

Compacting the Curriculum for High Ability Learners

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What is Curriculum Compacting?

1. Closely and firmly united or packed together; dense
2. Occupying little space compared with others of its type
3. Brief and to the point; concise.

Curriculum Compacting is an instructional technique that is specifically designed to make appropriate curricular adjustments for students in any curricular area and at any grade level.

(Renzulli & Reis, 1997, p. 89)

In Practical Terms...

Curriculum Compacting is used to **modify** and/or **streamline** the regular curriculum to **eliminate** repetition of previously mastered material, upgrade the challenge level of the regular curriculum, and provide time for enrichment and/or acceleration activities.



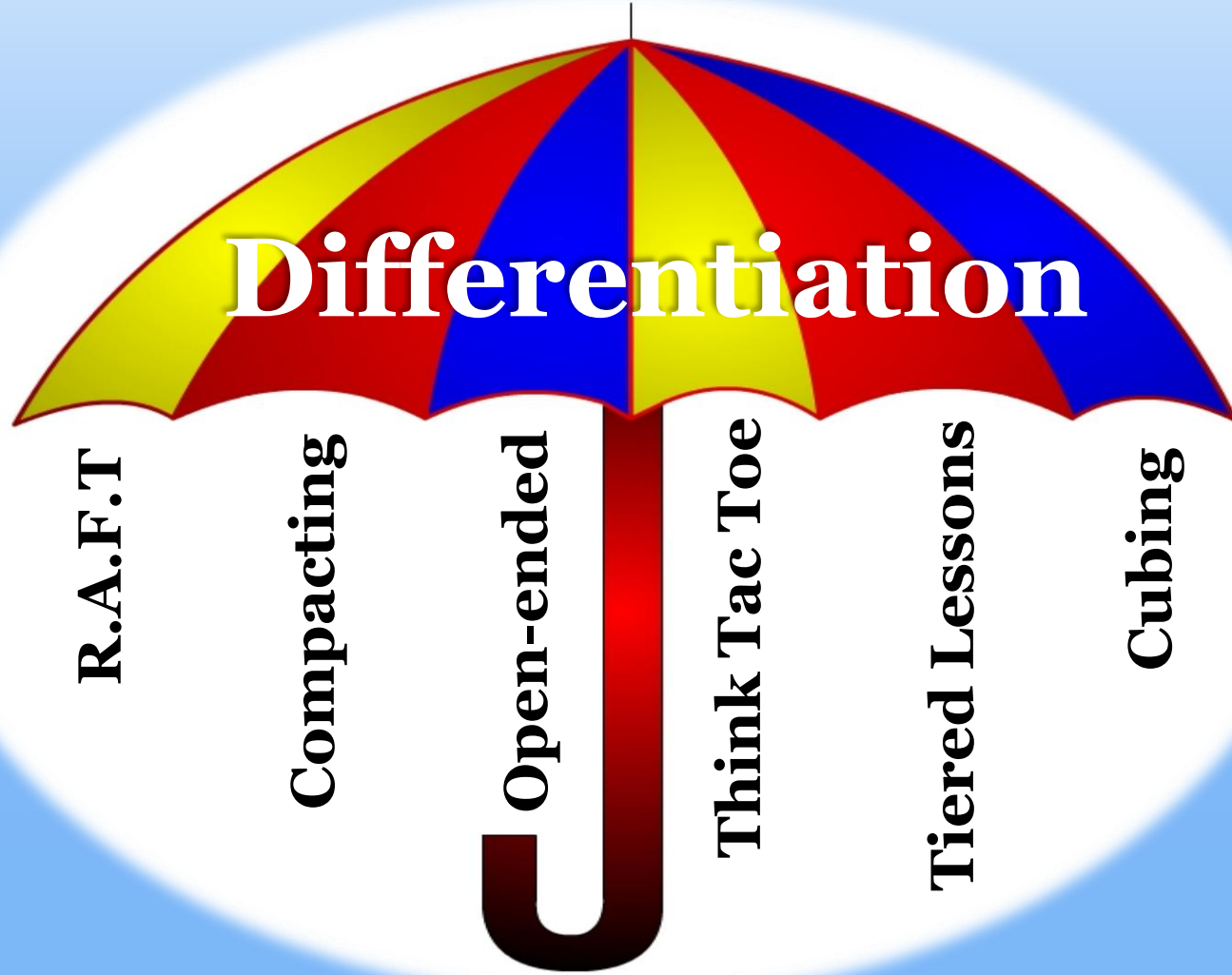
Every child
deserves an
appropriate
education,
even high
ability children.



Goals of Compacting

- **Define objectives and guarantee proficiency in basic curriculum**
- **Create a challenging learning environment in the classroom**
- **Find time for alternative learning activities based on advanced content and individual student interest**

Compacting's Role in Differentiation...



Differentiation and Vygotsky

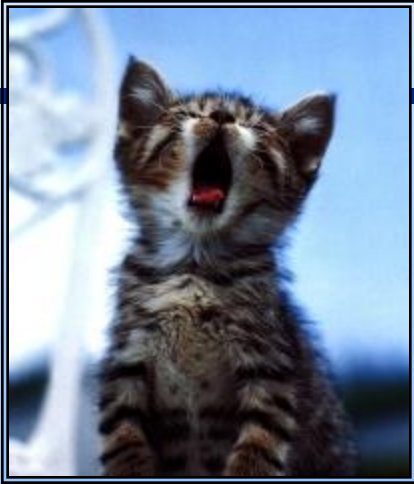
Allows each student to work in his or her zone of proximal development (state of moderate challenge)

Actual development level as determined under guidance or in collaboration with more capable peers

ZPD

Actual development as determined by independent problem solving

ZPD



Too Easy

- Already knows
- Gets it quickly
- No effort needed

Moderate Challenge

- Know something
- Have to think
- Must persist
- Effort leads to success

Too Hard

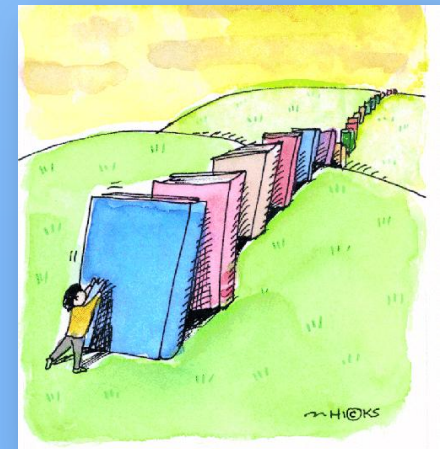
- Don't know where to start
- Missing skills
- Can't solve
- Makes no sense



Why Compact?

78 to 88% of 5th and 6th grade average readers could pass pretests on basal comprehension skills before these were covered in the basal.

Barbara M. Taylor & Barbara J. Frye, *The Reading Teacher*, November, 1988.



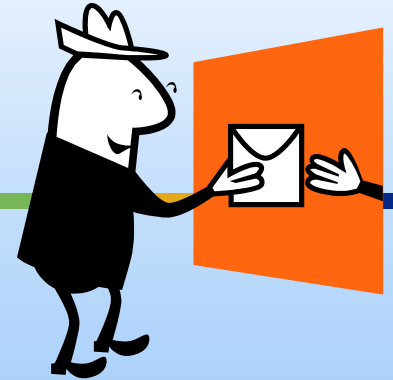
Why Compact?

A sample of United States publishers agreed that their textbooks had dropped two grade levels in difficulty over the last 10 to 15 years, according to the *Los Angeles Times*.

Michael W. Kirst, *Phi Delta Kappan*, September, 1982.

ON THE WHOLE, the later the copyright dates of textbooks for the same grade, the easier they are, as measured by indices of readability level, maturity level, difficulty of questions, and extent of illustration.

“Flat Stanley” by Jeff Brown



The envelope fit Stanley very well. There was even room left over, Mrs. Lamchop discovered, for an egg-salad sandwich made with thin bread, and a flat cigarette case filled with milk. They had put a great many stamps on the envelope to pay for both airmail and insurance, but it was still much less expensive than a train or airplane ticket to California would have been.

