Activities: on-going assignments tied to the curriculum and for which students are accountable that can be worked on independently throughout a grading period or longer.

Purpose of Anchor Activities:

1.   To provide *meaningful* work for students when they finish an assignment or project, when they first enter the class or when they are "stumped."

2.   To provide *ongoing* tasks that tie to the content and instruction.

3.   To free up the classroom teacher to work with other groups of students or individuals.

Ideas for Anchor Activities

Silent reading (content related)	Learning packets
Listening stations	Class project
"Brain Challenges"	Commercial kits & materials
Researching question	Web Quest
Vocabulary work	Learning/Interest centers
Journal writing	Work on portfolio
Investigations	Learning logs
Skill practice	Personal agendas
Games (content related)	Individual project
Creating learning center materials	Writing book, poem, story,
Illustrating work	Working with manipulatives

Other Ideas for Anchor Activities:

_____

_____

_____

_____

_____

_____

Anchor Activities work best when:

• Expectations are clear and the tasks are taught and practiced prior to use.

• Students are held accountable for on-task behavior and/or task completion and quality

(Carol Ann Tomlinson. Differentiation of Instruction in the Elementary Grades. ERIC Digest . Retrieved from www.**ericdigest**s.org/2001-2/**elementary**.html

• Frequently reflect on the match between your classroom and the philosophy of teaching and learning you want to practice. Look for matches and mismatches, and use both to guide you.

• Create a mental image of what you want your classroom to look like, and use it to help plan and assess changes.

• Prepare students and parents for a differentiated classroom so that they are your partners in making it a good fit for everyone. Be sure to talk often with students about the classroom – why it is the way it is, how it is working, and what everyone can do to help.

• Begin to change at a pace that pushes you a little bit beyond your comfort zone – neither totally duplicating past practice nor trying change everything overnight. You might begin with just one subject, just one time of the day, or just one curricular element (content, process, product, or learning environment).

• Think carefully about management routines – for example, giving directions, making sure students know how to move about the room, and making sure students know where to put work when they finish it.

• Teach the routines to students carefully, monitor the effectiveness of the routines, discuss results with students, and fine tune together.

• Take time off from change to regain your energy and to assess how things are going.

• Build a support system of other educators. Let administrators know how they can support you. Ask specialists (e.g. in gifted education, special education, second language instruction) to co-teach with you from time to time so you have a second pair of hands and eyes. Form study groups on differentiation with like-minded peers. Plan and share differentiated materials with colleagues.

• Enjoy your own growth. One of the great joys of teaching is recognizing that the teacher always has more to learn than the students and that learning is no less empowering for adults than for students.

Internet Sites for Differentiated Instruction

Teach-Nology the Web Portal for Educators:
http://www.teach-nology.com/currenttrends/alternative_assessment/

CEC Information Center on Disabilities and Gifted Education:
http://ericec.org/faq/gt-nurt.html

Multiple Intelligence Resources for Teachers:
http://www.proteacher.com/040009.shtml

Tiered Curriculum Project
http://www.doe.state.in.us/exceptional/gt/tiered_curriculum/welcome.html

Adapt Lessons to Reach All Students
http://www.teachervision.fen.com/teaching-methods/special-education/3759.html

Enhance Learning With Technology
http://www.enhancelearning.ca

"Extending Children's Special Abilities - Strategies for primary classrooms"
http://www.teachers.ash.org.au/researchskills/dalton.htm

Tiered Instruction: 3 - 5 Examples
http://wblrd.sk.ca/~bestpractice/tiered/examples2.html

CAST Differentiated Instruction
http://www.cast.org/publications/ncac/ncac_diffinstruc.html

LIST OF RELATED CITATIONS
"DIFFERENTIATED INSTRUCTION FOR ELEMENTARY GRADES"
PRESENTED FOR STAFF DEVELOPMENT FOR EDUCATORS (SDE)
BY DR. DEBBIE SILVER

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