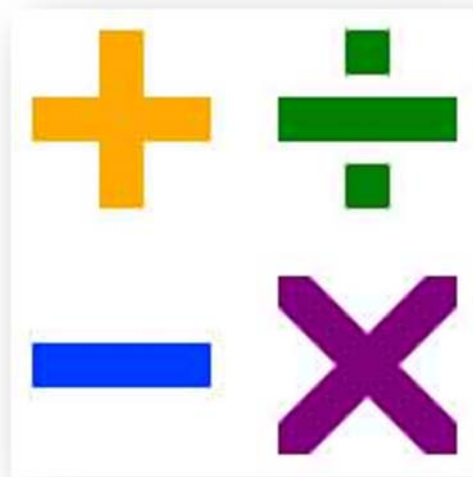




Rethink Literacy! 2.0



Incorporating Literacy Instruction in the
Middle School Math Classroom

6th–8th Grade Teachers

Rethink Literacy: 2.0

Literacy Instruction Across the Content Areas for 6th-8th Grades

Session Agenda

Morning Break is scheduled from 10:15-10:25 | Lunch on your own will be from 12:25-1:25

| Concurrent Sessions | |
|---------------------|---|
| ELA | 8:15-10:15 Session 1: Self-study Guide for Implementing Literacy Interventions (REL-SE) |
| | 10:25-12:25 Session 2: Differentiated Instruction |
| | 1:30-3:30 Session 3: Content-Driven Strategies for ELA: Fluency, Vocabulary, and Comprehension |
| | |
| Math | 8:15-10:15 Session 1: Differentiated Instruction |
| | 10:25-12:25 Session 2: Self-study Guide for Implementing Literacy Interventions (REL-SE) |
| | 1:30-3:30 Session 3: Content-Driven Strategies for Math: Fluency, Vocabulary, and Comprehension |
| | |
| Science | 8:15-10:15 Session 1: Differentiated Instruction |
| | 10:25-12:25 Session 2: Content-Driven Strategies for Science: Fluency, Vocabulary, and Comprehension |
| | 1:30-3:30 Session 3: Self-study Guide for Implementing Literacy Interventions (REL-SE) |

INCORPORATING LITERACY INSTRUCTION

IN THE MIDDLE SCHOOL MATH CLASSROOM



Rethink Literacy! 2.0



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Division of Literacy

Office of Elementary Education and Reading
601-359-2586

Mississippi Department of Education

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To create a world-class educational system that gives students the knowledge and skills to be successful in college and the workforce, and to flourish as parents and citizens

MISSION

To provide leadership through the development of policy and accountability systems so that all students are prepared to compete in the global community



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6. Every School and District is Rated “C” or Higher



3

Objective

The objective for today’s training is to highlight literacy strategies that can be used to deepen students’ conceptual understanding of key standards in mathematics through focusing on:

- ✓ Decoding Strategies
- ✓ Fluency Strategies
- ✓ Comprehension Strategies



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Participation Signals



Work Session #1: Literacy for All

Readers and Mathematicians



Ponder a Moment

“A math teacher is a reading teacher... a reading teacher that teaches students to read math.”

Do you agree or disagree? Be prepared to explain your reasoning.

Shh!

Voices from the Math Classroom

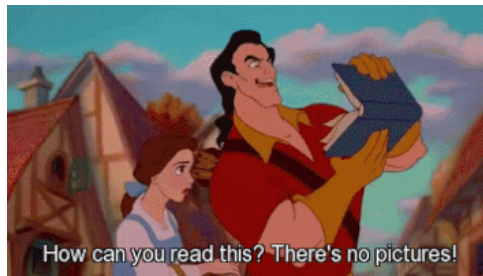
“The thing I don’t like about this new series is the way the problems are stated; it’s difficult for students to understand what is being asked of them.”

“The students know how to do the math, they just don’t understand what the question is asking.”

“I have to reword the questions for my students and then they can do it.”

Literacy Defined

The ability to identify, understand, interpret, create, compute, and communicate using visual, audible, and digital materials across disciplines and in any context.



Students Who Can't Read

- **126 million youth worldwide are illiterate.**
- Students who can't read are not deficient because a lack of book and print awareness or because they can't read the words on a page.
- Students who can't read
 - are not able to read words with enough fluency to facilitate comprehension.
 - lack strategies to help comprehend what they read.

Literacy Challenges

Reading math is different from reading a narrative:

- Students generally read the words from left to right, while math may require students to read from left to right, right to left, top to bottom, bottom to top, and diagonally (e.g., order of operations, division, multiplication, etc.)
- A sentence has a subject, predicate, and a verb; mathematical expressions consist of variables and symbols that may have multiple or discrete meanings.



Literacy Challenges

- Textbooks that are designed for students who possess on-grade level reading skills.
- Students frequently have to read and comprehend real-world problems.
- Students are frequently asked to justify or explain their solutions.



Social Norms

Social norms that do not readily admit not being able to read.

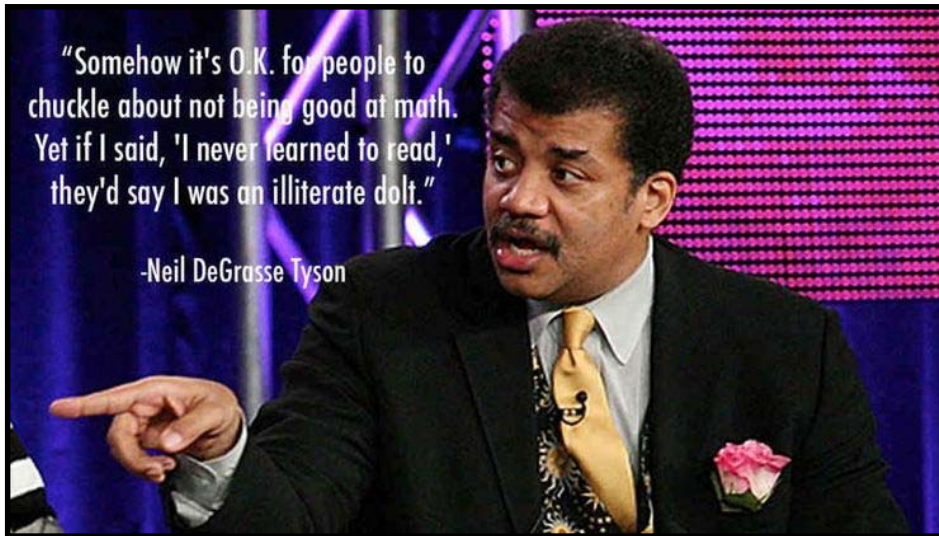
Social norms that proclaim pride in the inability to perform moderately complicated math problems

Poor math performance seemingly does not carry the same stigma as poor performance in reading.

