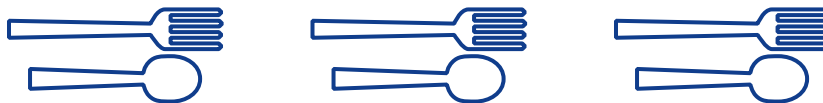
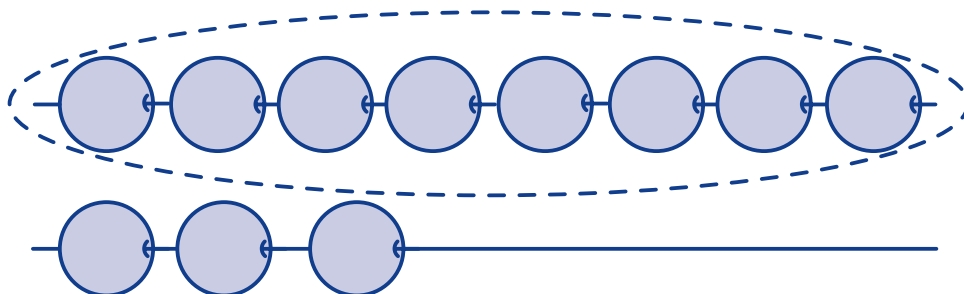


NAME: _____

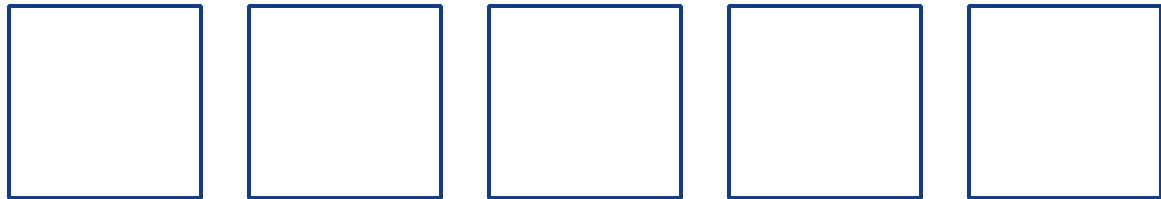
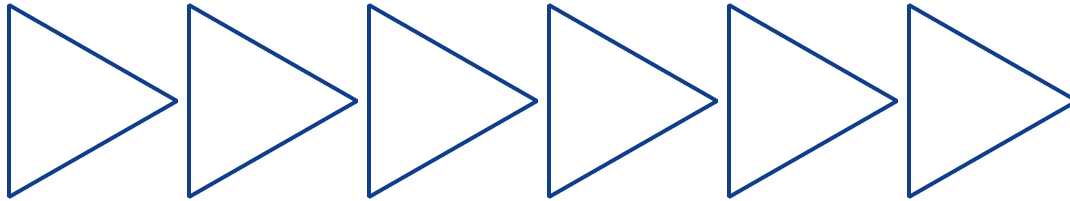
Math Words

extra**match****more**

NAME: _____

Starter Problem

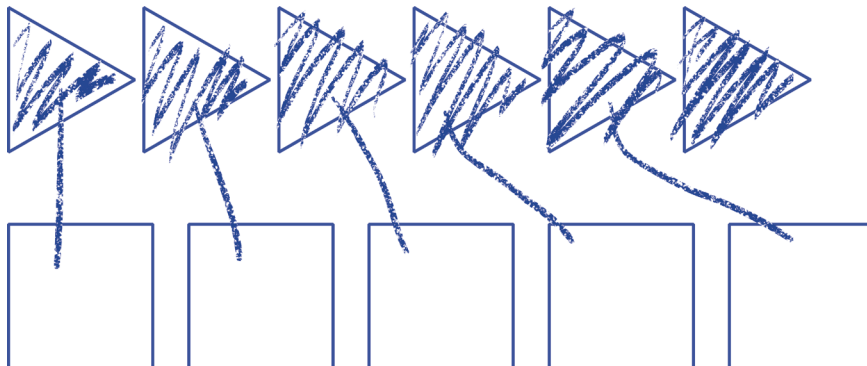
Color in the row that has more shapes.