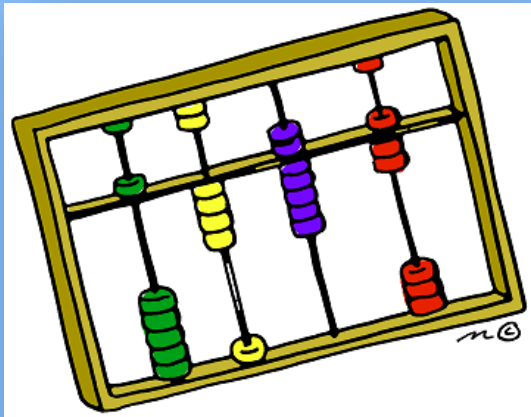
Flat Stanley: in a basal reader

The envelope fit
Stanley very well.
There was even room
left over for a
sandwich.



And...

“Sixty percent of the 4th graders in the wealthier communities were able to score over 80% on a test of the content of their math text *before* they had used it for the school year.”



EPIE Institute

In a nutshell...

Reduce:

- **Inattentiveness**
- **Underachievement**
- **Discipline Problems**



Increase:

- **Learning**
- **On Task Behavior**



Types of Compacting – Basic Skills



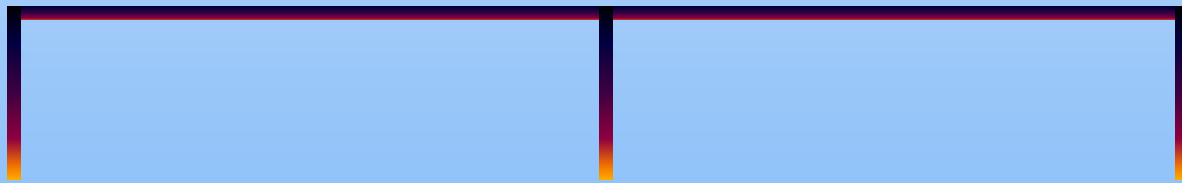
- **Eliminates specific skills that students have already acquired**
- **Mathematics, Spelling, or Grammar**
- **Pre-testing is easier to accomplish**
- **Mastery can be documented more easily and objectively**

Types of Compacting – Content Skills



- **Social Studies, Science, and Literature**
- **Students may already know the objectives or may be able to read the material and master the objectives in a fraction of the time**
- **More flexible – students can absorb the material at their own speed**
- **Evaluation may be less formal – could be essays, interviews, or open-ended tasks**

Teachers can differentiate by



Content

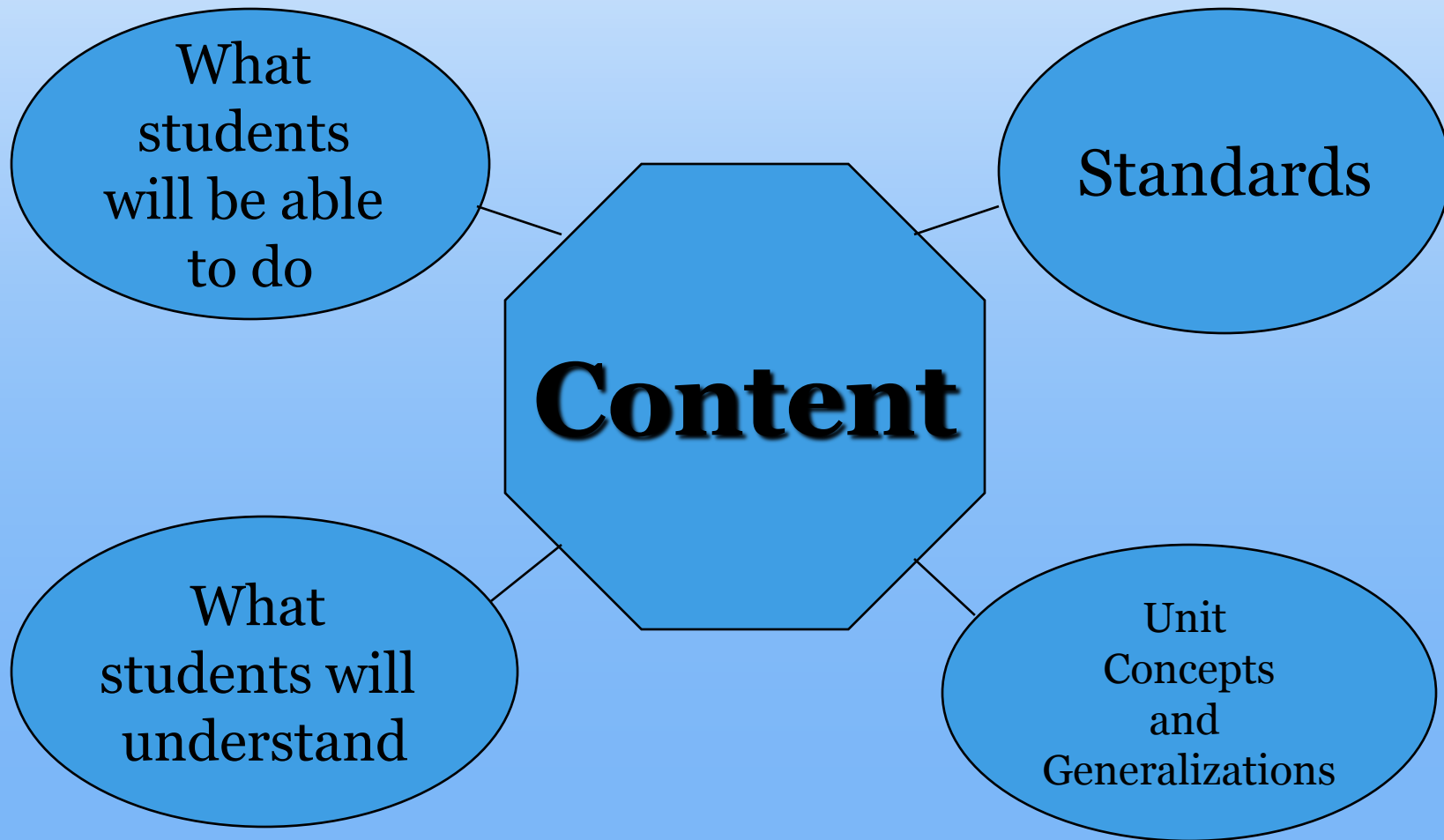
Curriculum Depth (what)

Process

Instructional Techniques (how)

