A Treasure Chest

# of Differentiation Strategies

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Linda Holdorf
AIMS Ed. Specialist (meldorf@charter.net)

Agenda

- Warm-Up: *That Describes Me!*
- Pre-assessment: *Human Continuum*
- Differentiation Basics
- Stuffing Your Treasure Chests
  - Essential/Unit Questions
  - Anchor Activities
  - Pre-Assessment
  - Learning Styles/Multiple Intelligences
  - Adjusting Questions
  - Think-Tac-Toe/Choice Boards
  - Orbital Studies
  - Cubing
  - Vocabulary Options
- Reflection: *Gallery Walk*

Differentiation of Instruction

Is a teacher's response to learners' needs

Guided by general principals of differentiation

(e.g)

respectful tasks

on-going assessment and adjustment

flexible grouping

etc.

teachers can differentiate

CONTENT ***PROCESS*** ***PRODUCT***

according to students'

READINESS ***INTEREST*** ***LEARNING PROFILE***

through a range of instructional and management strategies.

WHAT IS CURRICULUM DIFFERENTIATION?

"In differentiated instruction, classroom teachers make vigorous attempts to meet students where they are in the learning process and move them along as quickly and as far as possible in the context of a mixed-ability classroom. It promotes high-level and powerful curriculum for all students, but varies the **content**, **process**, or **product** based on student **readiness**, **interest**, and **learning profile**.

Differentiation seems a common-sense approach to addressing the needs of a wide variety of learners, promoting equity and excellence and focusing on best practice instruction in mixed ability classrooms. **Differentiated instruction is not a strategy**. **It is a total way of thinking about learners, teaching, and learning."**
adapted from *Carol Ann Tomlinson, The Education Digest, Jan. 2000*

WHAT DOES DIFFERENTIATED INSTRUCTION LOOK LIKE?

Differentiated Instruction is...	Differentiated Instruction is not...
1.Assessing students before a unit of instruction to determine what they already know	1.All students in the class completing the same work for a unit/chapter
2. Adjustment of the **core** curriculum by content (below to above grade level), process (concrete to abstract), and product (simple to complex).	2 Limiting how and what is taught by teaching to the average student
3.Providing assignments tailored for students of different levels of achievement	3. Assigning more work at the same level to high achieving students
4. Having high expectations for **ALL** students	4. Focusing on student weaknesses and ignoring student strengths
5. Educational experiences which extend, replace, or supplement standard curriculum	5. Activities that **all** students will be able to do
6. Structuring class assignments so they require high levels of critical thinking and allow for a range of responses	6. Giving the same kind of problems or questions and expecting more
7. Students participating in respectful work	7. Creating more work-extra credit, do when done
8. Students and teachers collaborating in learning	8. Using higher standards when grading
9. Putting students in situations where they don't know the answer- often	9. Providing free-time challenge activities
10. Differing the pace of instruction	10.Using capable students as tutors
11. A blend of whole class, group, and independent learning	11. Using individualized instruction

http://www.manteno.k12.il.us/curriculumdiff/principles

There Are Lots of Ways to Differentiate....

Low Preparation Differentiation	***High Preparation Differentiation***
Choice of Books	*Tiered Activities*
Homework Options	*Tiered Products*
Use of Reading Buddies	*Independent Study*
Various Journal Prompts	*Multiple Texts*
Varied Pacing with anchor options	*Multiple Testing Options*
Student/Teacher Goal Setting	*Alternative Assessments*
Work Alone or Together	*4-MAT*
Flexible Seating	*Course Compacting*
Varied Computer Programs	*Spelling by Readiness*
Design-A-Day	*Varying Organizers*
Varied Supplemental Materials	*Community Mentorships*
Options for Varied Modes of Expression	*Tiered Centers*
Varied Scaffolding	*Interest Centers*
Computer Mentors	*Stations*
Think-Pair-Share by Readiness, Interest, Learning Profiles	*Group Investigations*
Open-ended Activities	*Choice Boards*
Explorations by Interest	*Think-Tac-Toe*
Options for Competition	*Simulations*
Flexible-Learning Groups by Readiness, Interest, Learning Profile	*Students Are Assessed in Multiple Ways*

Use
Essential/Guiding/Unit/Lesson

Questions

To
Line the Treasure Chest

What do essential/unit/lesson questions look like?