Student Thinking

**Benji**

I drew a line to match each triangle to a square. The top row has 1 extra. It has more shapes.

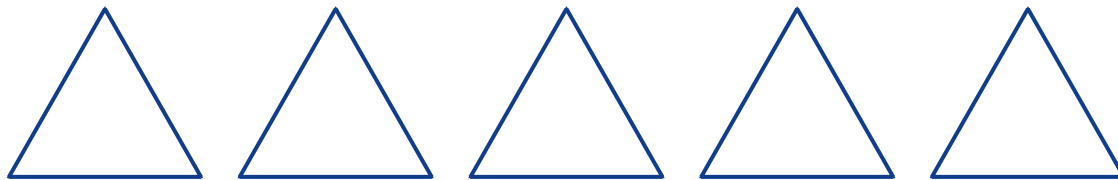
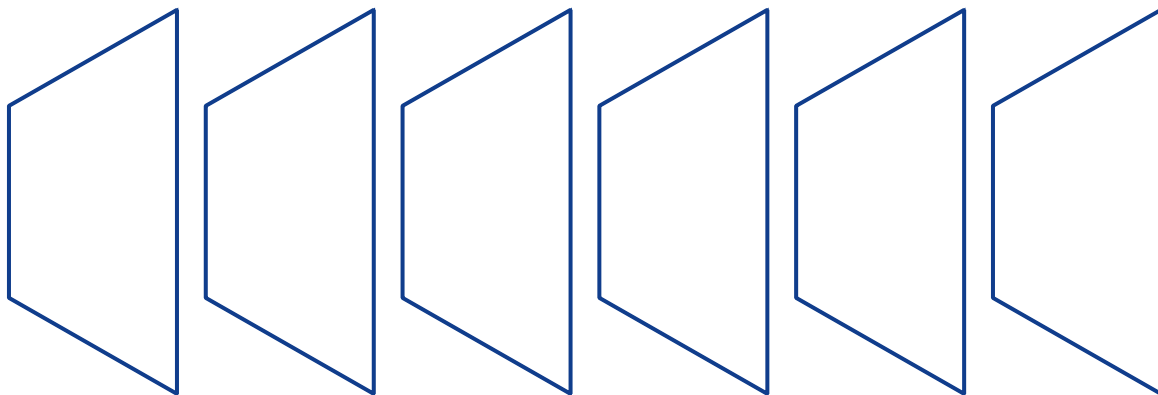


NAME: _____

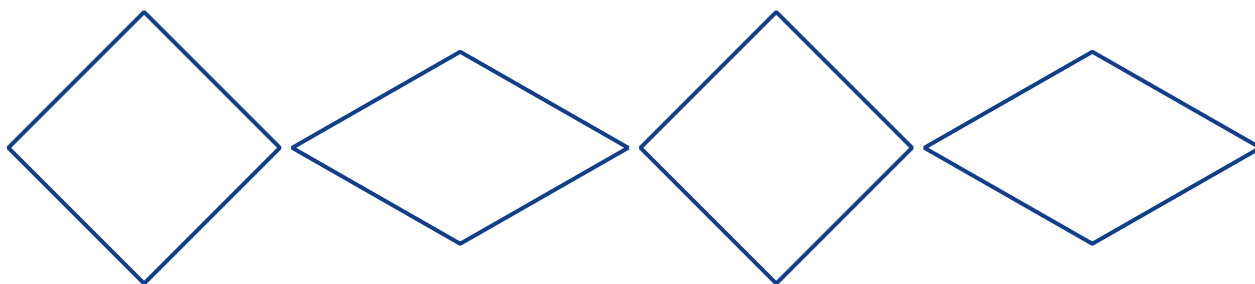
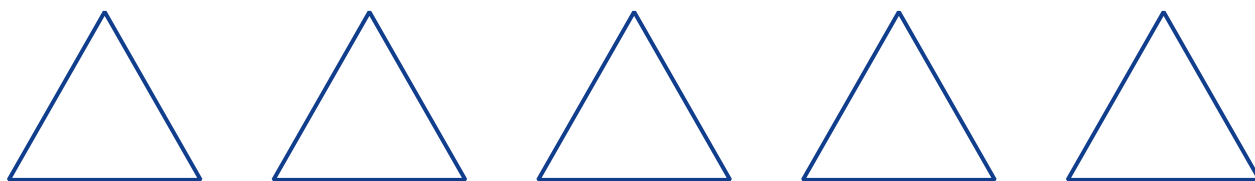
Our Turn