Mathematics for All

"Somehow it's O.K. for people to chuckle about not being good at math. Yet if I said, 'I never learned to read,' they'd say I was an illiterate dolt."

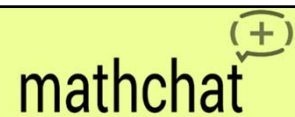
-Neil DeGrasse Tyson



Math Isn't Hard, It's a Language



Problem-Solving Myths Activity



Directions:

- Take a marker and stand by the poster that corresponds with your table number.
- Without speaking, write down the truth for the myth on the poster.
- Write down ideas for combating the myth and focusing on the truth until the facilitator signals for you to rotate.

Literacy Strategies to Improve Mathematics

Decoding, Comprehension, and Fluency



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Literacy Decoding and Comprehension

Reading generally has two components:

- **Decoding** is the process that readers use to quickly and automatically translate letters, symbols, or spelling patterns of written words into speech sounds.
- **Comprehension** is the ability to actively listen, read, and understand language. To comprehend a text, students' decoding skills must allow for fluent reading.



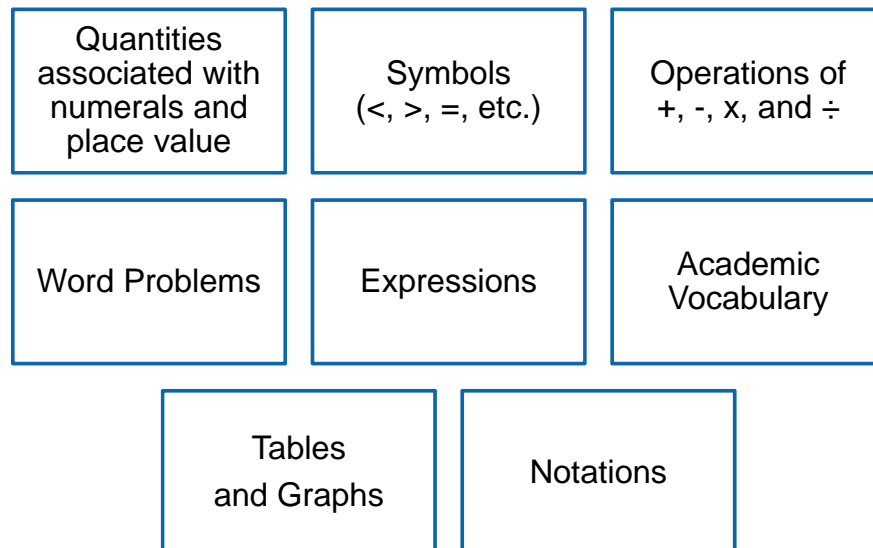
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Math Decoding and Comprehension

These literacy components are a part of math as well.

- **Decoding in math** is the process that mathematicians use to quickly and automatically translate words, numbers, and symbols into understandable information to find solutions.
- **Comprehension in math** is the ability to actively listen, read, communicate, and understand mathematics. To comprehend math, students' decoding skills must allow for fluent reading and calculating. Comprehension builds on previous math understandings.

Decoding and Comprehending in Math



Students Who Struggle with Math

Students who struggle with math often have not fully developed one or more of the following strands of mathematical proficiency:

- Conceptual understanding
- Procedural fluency
- Adaptive reasoning
- Productive disposition

Vocabulary Instruction

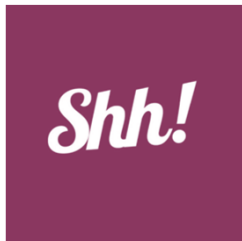
Mathematics Classroom Strategies



Ponder a Moment

Research revealed that 80% of comprehending is tied to understanding the vocabulary

What implications might this finding have on teaching and learning mathematics?



The Numbers Don't Lie

The Thirty Million Word Gap

| | Words heard per hour | Words heard in a 100-hour week | Words heard in a 5,200 hour year | 3 years |
|---------------|----------------------|--------------------------------|----------------------------------|------------|
| Welfare | 620 | 62,000 | 3 million | 10 million |
| Working Class | 1,250 | 125,000 | 6 million | 20 million |
| Professional | 2,150 | 215,000 | 11 million | 30 million |


Academic Vocabulary

Vocabulary knowledge is essential to student achievement because –

- vocabulary is strongly correlated to reading comprehension,
- vocabulary is a predictor of students' comprehension and content area learning, and
- lack of vocabulary knowledge can negatively affect learning content.

Tiered Vocabulary

Vocabulary Instruction Choosing Words to Teach



Tier III
Tier III words are low-frequency words and are limited to a specific "domain". They often pertain to a specific content area. These words are best learned within the context of the lesson or subject matter.
Examples: atom, molecule, metamorphic, sedimentary, continent

Tier II
Tier II words are high-frequency words that occur across contexts. These words are used by mature language users and are more common in writing than in everyday speech. Tier II words are important for students to know to enhance comprehension of a selected text. Tier II words the best words for targeted explicit vocabulary instruction.
Examples: hilarious, endure, despise, arrange, compare, contrast

Tier I
Tier I words are the words we use everyday in our speech. These words are typically learned through conversation. These are common words that rarely require direct instruction.
Examples: come, see, happy, table

www.blog.maketoteach.com

Source: Bringing Words To Life (Beck, McKeown, & Kucan 2002)

Explicit Instruction and Student-Friendly Definitions

1. State the word.
2. Have students repeat the word.
3. Provide a student-friendly definition with a gesture/motion.
4. Have students repeat the definition and show the gesture/motion.