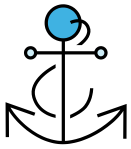
Unit questions…

- Are tied directly to the standards of a specific idea or subject or discipline;
- Have no one obvious right answer;
- Are open-ended to accommodate diverse interests and learning styles and to allow for unique and creative approaches;
- Are framed to provoke and sustain student interest and thought.

How should we use these questions in our classrooms?

- Post them in the classroom, on parent information about a unit, on handouts, and in student notebooks;
- Organize notes and unit information around them;
- Let them questions guide discussions, instruction, and investigations;
- Refer to them repeatedly;
- Ask them questions over and over;
- Share them with other faculty members/your teammates.

Anchor Activities



What are anchor activities?

- specified meaningful activities on which students work independently
- ongoing assignments that students can work on throughout a unit
- on going activities that engage and motivate students to extend their learning

Why use anchor activities?

- provide a strategy for teachers to deal with "ragged time" when students complete work at different times
- they allow the teacher to work with individual students or groups—classroom management is less of an issue
- provides ongoing activities that relate to the content of the unit

When are anchor activities used?

- When pre-assessment indicates student mastery
- to begin the day
- when students complete an assignment early
- when students are stuck and waiting for help

Teacher-Created Anchors	Student-Centered Anchors

Getting Started

1. Teach the whole group to work on an anchor activity independently and quietly. The teacher is not a contact person at this time.

2. Progress to one group on anchor activity and another group on another activity - then flip flop groups. This may be done later in the day or in back-to-back time slots.

Example - One group may be working with the teacher on math manipulatives while the other group works independently on anchor activities.

3. Progress to 1/3 of the class on anchor activities, 1/3 involved in a teacher directed activity and 1/3 working at mini lab on a curriculum related unit.

4. Move to the next stages only when your students are ready. Length of time can be increased at the second stage before moving on to the third stage.

In many classrooms, students work on routine activities like journal writing, vocabulary activities and spelling. These types of activities can used as "Anchor Activities" that are options for students after assigned work is complete. The goal is to have students moving independently from one assignment to another without needing teacher direction.

Anchor activities can be posted within the classroom in a variety of ways. Simply listing the activities on a chart or chalkboard is one method. Below are additional methods of presentation used by teachers.

How can I assess anchor activities?

- Ongoing anecdotal records and checklists
- Student conferences for evaluation and goal setting
- Learning journals
- Student portfolios
- Rubrics
- Random checks
- Peer review

http://wblrd.sk.ca/~bestpractice/anchor/assessment.html

Learning Style and Multiple Intelligence Choices

Differentiation can involve giving choices based on students' learning styles and multiple intelligences. Administering surveys early in the school year will help you know how your students learn best.

Learning Styles

Adapted from Colin Rose (1987). Accelerated Learning.

When you…	Visual	Auditory	Kinesthetic & Tactile
Spell	Do you try to see the word?	Do you sound out the word or use a phonetic approach?	Do you write the word down to find if it feels right?
Talk	Do you sparingly but dislike listening for too long? Do you favor words such as *see, imagine*, and *picture*?	Do you enjoy listening but are impatient to talk? Do you use words such as *hear, tune,* and *think*?	Do you gesture and use expressive movements? Do you use words such as *feel, touch*, and *hold*?
Concentrate	Do you become distracted by untidiness or movement?	Do you become distracted by sounds or noises?	Do you become distracted by activity around you?
Meet someone again	Do you forget names but remember faces or remember where you met?	Do you forget faces but remember names or remember what you talked about?	Do you remember best what you did together?
Contact people on business	Do you prefer direct, face-to-face, personal meetings?	Do you prefer the telephone?	Do you talk with them while walking or participating in an activity?
Read	Do you like descriptive scenes or pause to imagine the actions?	Do you enjoy dialog and conversation or hear the characters talk?	Do you prefer action stories or are not a keen reader?
Do something new at work	Do you like to see demonstrations, diagrams, slides, or posters?	Do you prefer verbal instructions or talking about it with someone else?	Do you prefer to jump right in and try it?
Put something together	Do you look at the directions and the picture?		Do you ignore the directions and figure it out as you go along?
Need help with a computer application	Do you seek out pictures or diagrams?	Do you call the help desk, ask a neighbor, or growl at the computer?	Do you keep trying to do it or try it on another computer?