Product

End Product



**Pace of
Instruction**

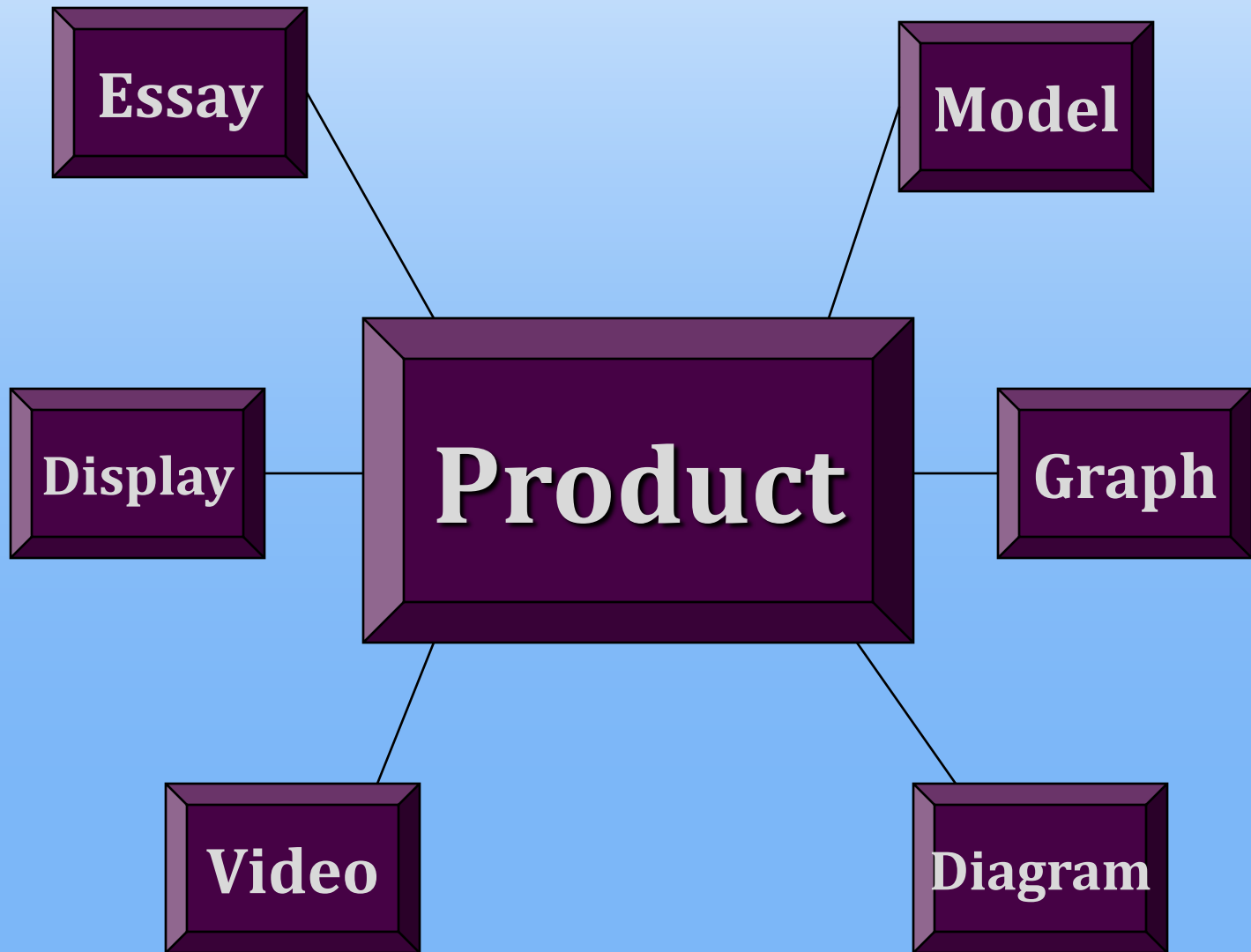
Materials

Process

**Tiered
Activities**

**Learning
Contracts**

**Flexible
Grouping**



Who needs Compacting?

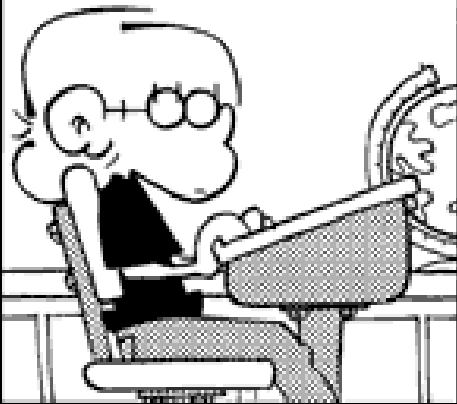
US Office of Education Definition

Gifted students are “children and youth with outstanding talent who perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment.”

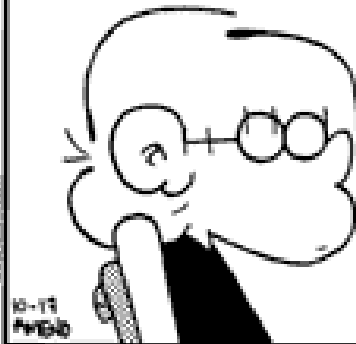
(U.S. Department of Education, 1993, p. 3).

Clueless...

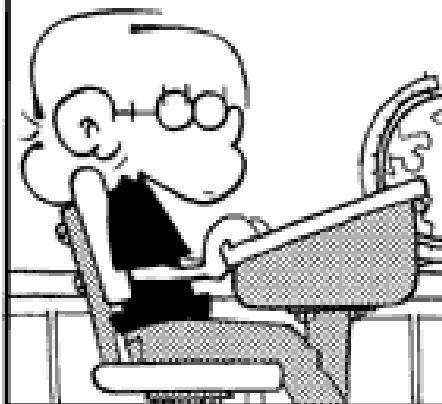
IF A CLASSROOM
HAS 20 STUDENTS...



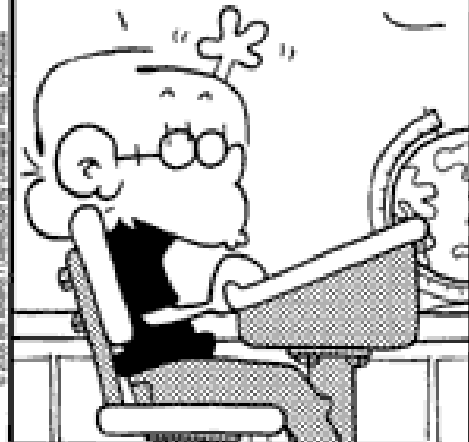
AND DAY AFTER DAY,
ONE PARTICULAR STUDENT
BLURTS OUT THE ANSWER
TO EVERY SINGLE
QUESTION...



HOW ANNOYED
WILL HIS TEACHER
BE?



OOO! OOO! I'M GUESSING
I KNOW! YOU DON'T,
I KNOW! JASON.



Indiana Code

IC 20-10.1-5.1-2: "high ability student" :

- (1) performs at, or shows the potential for performing at, an outstanding level of accomplishment in at least one domain when compared to other students of the same age, experience, or environment; and
- s(2) is characterized by exceptional gifts, talents, motivation, or interests.

Joseph Renzulli

– two kinds of giftedness

**Schoolhouse
Giftedness**



**great success in test-taking
and lesson-learning**

**Creative-
Productive
Giftedness**



**areas of human activity
where a high value is
placed on the development
of original material and of
products designed to
suit defined audiences**

Bright Child

Knows the answers
Is Interested
Is Attentive
Has good ideas
Works hard
Answers the questions
Top group
Listens with interest
Learns with ease
6-8 repetitions for mastery
Understands ideas
Enjoys peers
Grasps the meaning
Completes assignments
Is receptive
Copies accurately
Enjoys school
Absorbs information
Technician
Good memorizer
Enjoys straight forward presentation
Is alert
Is pleased with own learning

Gifted Learner



Asks the questions
Is highly curious
Mentally & physically involved
Has wild, silly ideas
Plays around, yet tests well
Discusses in detail, elaborates
Beyond the group
Shows strong feelings & opinions
Already knows
1-2 repetitions for mastery
Constructs abstractions
Prefers adults
Draws inferences
Initiates projects
Is intense
Creates a new design
Enjoys learning
Manipulates information
Inventor
Good guesser
Thrives on complexity
Is keenly observant
Is highly self-critical

PEANUTS/Charles Schultz

IF SHE READS TO US AGAIN ABOUT DICK AND JANE, I'LL GO CRAZY..



YES, MA'AM, I THINK THE CLASS MIGHT LIKE TO HEAR THE PART WHERE ANNA KARENINA THROWS HERSELF UNDER THE TRAIN..



ALL RIGHT, LET'S HEAR HOW DICK AND JANE ARE DOING..



Student Behaviors Suggesting that Compacting may be Necessary



- Finishes tasks quickly
- Appears bored during instruction time
- Creates own puzzles, games, or diversions in class
- Regularly daydreams
- Has consistently high performance in one or more academic areas
- Remarkably high tests scores despite average or below-average class work
- Asks questions that indicate advanced familiarity with material
- Uses vocabulary and verbal expression of higher grade level
- Expresses interest in pursuing alternate or advanced topics

(Starko, 1986, p. 35)



Compacting Steps

1. What to do you want them to know?
2. What do they know?
3. Offer enrichment or acceleration activities to those who already know it.
4. Keep records for accountability.



<http://www.gifted.uconn.edu/siegle/CurriculumCompacting/INDEX.HTM>

Step 1: Questions to ask as you plan



Will what I have planned...

- ❑ **Enable students to learn material well?**
- ❑ **Meet all of the student's needs?**
- ❑ **Be necessary for all students?**
- ❑ **Meet the needs of students who learn quickly?**

How will I know that students have mastered material?

Step 2: The Value of Assessment or ...



**You can't figure out what to teach 'em
if you don't know 'em!**

- Interest Inventories**
 - Me, Myself, and I**
 - Interest-a-lyzer**
- Learning Profile Inventories**
- Preassessment Options - Ensure
the Mastery of Basic Skills!**

Me, Myself and I!