Color in the row that has more.

1.



2.

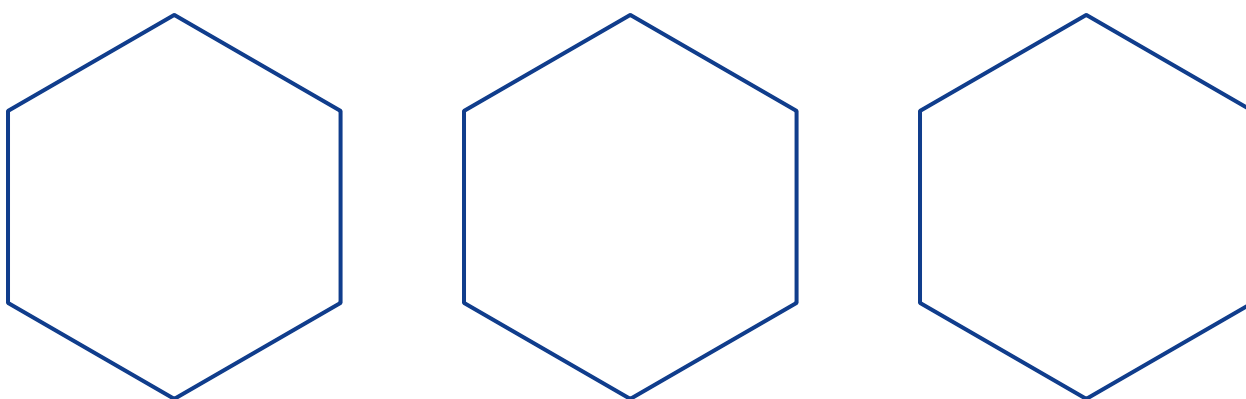
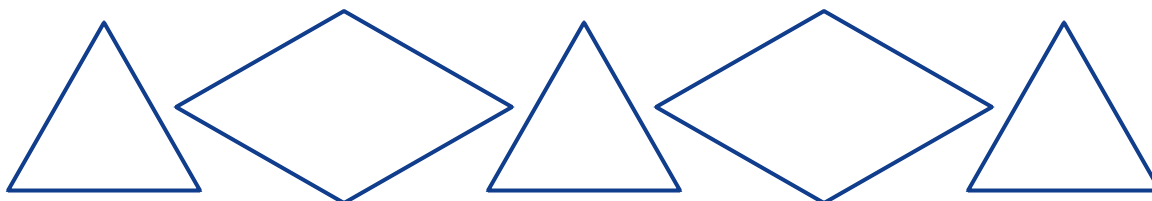


NAME: _____

Mini Lesson

Color in the row that has more shapes.

1.



2.



Which Row Has More?

Lesson at a Glance

Prior Learning Needed

- Match real objects (e.g., cups and beans) one-to-one

Lesson Preparation















- Study Lesson Foundation
- Review Teaching Guide and Student Pages
- Prepare packet of Student Pages 2–4 for each student
- Enlarge Student Pages for lesson circle or make transparencies (optional)
- Post *Discussion Builders* poster

Mathematical goals

- * Compare sets to determine if the sets have the same number
- * Compare numbers using one-to-one correspondence

Mathematical language and reasoning goals

- * Ignore distractions of size and shape when comparing numbers of objects
- * Understand the relationship between having extra and having more