Strategy to Promote Vocabulary Instruction

A **Concept Cube** is a cube rolled to reinforce a variety of characteristics of vocabulary words, including

- definitions
- characteristics
- sentences
- examples
- representations

Concept Cube Activity



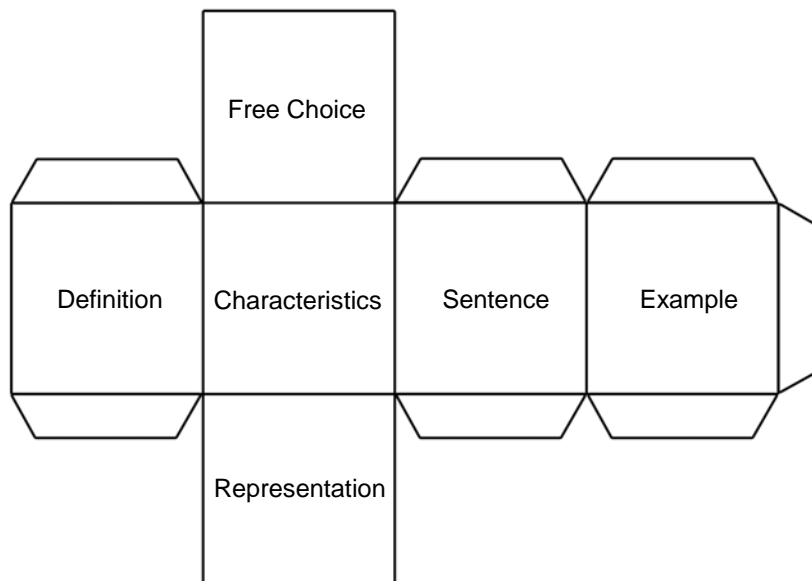
Directions:

- Locate the **Concept Cube** on your table.
- Have one person roll the cube to determine the focus for your group.
- Independently respond to the cube using the vocabulary word provided by the facilitator.
- When facilitator signals, compare your response your group.



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Concept Cubes



Hexahedron (platonic solid)

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Vocabulary Acquisition Resources

Helping Students Learn Vocabulary-Acquisition Skills

www.glencoe.com

Vocabulary Acquisition: Word Structure, Collocation, Word-class, and Meaning, Nick Ellis, 1997

Big Book of Math, Middle School and High School

Dinah Zike, Dinah-Might Adventures, LP; 2003

Vocabulary Acquisition

www.spellingcity.com



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Promoting Fluency

Mathematics Classroom Strategies



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Fluency in Mathematics

**What does it mean to be fluent in math?
What indicators do you look for in students to indicate
whether or not they are fluent?**



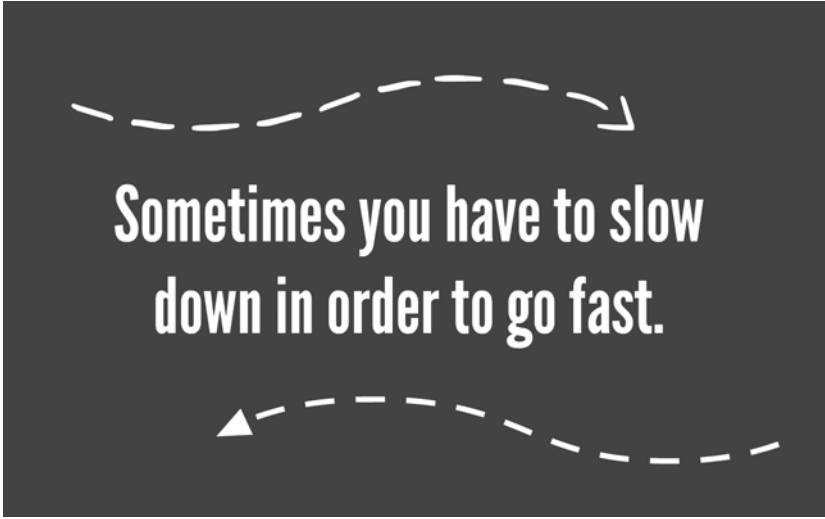
Fluency in Mathematics

- The ability to quickly compute or rapidly recall facts is insufficient.
 - Students find it difficult mathematically because they struggle with computation and facts.
- Truly fluent students arrive at a solution and decide on their own if it is reasonable.
 - Mental energy is placed on noticing patterns, making generalizations, conjectures, and tackling multi-step word problems.

Fluency in Mathematics

- Be sure to address serious problems that may exist in foundational understanding.
 - Students need a good sense of numbers and recall of basic facts.
- Make sure students have the opportunity to do work that challenges them.
 - Students build fluency (and corresponding confidence) when they meet challenges, and experience success often.

Fluency in Mathematics

A dark grey rectangular box contains the text 'Sometimes you have to slow down in order to go fast.' The text is centered and flanked by two white dashed arrows. The top arrow is curved and points to the right, while the bottom arrow is also curved and points to the left.

**Sometimes you have to slow
down in order to go fast.**

Components of Writing

Writing is a complex task. For students to write proficiently, many components are needed. Those components are

- Reading comprehension
- Analytical skills
- Writing skills

Components of Writing Skills

Writing skills include

- writing mechanics: grammar, sentence structure, spelling, etc.
- planning a writing strategy.
- communicating ideas clearly and concisely.
- constructing a reasoned, demonstrable argument.
- effectively gathering evidence and using sources appropriately.
- organizing ideas effectively.