A Learning Profile and Interest Inventory

My Name

My Teacher's Name

My Grade

This booklet is about you! This is an interest inventory, a series of questions about subjects you like best in school and activities you prefer to do outside of school. The answers to the questions should be your answers, not your friend's or neighbor's. The reason we are asking you to complete this inventory is so we can get to know you better. If we know what fascinates you and how you like to learn best, we can help to make your days in school more interesting and successful.

Thank you and have fun!



School Subjects

Circle the smiley face that shows best how you feel about each of the subjects listed below:

Art					
Geography					
Gym					
Math					
Music					
Reading					
Science					
Social Studies					
Writing					

Interests

Use numbers to rank the areas below. Put a 1 next to your favorite activity, a 2 next to your second favorite, etc.

Acting	
Arts & Crafts	
Cartooning	
Creative Writing	
Community Service	
Dancing	
Geography	
History	
Music	
Science Experiments	
Technology/Computers	
Other _____	

Here are some topics that I would love to learn more about:

Working with others: Some people like to work alone, some people like to work with others. How about you? Circle the smiley face that best describes you.

I like to work alone.



I like to work with one other child.



I like to work with an adult.



I like to work with a small group.



I like to work with a whole class.



Ensure the Mastery of Basic Skills:

Mastery

Recognition of situation requiring repeated addition, uses multiplication to shorten solution process

Uses variety of basketball passes depending on best strategy for the moment

Explain role of any word in sentence & explain how role changes based on placement

Not Mastery

Can automatically recite multiplication facts

Primarily uses the bounce pass in basketball regardless of its potential effectiveness

Can match parts of speech to its definition

Wormeli, 2006

Mastery of Concepts

- What content could you compact?
- What objectives?
- What would indicate mastery?



A word about Pre-assessment

Talk to the students about it:

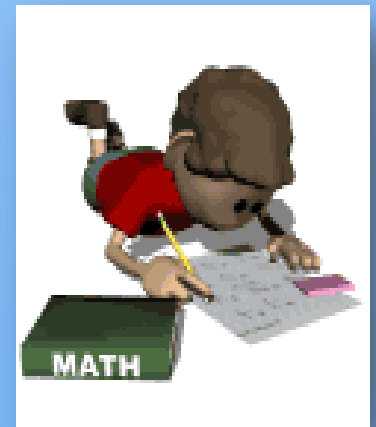
- **Some of you will already be familiar with the material.**
- **Most of you will not know some or all of the material and THAT IS GOOD!**
- **Assure the students that they're not expected to be competent in all of the objectives being assessed.**
- **Tell them the purpose of preassessment. "I really don't want to waste your time teaching you something that you already have learned!"**



I've mapped out the concepts I've already grasped to save you time.

Preassessment Options

- ▶ **Textbook Pretest**
- ▶ **Student/Teacher Conference – short 5 minute talk**
- ▶ **K-N-W Chart - What do I Know, Need to know & Want to know**
- ▶ **Journal - Write what you know about...**
- ▶ **List - If I say ...**
 - ▶ **What does it make you think of?**
- ▶ **Product - Draw a bar graph...**
 - ▶ **Use the graphing calculator to plot...**
- ▶ **Concept Map...**
- ▶ **Five Hardest**



Five Hardest

- ❑ **Teacher or student selects the 5 (or other number) most difficult problems on the page**
- ❑ **Do with 80% accuracy and...**
- ❑ **NEATLY!**
- ❑ **Preassessment or...Buy self out of the remainder of the problems on the page**

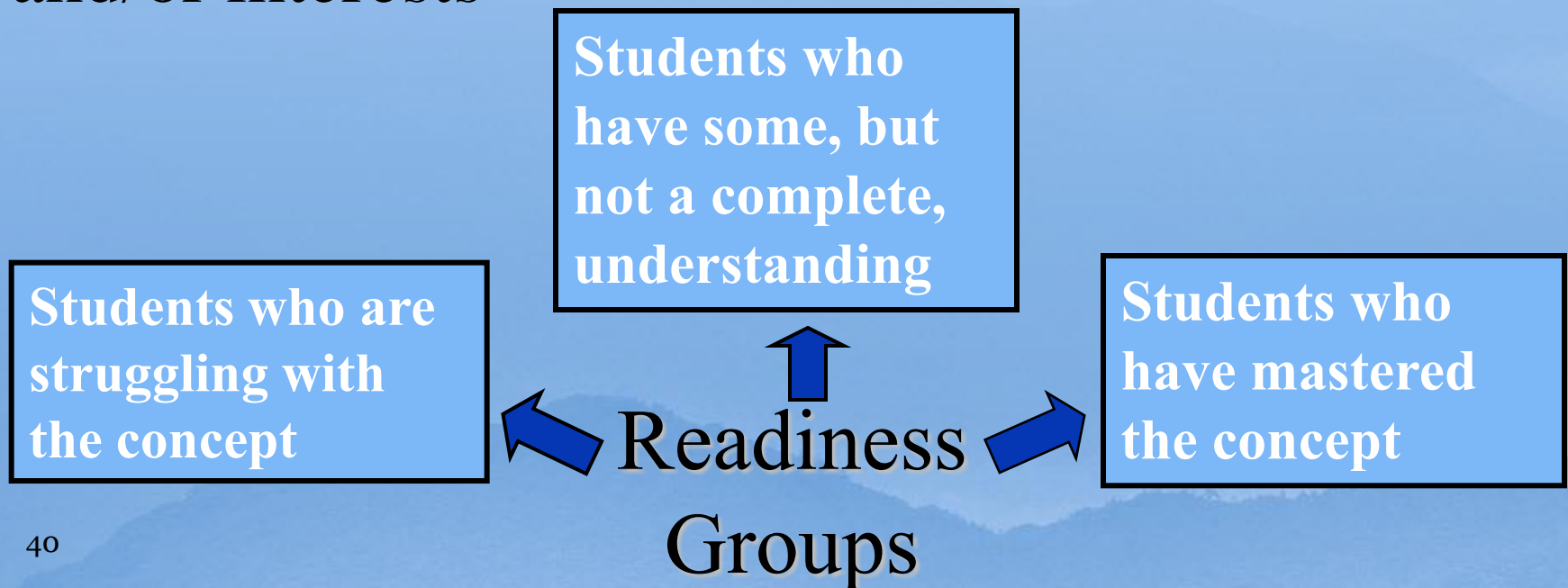
EXIT CARDS

“Tickets To Leave” or Nuggets

Quick assessment tool

Students respond to teacher prompt

Teacher uses responses to determine readiness and/or interests



Sample Prompts

- **What one thing will you remember most about today's lesson.**
- **List 3 things you learned today.**
- **List 2 examples of....**
- **What questions do you have about...**
- **Explain the difference between...**
- **What area gave you the most difficulty today?**
- **Something I still don't understand it...**

Step 3: Alternative Activities



- Compact or Streamline?
- Activities and experiences should represent individual strengths and interests – different, not more
- Acceleration vs. Enrichment
 - Acceleration – moving ahead in the curriculum
 - Enrichment – exploring a topic unrelated to the curriculum

Conditions



- Exploration must be
 - high quality, and
 - appropriate to the students' levels.
- Students must
 - be motivated to work on the tasks, and
 - have adequate time to learn.

Acceleration vs. Enrichment

- Go back to your topic...
 - What acceleration activities might be possible?
 - What enrichment activities might be possible?