Multiple Intelligences Surveys

Quick Experiential Activity

1. Write a short poem that you know or make one up.
2. Figure out how long ago was a million seconds.
3. Draw a picture of an animal.
4. Stand by your seat and follow my directions: jump on your left foot 10 times; jump on your right foot 10 times; do ten jumping jacks; high-five your neighbor.
5. Let's all sing "Row, Row, Row Your Boat" together.
6. Turn to a partner and share something nice that has happened to you this week.
7. Close your eyes and think about the happiest moment in your life – you won't have to share with anybody.
8. Think about all the different dogs there are. Write a list of different ways to categorize these dogs.

This is a teacher-dictated survey. Students will need paper and pencil – and should number each activity. It's effective to use before introducing multiple intelligences to your students. Usually, it can be completed in 15-20 minutes. When you're done, go back and review each activity with them, asking them to "*" their favorite and "x" their least favorite. Then do a survey – "who enjoyed # 1 the most?" etc. – kids raise hands -- and using a MI overhead – tell about verbal-linguistic intelligence. Ask for a couple of volunteers to share their responses. Continue through all eight intelligences. I tell them about Howard Gardner and his notion that there are many ways people can be "smart."

Use your imagination to personalize your survey – tie it in to school theme, school mascot, team name/identity, etc.

Multiple Intelligences

Eight Ways of Being Smart

Intelligence Area	**Is strong in:**	**Likes to:**	**Learns best through:**
Verbal-Linguistic	reading, writing, telling stories, memorizing dates, thinking in words.	read, write, talk, memorize, work at puzzles.	reading, hearing and seeing words, speaking, writing, discussing and debating.
Math-Logic	math, reasoning, logic, problem-solving, patterns.	solve problems, question, work with numbers, experiment.	working with patterns and relationships, classifying, categorizing, working with the abstract.
Spatial	reading, maps, charts, drawing, mazes, puzzles, imaging things, visualization.	design, draw, build, create, daydream, look at pictures.	working with pictures and colors, visualizing, drawing.
Bodily- Kinesthetic	athletics, dancing, acting, crafts, using tools.	move around, touch and talk, body language.	touching, moving, processing knowledge through bodily sensations.
Musical	singing, picking up sounds, remembering melodies, rhythms.	sing, hum, play an instrument, listen to music.	rhythm, melody, singing, listening to music and melodies.
Interpersonal	understanding people, leading, organizing, communicating, resolving conflicts, selling.	have friends, talk to people, join groups.	sharing, comparing, relating, interviewing, cooperating.
Intrapersonal,	understanding self, recognizing strengths and weaknesses, setting goals.	work alone, reflect, pursue interests.	working alone, doing self-paced projects, having space, reflecting.
Naturalist	understanding nature, making distinctions, identifying flora and fauna.	be involved with nature, make distinctions.	working in nature, exploring things, learning about plants and natural events.

Application: Choice Board

MI Project Sheet

Presenting What I've Learned

I am choosing the following project to show that I have learned a lot about _____.

- Write a Report
- Build a three-dimensional model
- Present an oral report to the class
- Develop a musical piece to explain it to the class
- Make up a dance that represents what I have learned
- Write and perform a short skit
- Design a chart, graph or a mind map
- Engage in a debate or discussion with another student and then write down the main points
- Keep a Daily diary / journal about this subject
- Compile a scrapbook
- Make an art project and explain the project in writing
- Produce a videotape segment
- Research the subject and write the information down
- Set up an experiment and show / explain it to the class
- Teach a small group of my classmates about the information
- Develop a project not listed above:

Below is a brief description of what I intend to do:

Adjusting Questions

What is it?
A teacher, in class discussions, tests, and/or homework, adjusts the sorts of questions posed to learners based on their readiness, interests, and learning profile. This strategy is an excellent "get your feet wet" differentiation strategy because it builds on strengths and abilities readily used by most teachers.

Why use it?
All students need to be accountable for information and thinking at high levels. Students will be challenged by different types of questions. Some require more basic thought questions; others will be challenged by a question that requires speed of response, large leaps of insight, or remote connections. Teachers can use varied sorts of questions as one means of assessing student progress and readiness. Adjusting questions appropriately helps nurture motivation through success; it also allows all students to hear and learn from a wide range of oral responses.

How to use it?
Depending on student readiness and learning styles, ask specific questions to certain students, and "open the floor" for other types of questions. Use open-ended questions where possible. Use wait time before allowing students to respond. When appropriate, give students an opportunity to talk with a thinking partner before giving answers (think-pair-share). Encourage students to build on one another's answers. Require students to explain and defend their answers. Adjust the complexity, abstractness, degree of insight required, time constraints, and connections required between topics, based on learning profile and readiness level of the student being asked the question.

