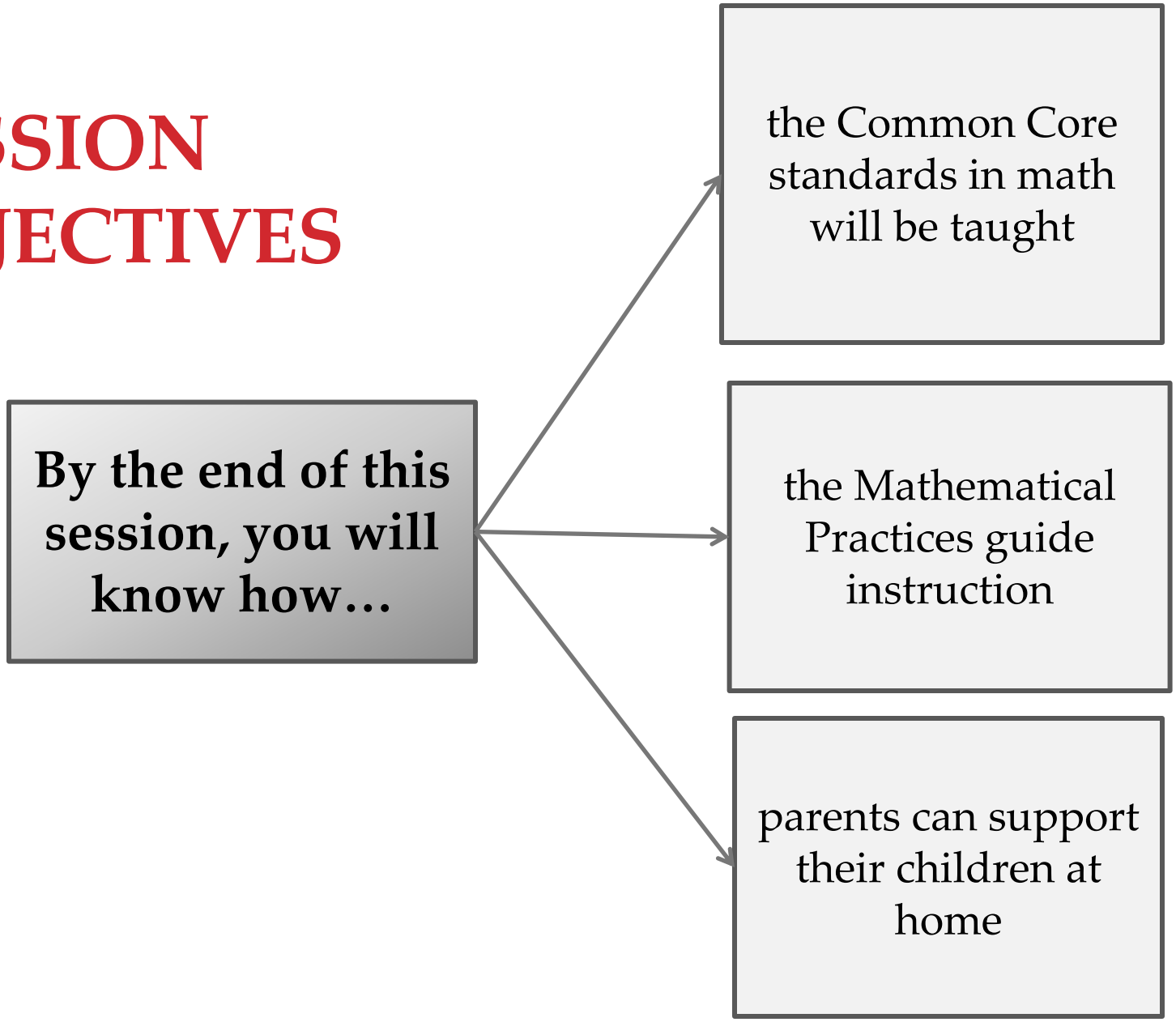
COMMON CORE STANDARDS PARENT WORKSHOP SERIES

UNDERSTANDING MATHEMATICAL SHIFTS

FEBRUARY 26, 2014

SESSION OBJECTIVES



Solve the equations:

$7 \times 3 =$

$3 \times (10 - 3) =$

$(5 \times 4) + 1 =$

STOP & THINK

What skills were necessary to solve the problems?

What strategies did you use to solve the problems?

Find expressions that are equal to the product of 3 and 7.

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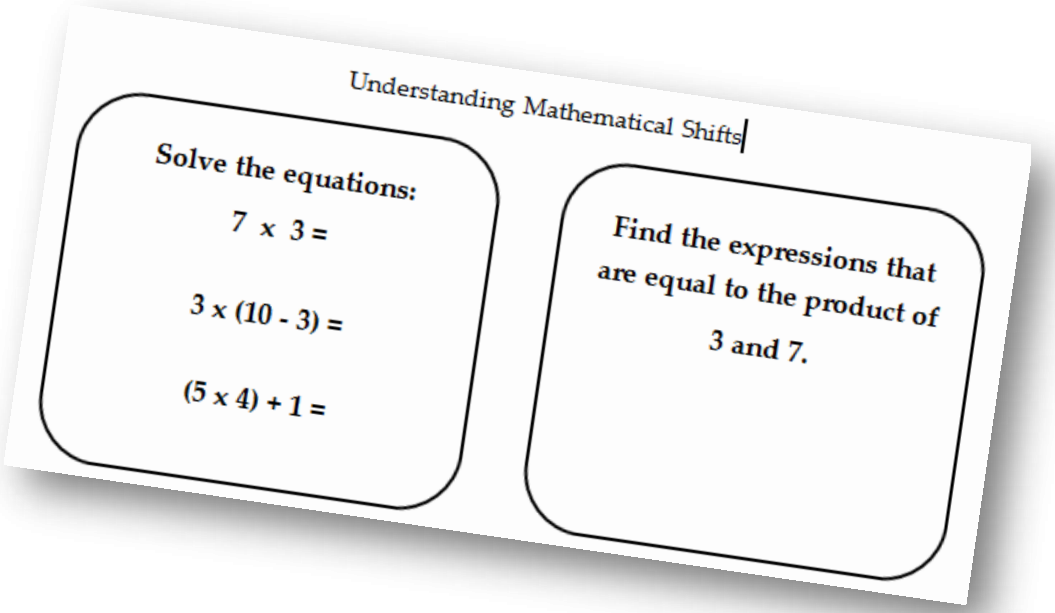

What differences do you see in the way the problems are presented?