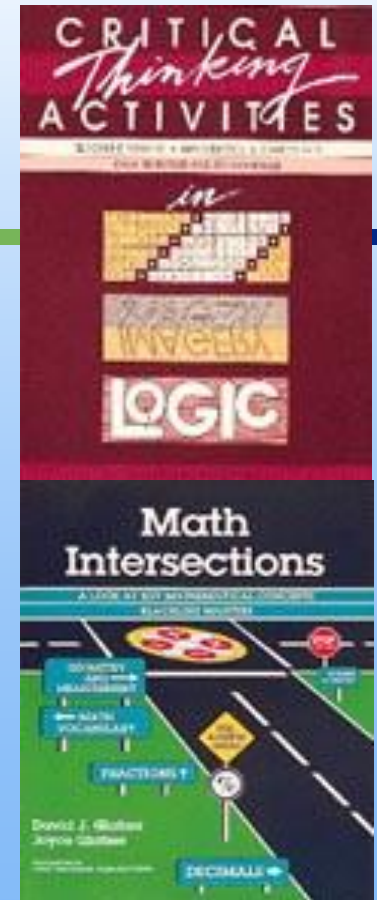
Anchor Activities



- Self-paced, purposeful, content-driven activities that students can work on independently during a unit or grading period
- Meaningful ongoing activities related to the curriculum
 - A list of activities that a student can do at any time
 - A long-term project
 - An activity center/learning station located in the room
- These activities must be worthy of a student's time and appropriate to their learning needs

A few possibilities:

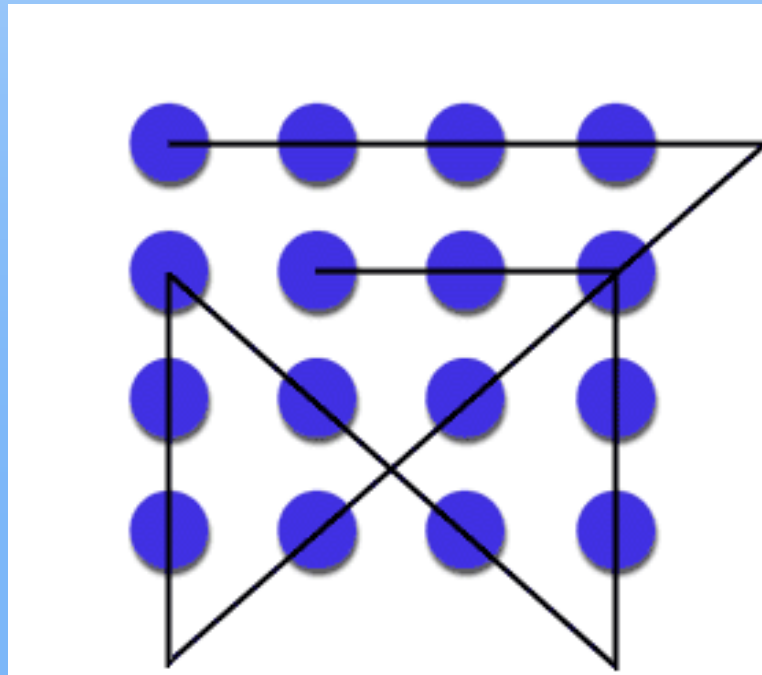
- Logic problems
- Pre-algebra thinking activities
- Open-ended math problems
- Figural Analogies
- Spatial Reasoning problems
- Visual Analogies
- Unit projects



Spatial Reasoning Puzzles

CIRCLES:

Using six contiguous straight lines, connect all of the sixteen circles shown below.



Learning Contract

Name _____

My question or topic is:



To find out about my question or topic...

I will read:



I will look at and listen to:



I will write:



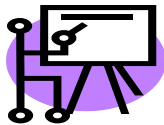
I will draw:



I will need:



Here's how I will share what I know:



I will finish by this date:



Learning Contracts

- ❑ **An agreement between student and teacher – student directed**
- ❑ **Instead of, not in addition to...**
- ❑ **Streamline delivery or eliminate mastered content**

What	How	When	Proof to self	Proof to audience

Michael's Contract

What	How	When	Proof to self	Proof to audience
Ancient China	Independent Research	During class and at home	Note cards, Timeline, Venn Diagram	Presentation to class using PowerPoint



Learning Contract

To demonstrate what I have learned about _____, I want to

- | | |
|--|--|
| <input type="checkbox"/> Write a report | <input type="checkbox"/> Design a mural |
| <input type="checkbox"/> Put on a demonstration | <input type="checkbox"/> Write a song |
| <input type="checkbox"/> Set up an experiment | <input type="checkbox"/> Make a movie |
| <input type="checkbox"/> Develop a computer presentation | <input type="checkbox"/> Create a graphic organizer or diagram |
| <input type="checkbox"/> Build a model | <input type="checkbox"/> Other _____ |

This will be a good way to demonstrate understanding of this concept because

To do this project, I will need help with

My Action Plan is _____

The criteria/rubric which will be used to assess my final product is _____

My project will be completed by this date _____

Student signature: _____ Date ____/____/____

Teacher signature: _____ Date ____/____/____

Independent Study/Mentorship

- Individual or small group investigations
- Student(s) identifies area of interest
 - Latrell and Jasmine – Clocks
 - Kyle – Civil War
 - 7th graders - wetlands
- Identify audience
 - Custodian
 - 8th Graders
 - Town Council
- Teacher helps student narrow focus
- High School students as mentors
- Community members as mentors

ENERGY

DAILY USES

- entertainment (TV, radio)
- cool home
- transportation
- heat home
- computer
- lights
- run cars
- pollution
- conservation
- cost
- danger
- factor
- destruction of habitat
- communication (telephone, telegraph)
- cooks food
- keeps living things alive

ISSUES

- pollution
- conservation
- cost
- danger
- factor
- destruction of habitat

FORMS

- electrical
- nuclear
- chemical
- mechanical (friction)

SOURCES

- Solar
- geothermal
- wind
- coal
- gas
- water falls
- food

DEFINITION

ability to do WORK

non-renewable resources

IMPORTANCE

- allows for global community
- need food energy to live
- keeps planet @ good temp.
- makes life easier

Independent Study Plan

Beginning Date _____ Estimated Ending Date _____

General Areas of Study (check all that apply)

_____ Science _____ Language Arts _____ Social Studies _____ Art

_____ Math _____ Music _____ Other _____

What is the topic of your study?

What do you hope to find out? (Your research question.)

List three things you will do to get started.

List the resources you will use during your study. This might include books, Internet sites, magazines, videos, maps, people, etc.

What form will your final product take?

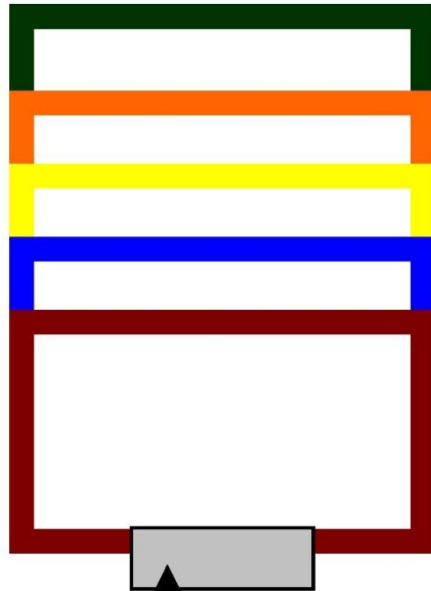
With whom will you share your product?

Teacher Verification:

The topic is identified and appropriate, the research question is manageable, and the 3 starter items are available and suitable. _____



Color Coded 3 x 5 cards



Use the pocket
for Bibliography
and other
materials



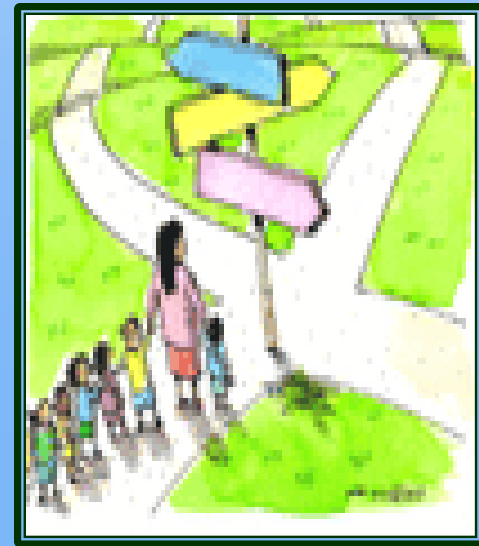
Tape the bottom of the cards

Envelope for "answer cards"

Mentorships

An arrangement in which a student works with an adult who shares the student's interest in a hobby or career orientation.

- Parents
- Business
- NHS
- Teachers
- Administrators



Authentic Products



- Chronicle a historical walking tour of a city.
- Oral history interviews with past city mayors.
- Development of a simulation game.
- Media presentation of the music of the 1940s.
- Oral history interviews recording a factory's influence on a community.
- A book summarizing local folklore.
- A family tree: A study of genealogy.
- Design a handicap accessible playground.
- Develop a brochure for a nature walk.