Struggling Writers

The new MS-CCR math content standards require students to focus more on analytical writing. Students have traditionally been writing personal narratives, memoirs, and small works of fiction. Students who struggle require that more focus be placed on **analytical writing** and **communicating the meaning and understanding** of complex real-world problems.

Strategy to Promote Fluency in Writing

Sentence frames provide a frame of a complete sentence for students, while **sentence starters** are — as the name implies — a starter for students who must complete the sentence.

Signal words are those words and phrases that clue in the reader or listener to the purpose of the message.

Sentence Starters Activity

Turn
and
TALK

Directions:

Use the sentence stem anchor chart to respond to the following question.



Figure 1



Figure 2



Figure 3

How many tiles will be in Figure 10? Explain.

Comprehension

Mathematics Classroom Strategies



Reading Comprehension

Reading Comprehension is an intentional, active interactive process that occurs before, during, and after a person reads a particular piece of writing. Simply put, reading comprehension is the act of understanding what you are reading.



Before, During, and After Reading

Before

- Making Connections
- Monitoring Meaning
- Questioning

During

- Making Connections
- Questioning
- Visualizing
- Inferring
- Summarizing

After

- Summarizing
- Synthesizing

A Closer Look at Reading Strategies

Making Connections: Using schema and background knowledge.

Questioning: Generating questions before, during, and after to clarify understanding.

Visualizing: Using sensory and emotional images to deepen and expand meaning.

Inferring: Using background knowledge with new information to predict, conclude, make judgements, or interpret.

Summarizing: Deciding on what information is significant.

Synthesizing: Creating new ideas or extending/revising understanding based on engagement with the text or mathematical observation/investigation.

Monitoring Meaning: Thinking about the degree of understanding and taking the steps to improve understanding when necessary.



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Strategy to Promote Reading Comprehension

The **Paraphrasing Strategy** is designed to help students focus on the most important information in a passage and to improve students' recall of main ideas and specific facts. Students read short passages of materials, identify the main idea and details, and rephrase the content in their own words.

This can be used when encountering word problems in math.



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Steps for Paraphrasing

1. Read the problem.
2. Underline or highlight key terms.
3. Restate the problem in your own words.
4. Write a numerical sentence.

Paraphrasing Activity

Directions:

Use the steps of paraphrasing to solve the problem in the box below.

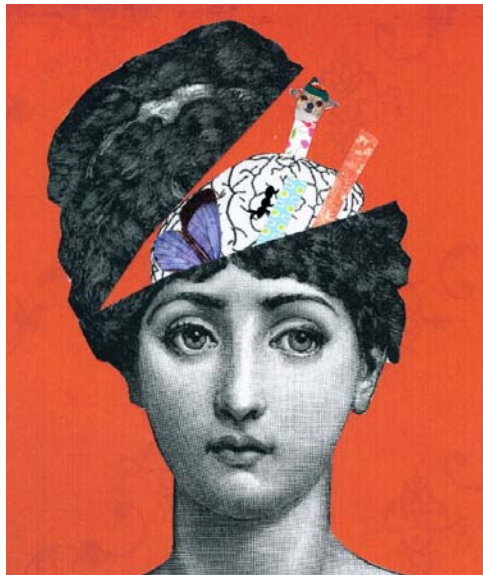
A survey shows that 28% of 1,250 people surveyed prefer vanilla ice cream over chocolate or strawberry. How many people surveyed prefer vanilla ice cream?

Final Thoughts

Things to Remember



Brain Dump



Closing Ideas

- Math is about more than numbers. It is a language we must teach our students.
- Vocabulary is a predictor of students' comprehension and content area learning.
- Encourage fluency in computation, speaking, and writing.
- Model comprehension through reading strategies.
- "Sometimes you have to slow down in order to go fast."



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DIFFERENTIATING INSTRUCTION

STRATEGIES FOR MEETING STUDENTS' INDIVIDUAL NEEDS

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State Board of Education Goals FIVE-YEAR STRATEGIC PLAN FOR 2016-2020

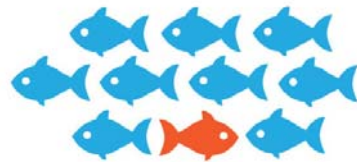
1. All Students Proficient and Showing Growth in All Assessed Areas
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4. Every School Has Effective Teachers and Leaders
5. Every Community Effectively Uses a World-Class Data System to Improve Student Outcomes
6. Every School and District is Rated “C” or Higher



3

Session Norms

- Silence your cell phones
- Please check and/or reply to emails and texts during the scheduled breaks
- Be an active participant
- Do not hesitate to ask questions



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4

Session Goals

- Review the meaning of **Differentiated Instruction**
- Discuss how to **tier instruction for differentiation**
- Implement and practice **differentiated instructional strategies**



Opening Activity

Find others who have the same number as you. In your group, answer the following questions. *Be prepared to share out!*

- What **IS** differentiated instruction? What **IS NOT** differentiated instruction?
- What differentiated instruction strategies have you seen used or have you used in your own classroom?
- Why might teachers be hesitant to include differentiated instruction in their classrooms?



WHAT IS DIFFERENTIATED INSTRUCTION?

▶ [Meeting Individual Needs](#)



DIFFERENTIATION IS

AN IDEA AS **OLD**
AS EFFECTIVE TEACHING

Lessons designed around
PATTERNS OF STUDENT NEED

USE OF
WHOLE-GROUP,
SMALL-GROUP &
INDIVIDUAL TASKS
BASED ON CONTENT AND STUDENT NEEDS

VALUING
and
PLANNING
for
DIVERSITY
in
HETEROGENEOUS
SETTINGS

Necessary
for success with
standards for a
broad range
of learners

PURPOSEFUL USE OF
FLEXIBLE GROUPING

A **STUDENT-FOCUSED**
WAY OF THINKING ABOUT TEACHING AND LEARNING

TEACHING
UP

AT THE CORE
OF QUALITY
TEACHING

ASCD
LEARN. TEACH. LEAD.