Extension:

- Put six posters on the walls (based on Bloom's taxonomy) one for Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. These are useful cues for me when conducting class discussions and useful for my students when they were required to develop their own research questions. Different students may be referred to different posters at certain times depending on ability, readiness or assignment requirements.
- Use Costa’s three levels of questions
- With written quizzes the teacher may assign specific questions for each group of students. They all answer the same number of questions but the complexity required varies from group to group. However, the option to go beyond minimal requirements can be available for any or all students who demonstrate that they require an additional challenge for their level.

Making a Good Question!

Throughout the year I will ask you to develop questions for the material that we work with. It's true that there is no such thing as a bad question, but some are definitely better than others. This year we'll work on using questions which require some serious brain activity! Look below to get some ideas.

Art Costa is an educational researcher who has divided up questions into three categories depending on the quality of the question. He claims that if we just use the verbs listed below we'll be come better questioners, which in the end, also makes us better thinkers! So start using them!

Costa's Levels of Inquiry

Level 1: Basic Input / Gathering Information - These questions are NOT the kind we will use. These are the kinds of questions you can usually just answer by digging through a book or the internet. Don't waste everyone else's time with these questions.

Ex. How old is George Washington?

Complete Count Match Name Define Observe Describe Identify List Select Recite Scan

Level 2: Processing Information - Now you're cookin'! This is the first level where good, solid, thought-provoking questions occur. These questions ask people to take a piece of information and to use it with other information they already have.

Ex. Who was a better leader George Washington or John Adams?

Compare Contrast Classify Sort Distinguish Explain Why Infer Sequence Analyze

Level 3: Creating Your Own Ideas - If you can make good solid level-three questions, you really know you're stuff! This not only asks you to put the new and the old information together like a level two, but it also asks you to use that information to make new knowledge!

Ex. What would have happened to America if George Washington had not been elected as our first president?

Evaluate Generalize Imagine Judge Predict Speculate If/Then Apply the Principle Hypothesize Forecast Idealize

(http://members.cox.net/2smbschool/entry) Used with permission.

Think Tac Toe

Think-Tac-Toe is a differentiation strategy that organizes learning activities/ projects/assignments in the fashion of the popular game, "Tic Tac Toe." Students are presented with a menu of activities and allowed to select three activities, usually in a row.

Teachers may design activities based on students' learning styles, intelligences, readiness, and/or interests.

Teachers may have students do the work independently or in groups.

This strategy is sometimes referred to as a choice board.

Advantages:

- Students have choice in projects/activities.
- Teacher can differentiate content, process, and product according to the students' readiness and learning styles.

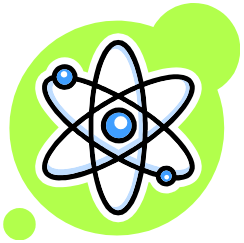
Think-Tac-Toe Example

Teresa Morgan, sixth-grade language arts teacher, used this think-tac-toe board for lessons about work and energy. This differentiates according to interest, pace, and learning style and varies content, process, and product.

Directions: Choose THREE of the following activities to complete. These activities should create either a vertical, horizontal, or diagonal line.

1. Read the first two chapters of The Littles and the Trash Tinies by John Peterson. On your chart, write the simple and compound machines mentioned in the story.	2. Using different heights of inclined planes, predict, measure, and record the distance a marble will travel on the different inclined planes. Discuss potential and kinetic energy.	3. "Keep Your Bearings in Mind" as a book is rotated on top of marbles on a paint can. Use different amounts of marbles to experiment which moves easier.
4. Take a small, inexpensive wind-up toy apart to better understand cause and effect. Find three parts that move other parts.	5. "Go Web Walking" on the suggested Internet sites to find information on friction.	6. At home, try on lots of shoes with different tread patterns to "Put Your Best Foot Forward." Try walking on different surfaces such as tile or carpet. Which have more traction
7. Go to the "Don't Get Too Wound Up" center. Record the distance a car will travel on different surfaces.	8. "Quick Lube" involves using different items to open jar lids, after predicting what should happen. Record the results.	9. Make a collage of simple and compound machines or a drawing of a machine you have invented.