Sharing Guide: Compacting

Name and Grade

Subject compacted and Topic

Why do you believe that you might have students able to compact out of this topic?

How will you pre-assess?

How many students do you feel will be impacted?

Do you think you will compact the content, process, or product?

What steps will you take in this process (beginning to end)?

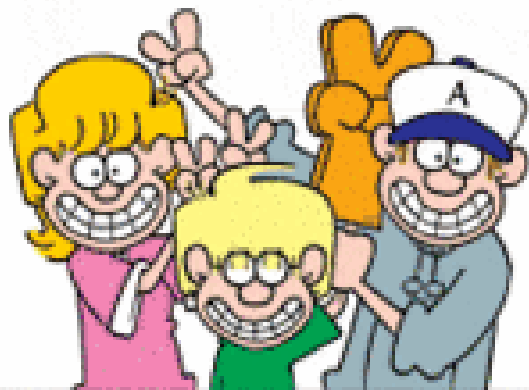
What problems do you anticipate?

How do you think your students will respond?

Step 4: Document!

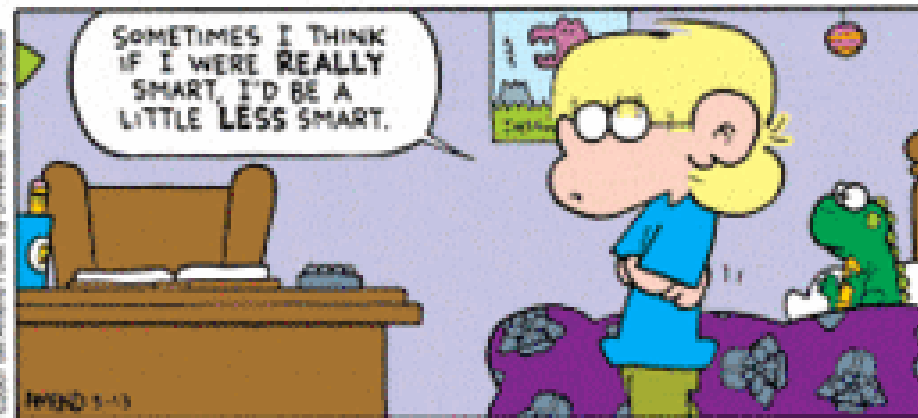
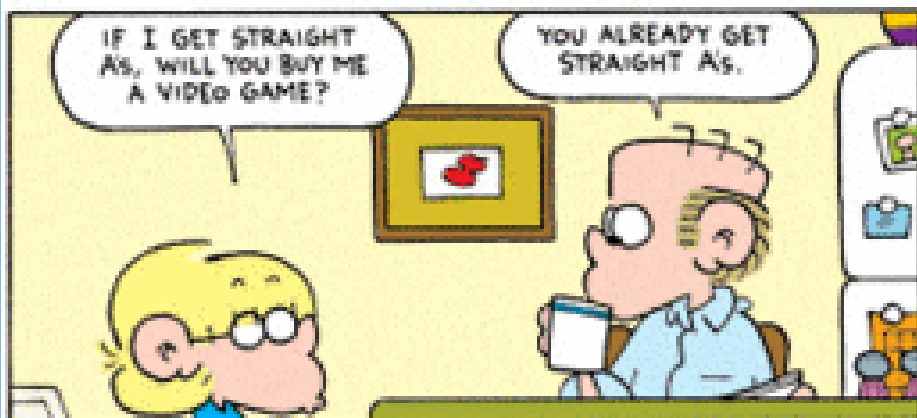
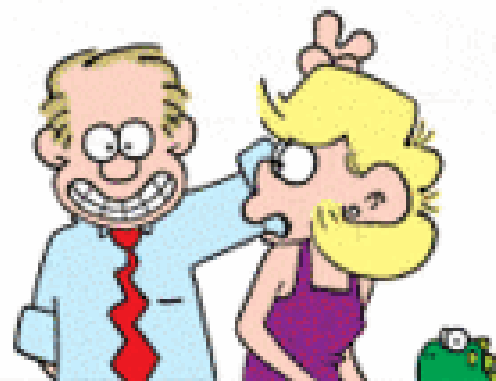


- For STREAMLINED students – keep track of specific concepts mastered as evidenced by the preassessment
- For COMPACTED students – keep track of their plan and their progress
 - Student logs
 - Daily checklist



FoxTrot

by Bill Amend



www.foxtrot.com

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Management Suggestions



- **Explain the activity and the procedures with the whole class**
- **Make expectations clear – develop ground rules for:**
 - **Behavior**
 - **Performance**
- **Use tasks that require time and thinking – this is not an extension of the “seat-work” concept**
- **Provide clear instructions, materials, responsibilities, check points, and expectations (rubrics)**

Remember, before you start...



- All students and parents need to understand that everyone is different and has different academic needs!
- Explain compacting, its purpose and benefits to students and parents
- Choose one subject area with the most resources
- Define objectives and determine what constitutes mastery
- Align pre-assessment with objectives
- Have students develop written plans for accelerated or enrichment study
- Keep records

Most of all.....

Start small!

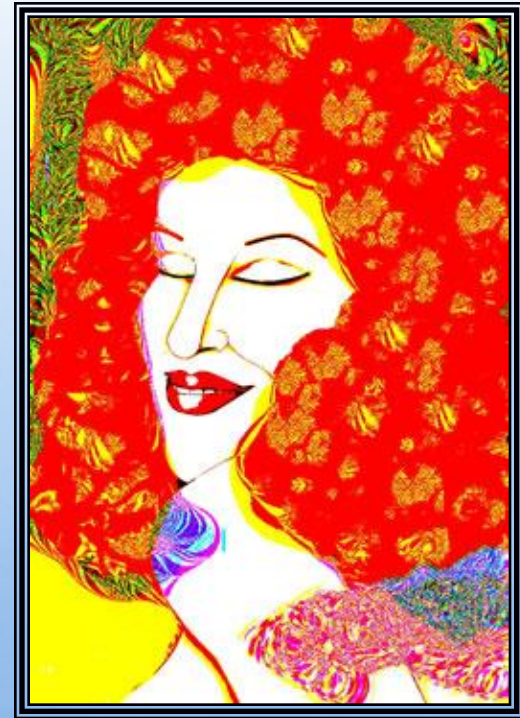


High above the hushed crowd, Rex tried to remain focused. Still, he couldn't shake one nagging thought: He was an old dog and this was a new trick.

Bette Midler

I didn't belong
as a kid and that
always bothered me.

If I'd only known that
one day my differences
would be an asset.



Differentiation is . . .

- Different ways to explore content
 - Focus is on key understandings
 - Learn and understand vs. “get it done”
- Different ways to understand
 - Focus is on learning style/preference
 - Active, engaged, motivated students
- Different ways to demonstrate understanding
 - Focus is on communication
 - Demonstration of knowledge via diverse methods