Designed to
ADDRESS LEARNING & AFFECTIVE NEEDS
that *all* students have

DIFFERENTIATION IS NOT

| | |
|---|--|
| TRACKING OR GROUPING STUDENTS INTO CLASSES BY "ABILITY" | INCOMPATIBLE <i>with</i> STANDARDS |
| BLUEBIRDS, BUZZARDS & WOMBATS (ability grouping within a classroom) | DUMBING DOWN teaching for some students |
| Mostly for students identified as GIFTED | Something <i>extra</i> on top of good teaching |
| | A SET OF INSTRUCTIONAL STRATEGIES |
| | MOSTLY FOR STUDENTS WITH IDENTIFIED LEARNING CHALLENGES |
| INDIVIDUALIZED INSTRUCTION | IEPs FOR ALL |
| ASCD LEARN. TEACH. LEAD. | A SYNONYM FOR <i>GROUP WORK</i> |

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9

What is Differentiated Instruction?

Differentiation means **tailoring instruction to meet individual needs**. Whether teachers differentiate content, process, products, or the learning environment, the use of **ongoing assessment** and **flexible grouping** makes this a successful approach to instruction.

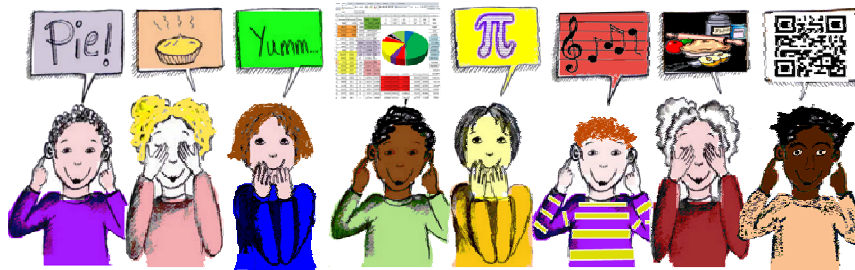
What is Differentiated Instruction?

At its most basic level, differentiation consists of the efforts of teachers to respond to variance among learners in the classroom. *Whenever a teacher reaches out to an individual or small group to vary his or her teaching in order to create the best learning experience possible, that teacher is differentiating instruction.*

Differentiating the Content

Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile:

- 1) Content – what the student needs to learn or how the student will get access to the information



Differentiating the Content

Examples of differentiating **content** include the following:

- Providing students with choices in order to add depth to learning;
- Provide students with additional resources that match their levels of understanding
- Pre-assess student skills and understandings, then match with appropriate activities
- Present essential facts and skills



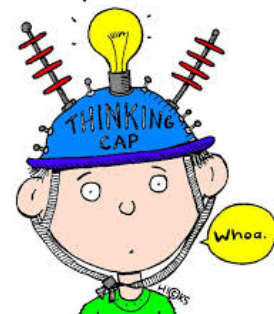
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Differentiating the Process

Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile:

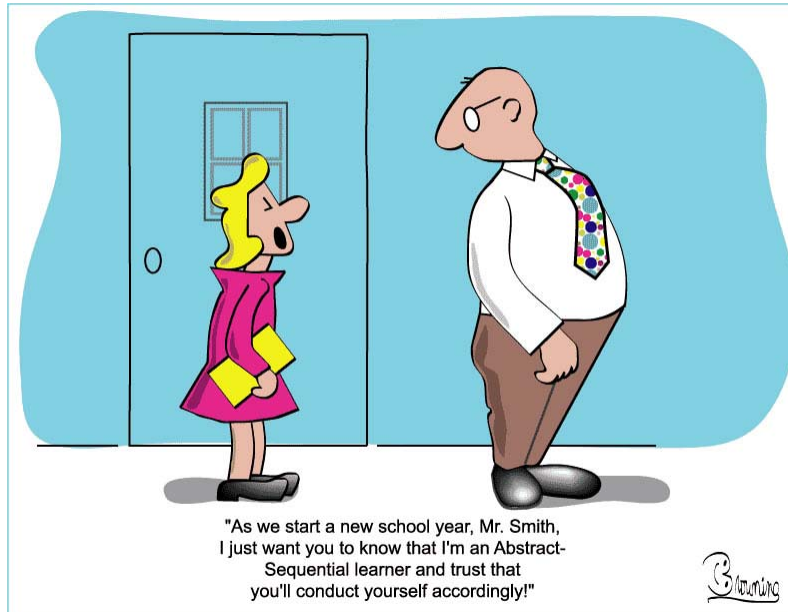
2) **Process** – activities in which the student en order to make sense of or master the content



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Differentiating the Process



Differentiating the Process

Examples of differentiating **processes or activities** include the following:

- Using tiered activities through which all learners work with the same important understandings and skills, but proceed with different levels of support, challenge, or complexity;
- Developing personal agendas (task lists written by the teacher and containing both in-common work for the whole class and work that addresses individual needs of learners) to be completed either during specified agenda time or as students complete other work early;
- Develop activities that reflect student learning styles and preferences

Differentiating the Products

Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile:

3) **Products** – culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit



Differentiating the Products

Examples of differentiating **products** include the following:

- Giving students options of how to express required learning (e.g., write a report, take a test, create a brochure, write a speech, produce a skit);
- Using rubrics that match and extend students' varied skills levels;
- Allowing students to work alone or in small groups on their products; and
- Encouraging students to create their own product assignments as long as the assignments contain required elements.

Differentiating the Learning Environments

Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile:

4) Learning Environment – the way the classroom works and feels



Differentiating the Learning Environments

Examples of differentiating **learning environments** include the following:

- Ensuring there are places in the room to work quietly and without distraction, as well as places that invite student collaboration;
- Providing materials that reflect a variety of cultures and home settings;
- Setting clear guidelines for independent work that matches individual needs;
- Developing routines that allow students to get help when teachers are busy with other students and cannot help them immediately; and
- Helping students understand that some learners need to move around to learn, while others do better sitting quietly

Differentiated Instruction **Table Activity**

As a table, **choose one of the following classroom elements.**

Discuss how you would differentiate instruction in that area.
Be ready to share!