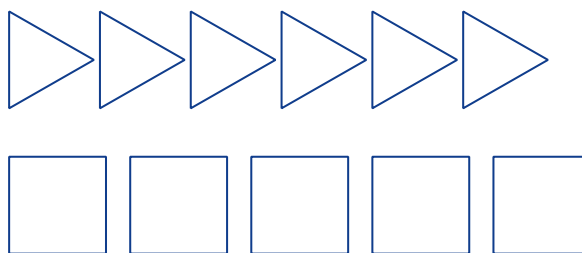
LESSON ROADMAP			MATERIALS
CORE LESSON: DAY 1	GROUPING	TIME	<ul style="list-style-type: none">○ <i>Discussion Builders</i> poster○ Projector (optional)○ Chart paper (optional)○ Student Pages 1 and 2○ Teaching Guide○ Blocks used for making geometric patterns, crayons (suggested)
Opener			
<i>Discussion Builders</i>			
Purpose			
Math Words			
Starter Problem			
Discussion			
Student Thinking			
Things to Remember			
Reflection			
CORE LESSON: DAY 2			<ul style="list-style-type: none">○ Clipboard Prompts, page 37○ Student Pages 2 and 3○ Teaching Guide○ Blocks used for making geometric patterns, crayons (suggested)
Review and Practice			
Review Day 1 Lesson			
Our Turn			
MINI LESSON: 2–3 DAYS LATER			<ul style="list-style-type: none">○ Student Page 4○ Teaching Guide○ Blocks used for making geometric patterns, crayons (suggested)
Assess and Reinforce			
Mini Lesson			

Lesson Foundation

LESSON SNAPSHOT

Starter Problem

Color in the row that has more shapes.

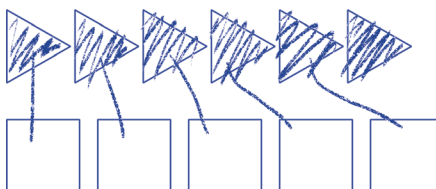


Student Thinking



Benji

I drew a line to match each triangle to a square. The top row has 1 extra. It has more shapes.



MATHEMATICAL INSIGHTS & TEACHING TIPS

One-to-One Correspondence and Extras

Benji used the important mathematical idea of one-to-one correspondence to match each shape in the top row with a shape in the bottom row until he ran out of shapes in one row. Since the top row has one extra shape, it has more shapes than the bottom row. If every shape in the top row had a match in the bottom row, the rows would have the same number of shapes. Students need to understand the key idea that the row that has extras is the row that has more shapes.



Every time students match and find extras, reinforce the relationship between more and extra by saying, "1 extra is the same as 1 more." This lays the foundation for understanding subtraction problems that ask "How many more?"

Oops!

Many students will rely on their visual perceptions, perhaps thinking that there are more squares because they are larger and more spread out or because the triangles are smaller and closer together. Many experiences are needed to foster students' understanding of how to use one-to-one correspondence to compare numbers of objects.

**Lesson
Foundation**
(continued)**MATHEMATICAL INSIGHTS & TEACHING TIPS** (CONTINUED)**Shape and Size Distractions**

Some students may mistakenly think that the row of squares has more shapes than the row of triangles because the squares look bigger or the row looks longer. Sometimes, but not always, the row that is longer has fewer shapes than the row that is shorter. Even if the shapes in each row are equidistant from each other, students can't always rely on comparing the lengths of rows as they did when objects being counted were the same size and shape.

Counting and Comparing

Benji could have counted to check. Counting is complicated. It involves pointing to each shape while saying the correct number word, then answering the question "How many?" by giving the last number in the counting sequence. However, young students whose counting skills and number concepts are still developing may see nothing wrong with counting 5 in the bottom row and 6 in the top row, then saying that the bottom row has more because it sticks out more. They may not yet have the idea that 6 is always more than 5 because it comes later in the counting sequence. Experience and discussion will help foster the development of these counting skills and number concepts over time.