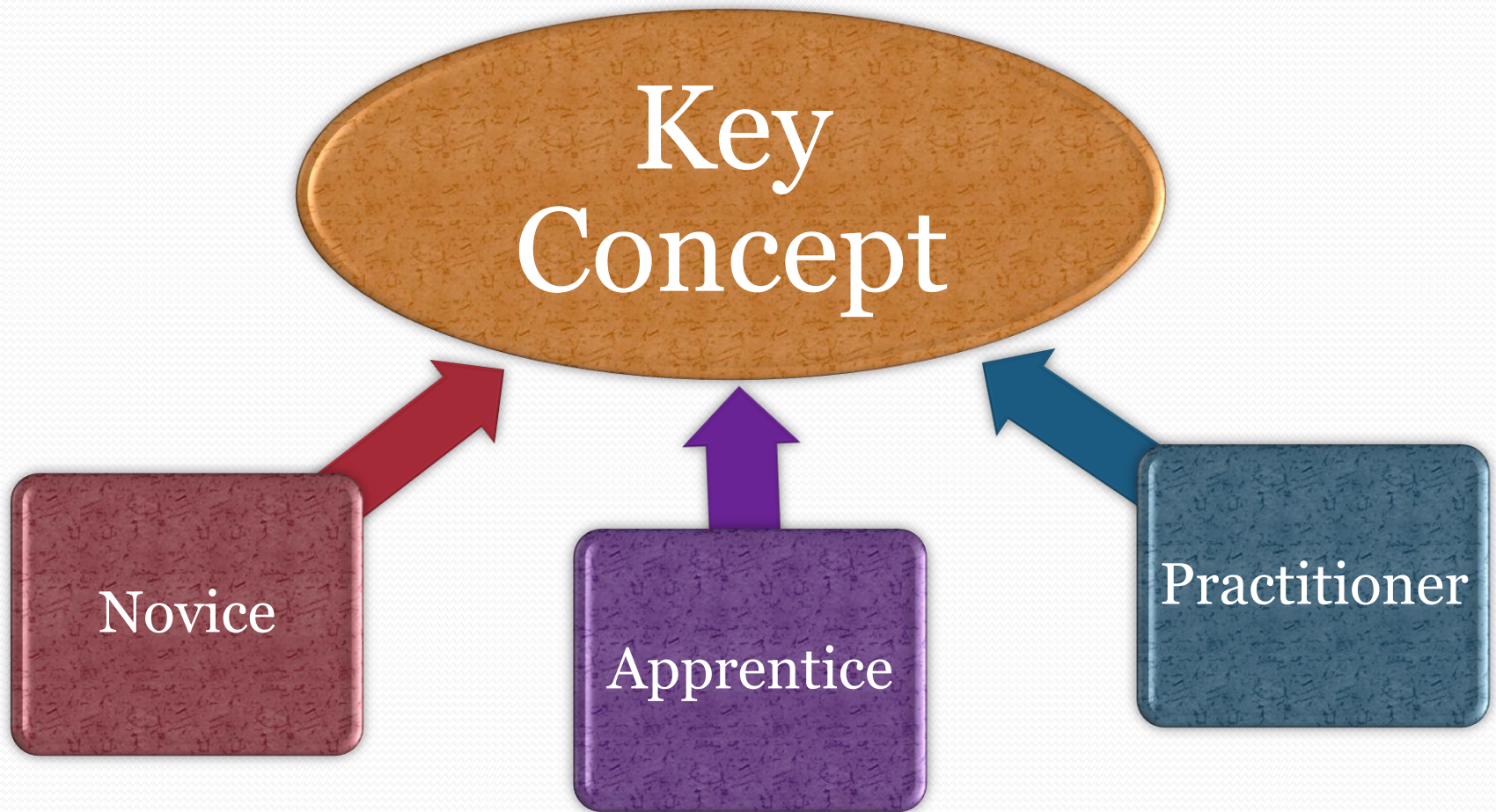
Differentiation is not...

- Grading some harder than others
- Giving more difficult questions to different student without adjusting instruction
- Letting those who finish early work on other homework
- Giving more work: extra questions/reports/extensions on the same level or concept
- Giving more assignments (don't ask them to do what they already know)
- Allowing some students to “get by” without work at their appropriate level
- Less rigorous concepts for some than for others

Tiered Assignments - Parallel Tasks

- Novice
 - Experiences content at concrete level
 - Needs skill instruction and guided practice
 - Requires support and affirmation
- Apprentice
 - Understands connections between concepts
 - Applies skills with limited supervision
 - Seeks confirmation, reflects when prompted
- Practitioner
 - Manipulates multiple concepts simultaneously
 - Selects and utilizes skills
 - Seeks input as needed, reflects on content and skill

Creating Multiple Paths for Learning



Needs of learners at each stage

- Novice
 - Direct instruction in skills and guided practice
 - Concept development
 - Reflective prompts and specific feedback
- Apprentice
 - Two or three concepts at a time
 - Guided inquiry and cooperative learning for skills practice
 - Self-assessment opportunities
- Practitioner
 - Thematic focus, generalization building
 - Exposure to problems, resources, and innovations
 - Complex projects with authentic audience feedback

Developing a Tiered Lesson

You can't create a great tiered lesson unless you know what it is you want the children to know.

Identify Outcomes

What should the students know, understand, or be able to do?



Think About Your Students

Preassess readiness, interest, and/or learning profile



Initiating Activities

Use as common experience for entire class

Novice

Apprentice

Practitioner

Creating Multiple Paths for Learning

Explain different interpretations of fractions: as parts of a whole and parts of a set.

Novice

Use fraction bars to identify fractional parts

Apprentice

Use fraction bars to identify different fractions that equal another fraction

Practitioner

Use pattern blocks to identify different fractional parts when the whole varies

Sample Tiered Lesson

- **Introductory activity:** The teacher asks the question, “What do we know about the issue of global warming?” Student answers are recorded. The teacher then asks, “As scientists, what criteria might we use to judge the validity of the information regarding global warming?” The criteria are posted for future reference. Students are then asked to develop a concept map representing what they know about the issue.
- Using the two pre-assessment techniques, the teacher determines that there are three distinct levels of readiness to accomplish the task. All students will use the posted criteria to judge the information they will use for the activity.

Tier I - Novice

- Students will use reading material that pictorially represents required information and conduct a pre-developed survey of science teachers and students to determine their awareness of the issue and what they believe and why they hold that belief. Students will apply the validity criteria to the information gathered. Findings will be presented.

Tier II - Apprentice

- Students will use grade-level reading material to gather secondary information and develop and conduct a survey of a least two scientists currently investigating the issue. Students will apply the validity criteria to the information gathered. Findings will be presented.

Tier III - Practitioner

- Students will compare their knowledge of global warming with at least one other environmental issue and note the similarities and differences in the evidence that is presented by each side of the issue. Each issue being addressed must meet the established criteria. Findings will be presented.

Culminating activity

- Students present their findings on global warming and explain how this issue is an example of conflict as being a catalyst for change. After all presentations are completed, the teacher asks, "What can we generally say about the issue of global warming? What predictions can we make based on our current knowledge of this issue? What value, if any, do the validity criteria have in drawing defensible conclusions?"

Mean, Median and Mode

- Compute the mean, median, and mode for:

- Task 1:

2 4 4 6 4 2

- Task 2:

3 7 8 7 8 2

- Task 3:

4.2 5 6 8.1 9.3 2.7

Tiered Activity: Biographies

Level	Prompt
<p>Tier 1: These students benefit from structure and direct instruction.</p>	<p>Write a biography of your famous person. Use the timeline you created to help you organize your ideas. Remember to answer the following questions as you write.</p> <ul style="list-style-type: none">▪ When and where was your famous person born?▪ Where did your person live while growing up?▪ What was his or her childhood like?▪ What did he or she do when he or she became an adult?▪ Why is your person famous?
<p>Tier 2: These students can organize ideas without too much prompting.</p>	<p>Write a biography of your famous person. Use your timeline to help you organize your ideas. Remember to emphasize why your person is famous.</p>
<p>Tier 3: These students thrive on high levels of challenge.</p>	<p>Tell the reader about your famous person's life through a series of letters written over his or her lifespan from that person to a friend.</p>

Point of View

- Group 1 – compare the point of view of two characters in a story, imagine being each character, and tell or write and draw what they think about their situation
- Group 2 – choose one character from two separate stories and analyze how the two characters would respond if they switched stories

Persuasive Essay

	Basic	Intermediate	Advanced
Outcome	Write a cohesive paragraph with a main idea and supporting details.	State a point of view and cite multiple reasons to defend that viewpoint.	Expand the quality of their essay by adding multiple, credible sources of support.
Assessment	Describe their opinion about a topic by writing 5-6 detailed sentences explaining their opinion – to be assessed using the NYS independent writing rubric.	Use the Learning Activity as a rough draft to develop a multi-paragraph persuasive essay – to be assessed using the NYS independent writing rubric.	Write a persuasive essay using multiple reasons, logical explanations and credible sources to support their point of view – to be assessed using the NYS independent writing rubric.

Heroes and Heroines

Key Concept:

Heroes and heroines reflect cultural values

Introductory Activities:

- create a "Heroes Wall of Fame" with posters and drawings of people the students think are heroic
- create a list of students' own personal heroes and heroines (both real and fictional)
- developing criteria for what makes a person a hero/heroine.

