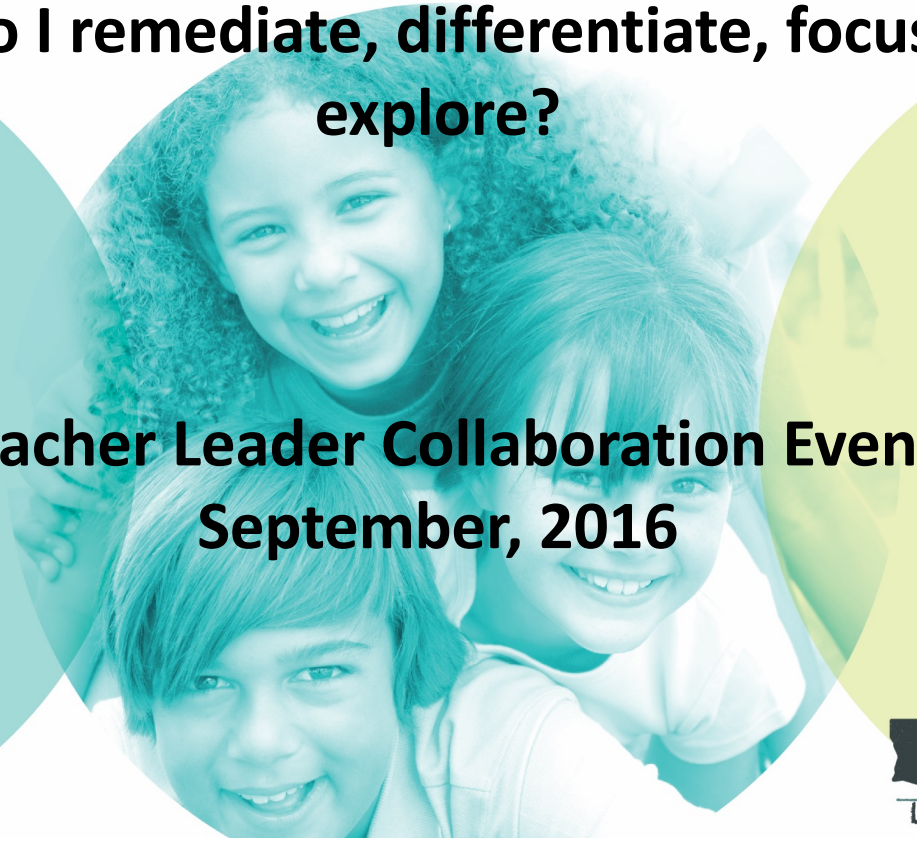
TEACHER LEADERS

ENGAGE. EMPOWER. INSPIRE.

How do I remediate, differentiate, focus, and explore?



Teacher Leader Collaboration Event
September, 2016

DEPARTMENT of EDUCATION

Louisiana Believes

Today's Goals

Today we will answer the questions:

1. How do I provide on-time remediation while teaching grade level content?
2. How do I provide opportunities for enrichment while teaching grade level content?
3. How do I ensure my lessons are moving my students towards mastery of my standards?

By the end of today's session, you will feel better equipped and more confident in adjusting the implementation of quality lessons to best meet the needs of your individual students.

Agenda

- Introduction (2 min)
- Framing the Lesson (5 min)
- Experiencing the Lesson (40 min)
- Reflecting on the Lesson (15 min)
- Resources (5 min)
- Closing (5 min)

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Framing the Lesson

Target standard: 7.EE.B.4 – at introductory level

- build on previous grade level standards: 6.EE.B.6
- standard taught in advance: 7.NS.A.3
- standard taught concurrently: 7.RP.A.2

http://www.louisianabelieves.com/docs/default-source/teacher-toolbox-resources/new-standards---grade-7-remediation-guide.pdf?sfvrsn=4

7th Grade Standard	Previous Grade(s) Standards	7th Grade Standards Taught in Advance	7th Grade Standards Taught Concurrently
7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?* b. Solve word problems leading to inequalities of the form $px + q > r$, $px + q \geq r$, $px + q < r$ or $px + q \leq r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*	6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 6.EE.B.7 Solve real-world and mathematical problems by writing and solving equations and inequalities of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers. Inequalities will include <, >, ≤, and ≥. 6.EE.B.8 rite an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	7.RP.A.2 Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.* d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.