MATHEMATICAL DISCUSSION SUPPORT

Ask students to show different ways to find which row of shapes has more shapes in it. For example, they may match shapes by drawing lines between pairs, by coupling real blocks, or by pointing to pairs using a finger and thumb.



Make sure students understand that "more" in this case means a greater number. Some rows of shapes have larger shapes, even if there are fewer of them.

Explicitly let students know they are finding not the larger shapes, but the row that has more shapes in it.

Core Lesson Day 1

Opener

Review *Discussion Builders*

Read the poster. **Suggest** a section to focus on today:

Sharing Our Ideas, Adding to Others' Ideas, or Asking More Questions.

Purpose



In a grocery store you might find a row of cans and a row of boxes. Raise your hand if you think you could find out if there are more cans or more boxes.

Today we are going to have a discussion to learn different ways to find out which row has more things.

Math Words

Display page 1.

Point to and say the first math word.

Read the sentence from the chart below and give an example.

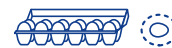
Repeat for each word.

Math Words	Sentences	Examples
extra	There is one <u>extra</u> egg.	Circle the extra egg.
match	There is one fork to <u>match</u> with each spoon.	Show how each fork matches with one spoon.
more	The string with <u>more</u> beads is circled.	Circle the string that has more beads.

STUDENT PAGE 1

Math Words

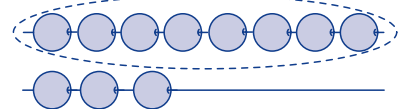
extra



match



more



Starter Problem

Display only the Starter Problem on page 2.

Read and explain the problem.



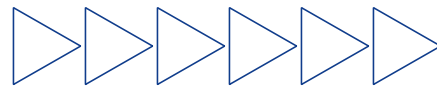
Think silently about how to solve this problem. 

Think about how you could find out which row has more shapes: the top row of triangles or the bottom row of squares. Don't say anything yet! We'll share our ideas a little later.

STUDENT PAGE 2

Starter Problem

Color in the row that has more shapes.



Discussion

Student Thinking

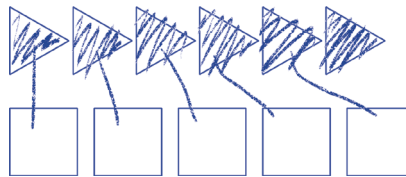
STUDENT PAGE 2

Student Thinking



Benji

I drew a line to match each triangle to a square. The top row has 1 extra. It has more shapes.



Distribute and display page 2. **Explain** that this shows how a pretend student solved the Starter Problem.

Read Benji's statement.



Who can come up and point to the row of triangles on Benji's work?

Who can point to the row of squares?

Raise your hand if you think there are more triangles. Raise your hand if you think there are more squares.

Benji said he drew a line to match each triangle to a square. Who can come up and explain how Benji drew lines between triangles and squares?

Did every triangle and square have a match or is there an extra shape? Who can come up and point to the extra shape? Is it a triangle or a square?

On your own paper, point to the extra shape. It's the only one that doesn't have a match.

The row with an extra shape has more shapes. Whisper to your neighbor which row has more shapes: the triangles or the squares. How do you know?

Please draw lines on your Starter Problem to match each triangle with a square.

Now circle the shape that is extra. Since the row of triangles has one extra, it has more shapes.

Let's color in the row of triangles on our Starter Problem to show it has more shapes.

MORE DAY 1

Core Lesson Day 1 (continued)

Discussion

Student Thinking, continued

Pitfall



It's easy to make an oops when we think that there are more in a row because the shapes are bigger or the row is longer.

Watch how I solve the Starter Problem. Raise your hand if I make an oops!

Demonstrate an oops when solving the Starter Problem. **Point** to the bottom row. **Say** that you think maybe it has more because it's bigger and sticks out farther than the top row. **Ask** students to explain what you did that was an oops.

Draw a top row of 6 large triangles spread out and a bottom row of 8 small triangles spaced close together. **Call on** a student to explain how to find out which row has more triangles. **Call on** a student to show how to check which has fewer by matching.