- Task A - Name heroes and heroines found in the readings. Why would you call them heroes and heroines? Who from the readings is the most heroic to you? Why? When is it okay to fight or be violent and still be a hero or heroine? When would fighting or violence by someone make you say that person was not a hero or heroine?
- Task B - Who from the readings is the most heroic to you? Defend your answer with supporting evidence. What is the relationship between violence and heroism? When is it okay to be violent and still be a hero? In what situations might some people regard actions as heroic and others think they were merely violent or extreme? What are the similarities and differences between peaceful/pacifist heroes and "violent" ones? Cite examples from the stories and other sources to support your statements.

Locker Problem

A school has 1,000 lockers and 1,000 students. The students decide to have fun one day, so they take turns opening and closing the lockers, according to this plan:

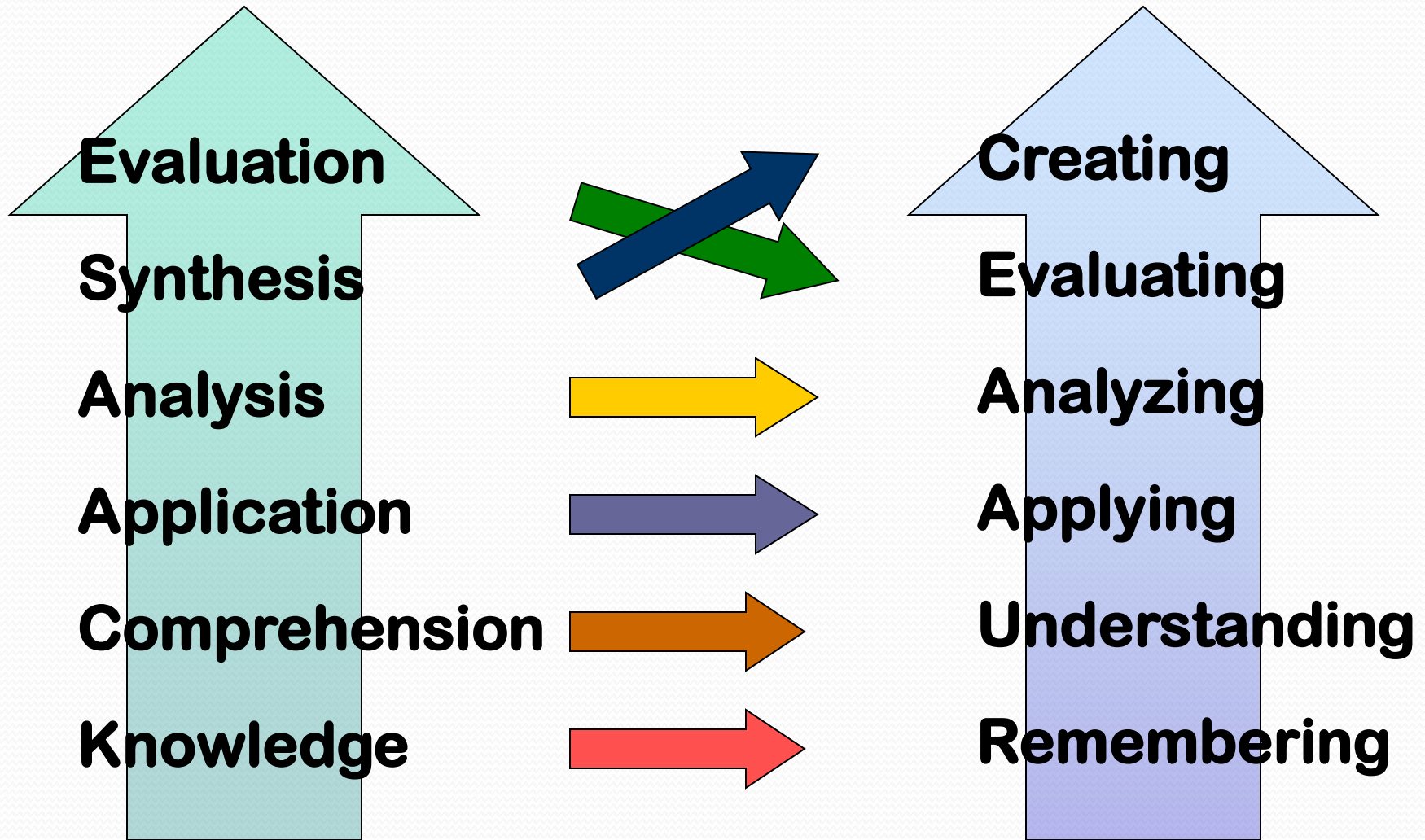
- The first student opens every locker.
- The second student goes through the row and for every second locker, if it is closed she opens it and if it is open she closes it.
- A third student does the same for every third locker.
- A fourth for every fourth and so on until all 1,000 students have had a turn.
- When all of the students are finished, which lockers remain open?

Key principle:

There are rules that govern patterns

- Novice
 - Two-color counters
 - Graphic for recording the position of first 16 lockers
 - T-table with column headings
- Apprentice
 - Graphic for recording the position of first 16 lockers
 - Must produce t-table
- Practitioner
 - Nothing provided – must produce own t-table
- All write description of pattern discovery process

The Revised Bloom's Taxonomy



(Based on Pohl, 2000, *Learning to Think, Thinking to Learn*)

Revised Bloom's Taxonomy of Cognitive Levels

Critical Thinking Activity [arranged lowest to highest]	Relevant Sample Verbs	Sample Assignments	Sample Sources or Activities
1. Remembering Retrieving, recognizing, and recalling relevant knowledge from long-term memory, eg. find out, learn terms, facts, methods, procedures, concepts	Acquire, Define, Distinguish, Draw, Find, Label, List, Match, Read, Record	1. Define each of these terms: encomienda, conquistador, gaucho 2. What was the <i>Amistad</i> ?	Written records, films, videos, models, events, media, diagrams, books.
2. Understanding Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining. Understand uses and implications of terms, facts, methods, procedures, concepts	Compare, Demonstrate, Differentiate, Fill in, Find, Group, Outline, Predict, Represent, Trace	1. Compare an invertebrate with a vertebrate. 2. Use a set of symbols and graphics to draw the water cycle.	Trends, consequences, tables, cartoons
3. Applying Carrying out or using a procedure through executing, or implementing. Make use of, apply practice theory, solve problems, use information in new situations	Convert, Demonstrate, Differentiate between, Discover, Discuss, Examine, Experiment, Prepare, Produce, Record	1. Convert the following into a real-world problem: velocity = dist./time. 2. Experiment with batteries and bulbs to create circuits.	Collection of items, diary, photographs, sculpture, illustration
4. Analyzing Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing. Take concepts apart, break them down, analyze structure, recognize assumptions and poor logic, evaluate relevancy	Classify, Determine, Discriminate, Form generalizations, Put into categories, Illustrate, Select, Survey, Take apart, Transform	1. Illustrate examples of two earthquake types. 2. Dissect a crayfish and examine the body parts.	Graph, survey, diagram, chart, questionnaire, report
5. Evaluating Making judgments based on criteria and standards through checking and critiquing. Set standards, judge using standards, evidence, rubrics, accept or reject on basis of criteria	Argue, Award, Critique, Defend, Interpret, Judge, Measure, Select, Test, Verify	1. Defend or negate the statement: "Nature takes care of itself." 2. Judge the value of requiring students to take earth science.	Letters, group with discussion panel, court trial, survey, self-evaluation, value, allusions
6. Creating Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Put things together; bring together various parts; write theme, present speech, plan experiment, put information together in a new & creative way	Synthesize, Arrange, Blend, Create, Deduce, Devise, Organize, Plan, Present, Rearrange, Rewrite	1. Create a demonstration to show various chemical properties. 2. Devise a method to teach others about magnetism.	Article, radio show, video, puppet show, inventions, poetry, short story

Tiered Activity Template

Grade Level: _____ Topic: _____

	Below Level	At Level	Above Level
Pre-assessment			
What do you want them to know?			
Whole Class Lesson			
Tiered Learning Activity			
Resources			

Any surprises?

Remember...

- Start small
- Make friends
- Different, not more...