Framing the Lesson

Becoming the Students…

- As a whole, working on the Introductory Level with Target Standard 7.EE.B4
- Below Level, Coming to you with gaps in prior knowledge

(Never fully mastered standards 6.EE.A.2-3, & 6.EE.B.6-8)

- At level, Coming to you with the need of some review

(Some understanding of standards 6.EE.2-3, & 6.EE.B6-8)

- Above Level, Coming to you with a solid foundation

(Proficient in standards 6.EE.2-3, & 6.EE.B6-8)

Framing the Lesson (cont.)

Assess Students' prior knowledge – short formative assessment administered the day before

Stations – Station A – remediation

Station B – Vocabulary/Making Sense of Context

Station B – exploratory challenges 1

Station C – exploratory challenges 2

Station D – extension 1 – Problem Creation Station

Station E – extension 2 – Extending the Lesson

Framing the Lesson (cont.)

During the lesson, pay attention to the following:

1. Structure of lesson
2. Elements of rigor targeted
3. Remediation and enrichment
4. Differentiation
5. Development and demonstration of the standard being measured.

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Experiencing the Lesson

Opening Exercise

For his birthday, Zack and 3 of his friends went to movie. They each got a ticket for $8.00 and the same snack from the concession stand. If Zack's mom paid $48 for the group's tickets and snacks, how much did each snack cost?

Place answers on white board.
Share and discuss with your partner.
Share answers with the class.

Experiencing the Lesson

Stations

Each group will rotate through 3 stations.
Group 1 – Stations A -> B -> C
Group 2 – Stations B -> C -> D
Group 3 – Stations C -> D -> E

You have 8 minutes to solve the given problem at each station. You can use diagrams, equations, or any other methods you prefer, but make sure you are able to explain HOW you solved it.

Experiencing the Lesson

Whole class discussion (Possible partner and then whole class discussion)

- What method(s) did you use to solve the problem?
- Is one method more effective than the other(s)? Why or why not?
- Are there any similarities in the steps you were taking using one method and the steps that were taken by another method? Give an example.

Experiencing the Lesson

Exercise: Independent Practice

The cost of a babysitting service on a cruise is $10 for the first hour and $12 for each additional hour. If the total cost of babysitting baby Aaron was $58, how many hours was Aaron at the sitter?

Place answers on white board.
Share answers with the class.

Experiencing the Lesson

Exit Ticket

Henry is using a total of 16 ft. Of lumber to make a bookcase. The left and right sides of the bookcase are each 4 ft. High. The top, bottom, and two shelves are all the same length, labeled *s.* How long is each shelf?

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Remediation

What actions did the teacher take to support remediation during implementation of the lesson?

Differentiation

What actions did the teacher take to differentiate the mathematics of the lesson and/or the implementation of the lesson?

Focus

What actions did the teacher take to ensure the lesson stayed on track in pushing students towards mastery of the target standard?

Explore

What actions did the teacher take to allow students to interact with the mathematics of the lesson?

What actions did the teacher take to allow students the opportunity to go beyond the expected outcomes of the lesson?

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Resources

http://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning

1. Louisiana Guide to Implementing Eureka (coming soon)
2. Guide to Rigor
3. Focus by Grade Level (coming soon)

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Closing Discussion

Discuss the following questions with a colleague:

1. How can I modify my current instructional resource to better meet the needs of my individual students?
2. What do I need to do differently in my classroom as a result of this session?
3. How will I help other teachers at my school understand how to use a single high quality lesson to meet the needs of all students?

Edmodo Math Groups

Network with other math teachers, share resources, and discuss successful strategies using Edmodo.

1. Visit: http://www.edmodo.com
2. Create an account
3. Use code: LKEAQ4