What skills are needed for students to successfully answer each of these problems? Discuss at your table.

How does this problem reflect our current expectations?

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Choose **all** the expressions that are equal to the product of 3 and 7.

- ☐ $2 \times 7 + 1 \times 7$
- ☐ $(7 \times 5) - 2$
- ☐ $(3 \times 4) + (3 \times 5)$
- ☐ $3 \times (7 \times 1)$

Example from Smarter Balanced Grade 3

HOW ARE THE NEW STANDARDS DIFFERENT?

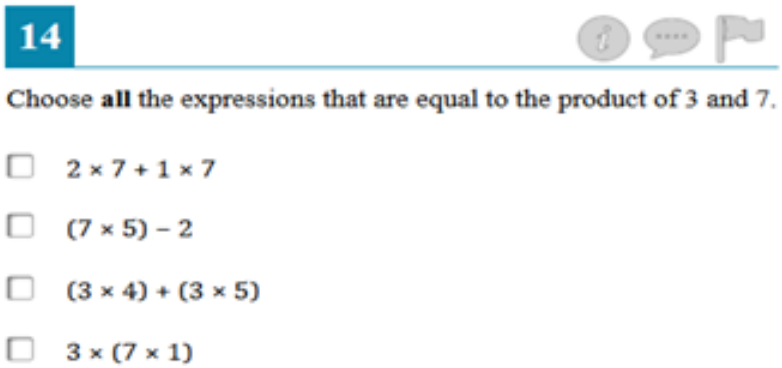
Previous Expectations	vs	Current Expectations
Many standards (mile wide, inch deep), focusing on isolated topics		Fewer standards, focusing on how learning progresses and connects across grades
Procedures (the steps to solve/simplify)		Balance of application, conceptual understanding, and procedural fluency
One way to represent		Multiple ways to represent, making connections
Memorizing basic facts and formulas, and repeated skill practice		Emphasizing critical thinking, reasoning, and problem-solving
CST (STAR)		SBAC

EIGHT MATHEMATICAL PRACTICES

1. **Make sense of problems and persevere in solving them.**
2. **Reason abstractly and quantitatively.**
3. **Construct viable arguments and critique the reasoning of others.**
4. **Model with mathematics.**
5. **Use appropriate tools strategically.**
6. **Attend to precision.**
7. **Look for and make use of structure.**
8. **Look for and express regularity in repeated reasoning.**

EIGHT MATHEMATICAL PRACTICES

Understanding Mathematical Shifts



1. Make sense of problems and persevere in solving them. ☐
2. Reason abstractly and quantitatively. ☐
3. Construct viable arguments and critique the reasoning of others. ☐
4. Model with mathematics. ☐
5. Use appropriate tools strategically. ☐
6. Attend to precision. ☐
7. Look for and make use of structure. ☐
8. Look for and express regularity in repeated reasoning. ☐

EIGHT MATHEMATICAL PRACTICES

Practical Ideas to Support at Home

Give One-Get One

I can solve problems without giving up.	I can use math tools and explain why I used them.
I can think about numbers in many ways.	I can work carefully and check my work.
I can explain my thinking and try to understand others.	I can use what I know to solve new problems.
I can show my work in many ways.	I can solve problems by looking for rules and patterns.

SUPPORTING WITH HOMEWORK

What could you do to support your children in their use of the eight Mathematical Practices with their math homework and daily life?

Take a minute to write your ideas down.

GIVE ONE GET ONE

- **Walk around the room and meet a new parent.**
- **Introduce yourself.**
- **Share one idea from your list.**
- **Get an idea for your list.**
- **Move to a new partner and repeat the process.**

PRACTICAL IDEAS TO SUPPORT AT HOME

Play Time

- Count blocks as he or she builds a tower
- Sort toys by size, kind, or color
- Put toys in order from largest to smallest

In the Kitchen

- Divide a plate of cookies evenly so that each member gets equal share
- Help double a recipe
- Find how many glasses of milk are in a carton of milk

Around the House

- Find the length and width of a room
- Draw a diagram of how to rearrange furniture in a room
- Create a family TV schedule and track the amount of TV watched

Outside the House

- Measure a plant and keep track of how it grows
- Keep daily chart of temperature and graph it
- Find shapes around the neighborhood

HOW ELSE CAN YOU HELP AT HOME?

- Talk about math in positive ways
- Help students notice math around them
- Ask complex questions that require more than a yes and no answer
- Ask your child to explain their reasoning using examples and reasons
- Communicate with teachers about their progress (in person or online)

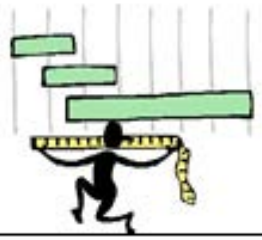
Eight Mathematical Practices

1. **Make sense of problems and persevere in solving them**

2. **Reason abstractly and quantitatively**

3. **Construct viable arguments and critique the reasoning of others**

4. **Model with mathematics**



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