Orbital Studies



- Independent investigations, usually from 3-6 weeks
- They "orbit" or revolve around some facet of the curriculum.
- Students select their own topics and work with guidance and coaching from the teacher.
- Much of the work on orbitals is completed at home. However, when class work is completed, students may use the extra time to work on their orbital studies.
- Students present orbitals they have completed to small groups in the class.
- Peers may sign up to attend a presentation in which they are interested.
- Students not attending the presentation may work on their own projects, catch up on missing class work, or use the time to get peer help on some of their work.
- Orbitals allow differentiation of content (students select their own topics and research materials), and product (students can select from a wide range of options about how to express their learning.
- Orbitals allow students to exercise choices in what to study and how to share what they learn.

Getting Started:

- Develop a list of topics related to a concept or theme in your subject area.
- Allow each student to select a topic based on interest.

Options:

- **Let's Make a Deal Project!**
- **I-Search Projects (www.turningpts.org)**

Cubing

Cubing is a versatile strategy which allows teachers to plan different activities for students or groups of students based on their readiness, learning, style, and/or interests. Cubing gives students the opportunity to construct meaning about a given topic through six different ways. It can be used in all disciplines. Each side of the cube asks the student to use different thinking processes:

What is it? Cubing is a versatile strategy, similar to a contract, which allows you to plan different activities for different students or groups of students based on student readiness, learning style, and/or interests. You will create a cube—usually different colored cubes for different groups of students. On each of its six faces, you will describe a different task related to the subject and/or concept being learned.

Why use it? Cubing provides a way for all students to explore one important topic or idea but to accomplish tasks at their readiness levels, in their preferred learning styles, and/or in areas of personal interest. All students are working on activities dictated by their cubes; the activities are differentiated for individual students or groups of students. Groups are very flexible. One cubing activity might group gifted learners for more challenging, higher-level activities; another cubing activity might group gifted and non-gifted students alike according to their interests.

How to use it? Print out the blank cube template with these instructions. Then think of many different commands which might go on the faces of a cube (describe, diagram, apply, analyze, connect, argue, evaluate, and create, for example).

Example #1: To differentiate according to different levels of student readiness, two or more different cubes could be created with the same commands but with tasks at different levels of difficulty. Using "Describe" as the command, the task might be to describe the rainforest using as much information as you can and involving as many of your senses as possible in your description. Using the same command, you might ask the students to describe how their life would change if they moved to the canopy of the rainforest, using as many of their senses as possible in their description and being sure to explain why these changes would take place.

Example #2: To differentiate an activity according to interest or learning profile, you might set up several cubes for a single review activity. Two or three faces on all the cubes might be identical. The remaining faces on one of the cubes might contain tasks appropriate for students who enjoy writing (creating a poem, writing a journal entry, creating a pun). Another cube might be better for oral learners, with tasks such as telling a story, presenting arguments for or against, or writing a song. You might create a third cube with activities which appeal to students with spatial strengths-making models, drawing or sketching, or making a Venn diagram with pictures rather than words.

To differentiate instruction through the strategy of cubing, you will create different activities for different cubes. You would then assign students to tables with cubes that match their specific needs and abilities. Each student rolls a cube a specific number of times, and the face that points up on each roll becomes a task for a student to complete.

Variation: Use a dice.

Have a cubing questioning activity during class. Depending upon the number rolled, the teacher poses a question based upon Bloom's Taxonomy.

Math Example

1. List / Define…
2. Explain / Provide Examples of…
3. Compute / Graph…
4. Compare / Contrast…
5. Combine / Create / Write a Word Problem…
6. Assess / Critique / Evaluate the Usefulness of…

Advantages:

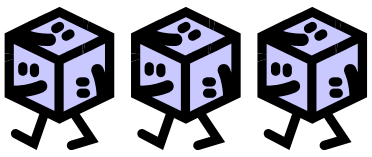
- This process ensures that each level of Bloom's Taxonomy is addressed during class.
- Students enjoy rolling the dice.

Variation: Think Dots

A Think Dots set consists of six cards that are hole punched in one corner and can be held together with a notebook ring and flipped through easily. Each card has one or more dots on the front (up to six…corresponding to the numbers on a dice). On the back of each card is a question or task that asks students to work directly with important knowledge, understanding, and skill related to the topic being studied.

They can be used to respond to learning profiles by developing prompts based on varied intelligence preferences, requiring different modes of expression, or even by encouraging students to work alone or collaboratively with the tasks. They can also invite learners to apply key ideas and skills based on interest or choice.