- 1) **Content** – what the student needs to learn or how the student will get access to the information
- 2) **Process** – activities in which the student engages in order to make sense of or master the content
- 3) **Products** – culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit
- 4) **Learning Environment** – the way the classroom works and feels



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UTILIZING COMMON ASSESSMENT DATA TO PLAN

TIERED INSTRUCTION



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Step 1: Record Results by Standard

Following a common assessment, use the test blueprint to **record student results by standard assessed** to provide a clear picture of student understanding.

Analyzing Individual Student Common Assessment Data ELA 2nd 9 Weeks

- Use the Objective Level Report and write in the standards assessed on the 2nd 9 weeks CA.
 1. List your students' names for your homeroom.
 2. Look at their objective report and write the percentage for each standard
 3. For each standard, highlight 60% and above green and below 60% pink.

| Student Names/Overall Total | Language Total | Lit Total | Info Total |
|-----------------------------|----------------|-----------|------------|
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A Note on Scaffolding Instruction

By identifying standards students struggled with, teachers can use the scaffolding document to understand where students might have gaps or be ready for more advanced content, allowing them to better plan tiered instruction.

Using the Scaffolding Document....

1. Locate the 2 weakest standards from *Common Assessment* that you chose above.
2. Identify the gaps.....Look at the evidence column on the SD for that standard. Which piece of evidence did the students not master?
Standard _____
Standard _____
3. Next steps/Strategies- What are our next steps to ensure these standards are mastered and the gaps are closed?



Step 2: Group Students for Tiered Instruction

Using data from the previous chart, identify students who scored below 60% for each standard and record their names. **This creates a grouping system to assist in planning tiered tasks and small group intervention support.**

| Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
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What is tiered instruction?

Tiered instruction is making slight adjustments within the same lesson to meet student needs. This includes, but is not limited to:

- Level of complexity
- Amount of structure
- Time allowed
- Number of steps required for completion
- Form of expression (letter, essay, report, research paper, short story, speech)
- Pacing of the assignment
- Materials provided
- Level of independence required



Planning a Tiered Instruction Lesson

Step 1:

Identify the key concepts, skills, and essential understandings all students need to achieve.

Step 2:

Identify how to cluster groups/activities. There can be multiple levels of tiers, but the number of levels need to be consistent with the tier groups students are currently in.



Planning a Tiered Instruction Lesson

Step 3:

Select the elements to tier.

- Tier by **challenge level** using Bloom's Taxonomy
- Tier by **complexity** by addressing the needs of students at all levels, introductory to advanced
- Tier by **resources** by choosing materials at various reading levels and content complexities
- Tier by **outcomes** by having students use the same materials to develop various end products
- Tier by **process** by having students come to the same end product in their own different ways
- Tier by **product** by grouping students by intelligences or learning styles followed by assignments which fit their preferences



Planning a Tiered Instruction Lesson

Step 4:

Create your on-level tier.

Step 5:

Design a similar task for struggling learners where adjustments are based on student readiness.

Step 6:

If needed, develop a third, more advanced activity for learners who have already mastered the basic standard or competency. This task needs to require more higher-level thinking than the on-level task. Remember that the advanced tier should not be more repetitions or longer assignments of the same on-level task.



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DIFFERENTIATED INSTRUCTION ACTIVITIES



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Differentiated Instruction Strategies - MENU

Menus

1. Identify the most important element of the lesson or unit
2. Develop a required assignment or project that covers the minimum understanding all students are expected to achieve
3. Create negotiables that expand upon the “main dish” (required assignment) which require students to synthesize, analyze, or evaluate.
4. Create a final optional section for enrichment. This section can be used for extra credit.



Differentiated Instruction Strategies - MENU

Menus

| | Overview |
|---|--|
| Appetizers (Negotiables) | - A list of assignments or projects where students need to synthesize, analyze, or evaluate (Choose 1) |
| The Main Dish (Imperatives) | - The assignment or project everyone must complete |
| Side Dishes (Imperatives) | - A list of assignments or projects where students need to synthesize, analyze, or evaluate (Choose 2) |
| Desserts (Extension Options) | - Optional (but irresistible!) high-interest and challenging assignments or projects (Choose 1) |



Differentiated Instructional Strategies - MENU

| Main Dish | Side Dish | Dessert |
|--|--|--|
| You must complete all items to earn a C. | You must complete one to earn a B. You must complete two to earn an A. | Complete one for an A. |
| <ul style="list-style-type: none"> - Create a list of 10 pairs of events. 5 pairs should contain dependent events, the other 5 pairs should contain independent events. Explain each classification. - Examine the attached list of functions and determine which functions represent probability distributions. | <ul style="list-style-type: none"> - Work with a partner to analyze the game of "Primarily Odd." See your teacher for game cubes. - Design a game spinner with this probability distribution: P(red)=0.1; P(green)=0.2; P(blue)=0.3; P(yellow)=0.4 | <ul style="list-style-type: none"> - Figure the probability of "Murphy's Law" and make a case for whether or not it should indeed be a "law." - Use a frequency table to chart the colors that your classmates wear for a week. Then, use probability to predict how many students will wear a certain color on a given day. |

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MENU Activity

Work with your table group to create menu items based on an upcoming unit to complete the template:

| Main Dish | Side Dish | Dessert |
|--|--|------------------------|
| You must complete all items to earn a C. | You must complete one to earn a B. You must complete two to earn an A. | Complete one for an A. |
| | | |

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Differentiated Instructional Strategy - CUBING

Group Discussion and Cooperative Learning Strategies:

Think-Pair-Share

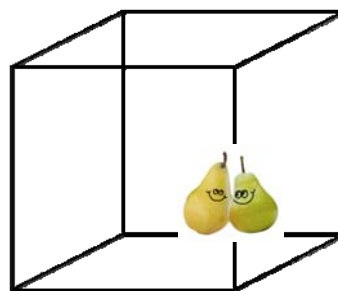


- What is the benefit of the Menu?
- What additional planning does the classroom teacher need to do to begin using the Menu?
- How do you expect to see students respond to the Menu?