Things to Remember

Call on students to add to the Things to Remember list on the board or chart paper.

Read the list.

Demonstrate or ask a student to show each idea using a drawing or materials.

Things to Remember List (sample)

1. You can match to see which row has more.
2. When you match, the row that has extras has more.

Reflection

Ask students to reflect on the discussion process using one of the sample prompts.

Reflection Prompts (sample)

- Did anyone hear a *Discussion Builder* used today?
What did you hear someone say?
- Did anyone give another way to solve a problem today?
How did it help us learn?
- Did anyone add on to someone else's idea today?
How did it help us understand?
- Who remembers someone sharing an idea today?
What did they say?
- Why is it important to say when we are confused?

Core Lesson Day 2

Review and Practice

Review

Display page 2.

Ask students to look at the page and think about what they talked about before.

Read the Starter Problem and Benji's statement.

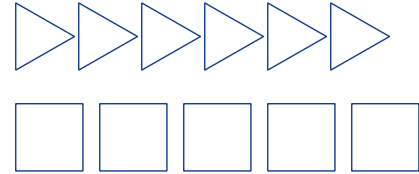
Call on a student to explain how the problem was solved.

Read items from the Things to Remember list created previously.

STUDENT PAGE 2

Starter Problem

Color in the row that has more shapes.

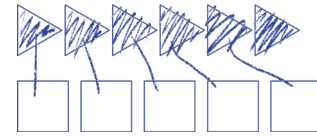


Student Thinking



Benji

I drew a line to match each triangle to a square. The top row has 1 extra. It has more shapes.



Our Turn

Distribute and display page 3.

Use the procedure below and the Clipboard Prompts to discuss students' solutions. Discuss the problems one at a time.

Read and explain the problem. Ask students to solve it.

Call on one or two students to show how they solved it.

Discuss their solutions.

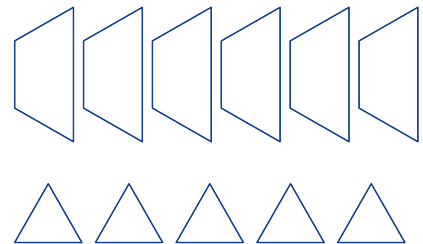
Answer 1. The top row has more shapes.
Key 2. The top row has more shapes.

STUDENT PAGE 3

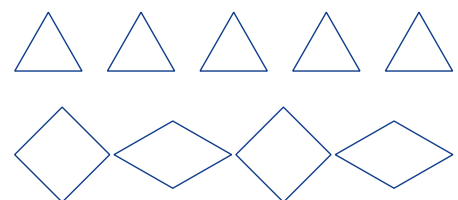
Our Turn

Color in the row that has more.

1.



2.



Mini Lesson

(2–3 Days Later)


Assess and Reinforce

Mini Lesson

Distribute and display page 4. Read the instructions.

Problem 1



Take a minute to think about this problem. Raise your hand when you think you have a way to figure out which row has more shapes. 

Who would like to come up and show us a way to find out?

Why might someone make an oops and think that the bottom row has more shapes?

Why is it a good idea to match the shapes instead of looking at how long the rows are or how big the shapes are?



Remind students that bigger shapes do not necessarily mean more shapes.

Which row of shapes should we color in? Remember, if there are extra shapes, that row has more.

Problem 2



Who would like to come up and show us how to find out which row has more shapes?

Does the top row have extra shapes when you match them? Remember, if there are extra shapes, then that row has more.

Which row should we color in?

Does someone have another way to solve this problem?

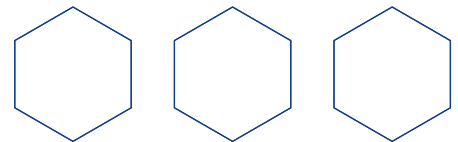
Answer Key
1. The top row has more shapes.
2. The top row has more shapes.

STUDENT PAGE 4

Mini Lesson

Color in the row that has more shapes.

1.



2.