Students roll the die and complete activities marked with dots that correspond to the dots rolled on the die. Each student then records answers or results in their activity log and attaches any additional material required to show work process, steps in thinking, resources consulted, etc.



Vocabulary Options

Rationale: Children need motivating ways to learn and retain new vocabulary at their own level. These activities ensure that students explore ideas at a level that builds on their own prior knowledge and motivates them to learn independently.

Benchmarks: Language Arts/Reading

DI Strategy: Anchor activity; Tiered Assignment

Differentiate What? Readiness and Interest

Differentiate How? Content, Process and Product

Resources needed:
Prepared copies of vocabulary strategies (see those included)
Vocabulary logs or notebooks for students to record strategies

Teacher preparation: The teacher models a variety of research-based vocabulary strategies. Teachers may use the templates included with this activity or students may make their own.

Explanation of activity: This can be used as a daily Anchor Activity. Students or teachers select words from the novel or text they are currently reading. Students need to understand that when they complete a given assignment, they must automatically move to an anchor activity and work on that activity with care and concentration. The following choices will be given from research-based vocabulary strategies:
a. Frayer Model
b. Using Sentence Stems to Describe a Word
c. Writing Your Own Definition

Teacher's Role: The teacher will be free during this activity to work with individual students or small groups.

http://www.tandl.leon.k12.fl.us/lang/Voc_Project_00_01.pdf

Madeleine Rehder and Joy Glass Kate Sullivan Elementary

Vocabulary Options Examples

(1) FRAYER MODEL

NAME_____ DATE _____

Definition (in own words) Draw a picture

Examples (from own life) Non-examples (from own life)

(2) USING SENTENCE STEMS TO DESCRIBE A WORD

Name_____ Date_____

HOW CAN I DESCRIBE THIS WORD?
It's kind of like a _____.
It looks like a _____.
It's when you _____.
It's where you go to _____.
It smells like _____.
You use it when you _____.

(3) WRITING YOUR OWN DEFINITION (Word Chart)

Name_____ Date_____

Word: _____

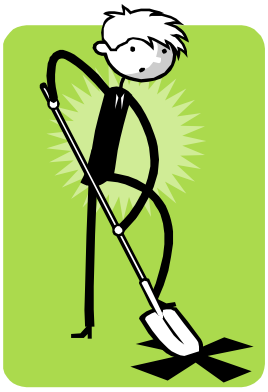
Things I know about the word:

General category this word might belong in:

Examples or other related words:

My definition:

Benchmarks for Success with Differentiated Instruction



Move slowly to become comfortable with managing differentiated instruction.

Year One: Select a few low-prep strategies with which you're comfortable and select one high-prep strategy per unit or semester to add to your repertoire.

Year Two: Hone the strategies from Year One and add one or two more low and high-prep strategies.

Year Three & After: "In the above cumulative way, you can work your way to a highly differentiated classroom in four or five years, without feeling absolutely frenzied along the way."

Adapted from Tomlinson, *How to Differentiate Instruction in Mixed-Ability Classrooms, ASCD, 2nd Ed., 2001, pp. 33-34.*

Some Helpful Differentiation Web Sites
(In no particular order!)

http://www.rcs.k12.tn.us/rc/instruction/ttt/ttt.htm Site has samples of think tac toe.

http://intranet.cps.k12.il.us/Assessments/Ideas_and_Rubrics/Rubric_Bank/rubric_bank. html Be sure to check out this rubric bank from Chicago Public Schools; it's good!

http://www.doe.state.in.us/exceptional/gt/tieredcurriculum/welcome.html A great source for tiered examples (content, process, product) as well as for a rubric for your tiered lessons

www.wku.edu/gifted/differentiation.ppt
A powerpoint presentation with many examples of think-tac-toe.

http://www.dcmoboces.com/dcmoiss/staffdev/oinit/dile/didocs.htm
Site for templates for cubes, learning contracts, tiered activities, and anchor activities

http://www.mcps.k12.md.us/departments/eii/eiiscrapbook.html Site with photographs of differentiation strategies in use; look for cubing activities.

http://www.bsu.edu/teachers/services/ctr/javits/Instruction/Cubing.htm Examples of on-level cubing activities; you'll need to modify up and down; a template for making your cube.

The Jigsaw Classroom
http://www.jigsaw.org/ There are some interesting perspectives at this web site.