Differentiated Instructional Strategy - CUBING

Cubing

- Introduce by applying to a familiar object, such as a candy.
- Have students work in groups or pairs.



Differentiated Instructional Strategy - CUBING

Cubing

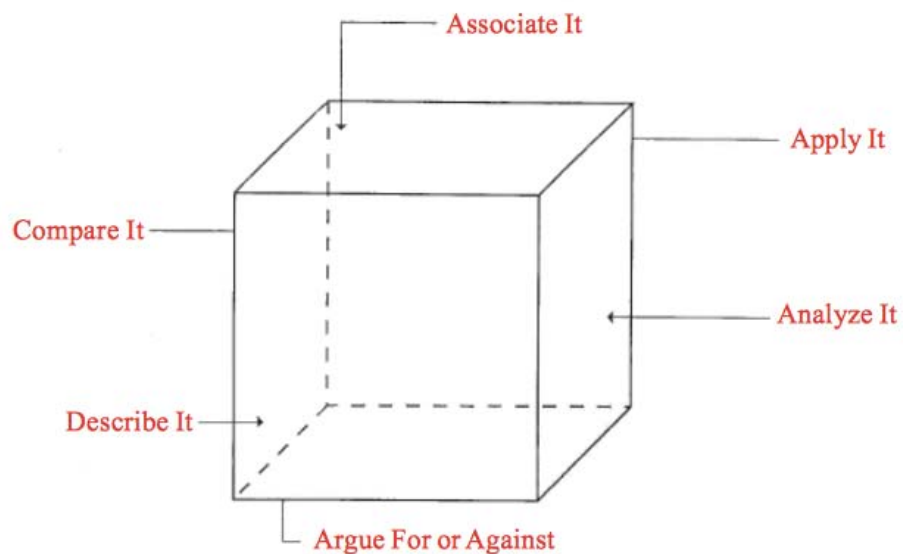
- **Describe It** – What does it look like?
- **Compare It** – Compared to something else, what is it similar to or different from?
- **Associate It** – What do you associate it with? What does it make you think of?
- **Analyze It** – What are its parts? How is it made?
- **Apply It** – What can you do with it? How can you use it?
- **Argue For or Against It** – Present an argument. Give students 10 minutes to build a mini-presentation and share out.



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Differentiated Instructional Strategy - CUBING



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Differentiated Instructional Strategy **Cubing Activity**

LET'S TRY

CHOOSE ONE OBJECT:

Describe It – What does it look like?

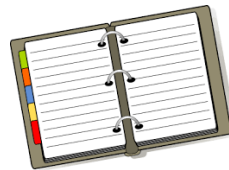
Compare It – Compared to something else, what is it similar to or different from?

Associate It – What do you associate it with? What does it make you think of?

Analyze It – What are its parts? How is it made?

Apply It – What can you do with it? How can you use it?

Argue For or Against It – Present an argument.



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Table Talk **Activity**

Group Discussion and Cooperative Learning Strategies:

Numbered Heads Together



- What planning needs to be done by the teacher prior to using the cube strategy?
- How can the cube be used across content areas to differentiate instruction?
- How could the cube be used for both group and independent work?



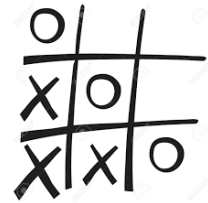
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Differentiated Instructional Strategy – Tic Tac Toe

Tic-Tac-Toe

- Identify the instructional focus of a unit of study
- Use assessment data and student profiles to determine student readiness, learning styles, and interests
- Design nine different tasks
- Arrange the tasks on a choice board
- Select one task required for all students and place it at the center
- Students complete three tasks, one of which must be the task in the middle square, completing a Tic-Tac-Toe row



Differentiated Instructional Strategy – Tic Tac Toe

Tic-Tac-Toe Adaptations

- Allow students to complete any three tasks, even if they don't make a Tic-Tac-Toe
- Assign students tasks based on their readiness, or create different choice boards based on readiness
- Create choice board options based on learning styles or learning preferences (Example: a choice board could include three kinesthetic tasks, three auditory tasks, and three visual tasks)



Differentiated Instructional Strategy – Tic Tac Toe

Tic-Tac-Toe Example

| | | |
|---------------------------|------------------|--------------------|
| Interpersonal Task | Kinesthetic Task | Naturalist Task |
| Logical Task | Student Choice | Intrapersonal Task |
| Interpersonal Verbal Task | Musical Task | Verbal Task |



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Differentiated Instructional Strategy – Tic Tac Toe

| | | |
|---|---|---|
| Draw a right triangle and label the right angle, legs, and hypotenuse. State the relationship of the sides of a triangle. | Name a career in which one would have to use the Pythagorean Theorem. Give an example of when, where, and how it would be used. | Design a teaching tool with a diagram of a proof of the Pythagorean Theorem. Label it for all to understand. |
| Create 4 real world problems that would need the use of the Pythagorean Theorem. Show the solutions. | Unit Test | Determine a set of 8 Pythagorean "TRIPLES." Prove them with equations. |
| Write a descriptive essay about Pythagoras: his life, accomplishments, and failures. | Find another mathematical theorem. State it, diagram its proof, and write a paragraph about why, how and where it works. | Complete the Practice Problems found at this: http://regentsprep/Regents/math/fpyth/PracPyth.htm |

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Tic Tac Toe Activity

Work with your table group to develop a Tic-Tac-Toe board based on an upcoming unit. Record on the chart paper. Be prepared to share out!



Table Talk Activity

Group Discussion and Cooperative Learning Strategies:

Tea Party



- What is your previous interaction with “Tic-Tac-Toe” in the classroom?
- How can Tic-Tac-Toe be used as a differentiated instruction tool?
- How do you see yourself using this strategy in your classroom?

Differentiated Instructional Strategy - TECH

Technology Benefits

- Multimedia reaches multiple senses
- Multimedia projects validate self-expression
- Technology gives a sense of ownership to the user
- Multimedia creates an active rather than passive atmosphere for learning
- Technology fosters communication among students, as well as between students and teachers



Table Talk Activity

Technology Activity

- Discuss technology resources you currently use in your classroom or school.
- Record the resources on the anchor chart paper.
- Be prepared to share a brief synopsis of your favorite technology tool and how it benefits differentiated instruction.

In Closing, WHY Differentiated Instruction?

Gina Biancarosa and Catherine Snow (2004), authors of *Reading Next*, point to a statistic that should cause all middle grade, middle school, and high school educators to rethink their instructional practices. They note:

“A full **70 percent of U.S. middle and high school students require differentiated instruction**, which is instruction targeted to their individual strengths and weaknesses.”



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Exit Ticket



- List **THREE** things you remember from this session.
- Share **TWO** examples of something you would like to try.
- Write down **ONE** question on a post-it note that you would like more information on.



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Sources

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http://www.litandlearn.lpb.org/strategies/strat_cubing.pdf

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

Tomlinson, Carol Ann, and Jay McTighe. *Integrating Differentiated Instruction and Understanding by Design: Connecting Content and Kids*. Alexandria, VA: ASCD, 2006

Witherell, Nancy L., and Mary C. McMackin. *Graphic Organizers and Activities for Differentiated Instruction in Reading*. New York: Scholastic, 2002.

 Wormeli, Rick. *Fair Isn't Always Equal: Assessing & Grading in the Differentiated Classroom*. Portland, ME: Stenhouse, 2006.

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Resources

Reading Rockets “What is Differentiated Instruction?”

<http://www.readingrockets.org/article/what-differentiated-instruction>

Strategies That Differentiate Instruction (Grades 4 and 5)

<http://education.ky.gov/educational/diff/Documents/StrategiesThatDifferentiateInstruction4.12.pdf>

Cooperative Learning Instructional Strategies

http://www.teach-nology.com/currenttrends/cooperative_learning/

6 Strategies for Differentiated Instruction in Project-Based Learning

<https://www.edutopia.org/blog/differentiated-instruction-strategies-pbl-andrew-miller>

Scholastic “4 Proven Strategies for Differentiating Instruction”

<https://beta.scholastic.com/teachers/articles/teaching-content/4-proven-strategies-differentiating-instruction/>



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Resources

Florida Center for Reading Research Center Activities

<http://www.fcrr.org/curriculum/SCAindex.shtm>

“Collection of Ready-to-use Literacy Center Ideas for Grades 3-5”

http://www.franklinboe.org/cms/lib/NJ01000817/Centricity/Domain/39/A_collection_of_ready_to_use_Literacy_Centers_Grades_3-5.pdf

Cooperative Learning Activities and Strategies

<http://www.colorincolorado.org/article/cooperative-learning-strategies>



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Analyzing Common Assessment Data

Using the Objective report....

1. Put a Star beside the standards that have been taught this 9 weeks.
2. Out of the standards taught, highlight 60% and above green and anything below pink.
3. What are the 2 weakest standards that you highlighted pink?

Standard 1

Standard 2

Using a hard copy of the Common Assessment....

1. Locate the questions that assessed the weakest standard on the Common Assessment.
2. Complete the section below about each question.

| Question # _____ Standard _____ | Question # _____ Standard _____ | Question # _____ Standard _____ | Question # _____ Standard _____ |
|--|--|--|--|
| 1. What is the question asking the students to do? (verb) _____ _____ _____ _____ | 1. What is the question asking the students to do? (verb) _____ _____ _____ _____ | 1. What is the question asking the students to do? (verb) _____ _____ _____ _____ | 1. What is the question asking the students to do? (verb) _____ _____ _____ _____ |
| 2. What format is used to assess the standard? <ul style="list-style-type: none"> • MC • Part A and B • Fill in the Blank • Graphic Organizer • Select more than one answer • Drag and Drop | 2. What format is used to assess the standard? <ul style="list-style-type: none"> • MC • Part A and B • Fill in the Blank • Graphic Organizer • Select more than one answer • Drag and Drop | 2. What format is used to assess the standard? <ul style="list-style-type: none"> • MC • Part A and B • Fill in the Blank • Graphic Organizer • Select more than one answer • Drag and Drop | 2. What format is used to assess the standard? <ul style="list-style-type: none"> • MC • Part A and B • Fill in the Blank • Graphic Organizer • Select more than one answer • Drag and Drop |

Using the Scaffolding Document....

1. Locate the 2 weakest standards from Common Assessment that you chose above.

2. Identify the gaps....Look at the evidence column on the SD for that standard. Which piece of evidence did the students not master?

Standard _____

Standard _____

3. Next steps/Strategies- What are our next steps to ensure these standards are mastered and the gaps are closed?

Analyzing Individual Student Common Assessment Data

* Use the Objective Level Report and write in the standards assessed on the Common Assessment.

1. List your students' names for your homeroom.
2. Look at their objective report and write the percentage for each standard
3. For each standard, highlight 60% and above green and below 60% pink.

| Student Names/Overall Total | | | | | | Language Total | | | | | | | Lit Total | | | | | | | | | | Info Total |
|-----------------------------------|--|--|--|--|--|-------------------|--|--|--|--|--|--|--------------|--|--|--|--|--|--|--|--|--|---------------|
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Use for Small Group Purposes

| Students below 60% Standard _____ — | Students below 60% Standard _____ — | Students below 60% Standard _____ — | Students below 60% Standard _____ — | Students below 60% Standard _____ — | Students below 60% Standard _____ — | Students below 60% Standard _____ — | Students below 60% Standard _____ — | Students below 60% Standard _____ — |
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| Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ | Students below 60% Standard _____ |
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