Eureka Math

Kindergarten Module 3 Lesson 11

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- ➤ Choose MAKE A COPY and rename your presentation.
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Materials

- (T) Balance Scale
- (T) Assorted Objects
- (T) Large 5-group cards
- Hidden Numbers mat
- Small bag of about 10 Lego type building blocks
- Balance scale for small group
- 20 pennies
- Ball of clay / small group or pair

Icons





Read, Draw, Write











Manipulatives Needed







Lesson 11

Objective: Observe conservation of weight on the balance scale.

Suggested Lesson Structure

Fluency Practice
Application Problem
Concept Development
Student Debrief
Total Time

(13 minutes)(5 minutes)(25 minutes)(7 minutes)(50 minutes)





I can observe conservation of weight on the balance scale.



Heavier or Lighter (4 min)

Look at my objects. I'm going to put them on the scale. Watch carefully to see how the scale moves. Raise your hand when you know which one is heavier. Ready?





Heavier or Lighter (4 min)

Now pretend you're the scale! Show me the side that is heavier.

Now, pretend you're the scale and show me which side is lighter.



Double 5-Groups (4 min)

You're getting so good at 5-groups! Now, we'll start using two cards! This is the top card. How many dots are on the top card? (Wait for all hands to go up, and then give the signal.) Ready?

This is the bottom card.

How many dots are on the bottom card?





Double 5-Groups (4 min)

Do you remember how many dots were on the top card?

Do we really need to go back and count them again?

We can take a shortcut. Count on from 10 like this:

10 (wave hand over the top card) Ten 1. Try it!



Double 5-Groups (4 min)

How many dots are on the top card? Ready?

How many dots are on the bottom card? Ready?





Hidden Numbers (5 min)

- Touch and count the fish on your mat. Raise your hand when you know how many. (Wait for all hands to go up, and then give the signal.) Ready?
- Put an X on 5 of the fish. We're not going to count those fish right now. Pretend they swam away!
- Circle a group of 4 from the fish who didn't swim away. How many fish are left?
- Let's circle that 1. How many did you circle all together?



Hidden Numbers (5 min)

Erase your board. Put an X on 5 of the fish again to show they swam away. How many fish did not swim away?

Now, this time, circle a group of 2. Circle another 2.

How many fish have you circled so far?

Circle 1 more. Now, how many are circled?



Hidden Numbers (5 min)

- T: Erase your boards. Put an X on 5 of the fish again to show they swam away. How many fish did not swim away?
- This time, circle a group of 3. Circle a group of 2.
- How many are in the larger group?
- How many are in the smaller group?
- How many did you circle all together?

Application Problem (5 min)

Use your blocks to make the heaviest building that you can. How many pennies are as heavy as your building? Turn to your friend. Talk about your different buildings and how much they weigh.





Concept Development (25 min)

I have a ball of clay for each pair of students. When you get your clay, Partner A will make it into two balls that are about the same size.





Now, here is a balance scale. Partner B, put the two new balls on each side of the scale.





Talk to your partner. Are the balls the same weight? Use the math words heavier than and lighter than.



Show a balance that has a ball of clay on each side, one heavier than the other.) Look at my scale. (Point to the ball that is heavier.)

The one that is lighter?

I want to make the balls the same weight, so I will take a bit of clay from the heavier one and move it to the lighter one. I'll keep moving little pieces until they balance. I'm making sure to keep my clay in the middle, not on the edge.

Now, you try. Take turns moving pieces from the heavier ball to the lighter ball until they balance, until they weigh the same amount.

Are your clay balls the same weight now?



Remove one ball, all of you. Without removing any clay, Partner A, make your ball nice and round. Partner B, make your ball into a pancake. You have 30 seconds.

Put your clay back on the scale. Do they still weigh the same amount?

Partner B, I want you to take your pancake off and quickly make all of it into two balls. (Pause.)

Alk to your partner. What do you think will happen when you put the two smaller balls back on the scale?

Put the balls back on the scale.

How are they the same? Are they the same number? The same size?



Let's try another experiment. Partner A, take your ball and quickly make it into three smaller balls.

Talk to your partner. What will happen this time when Partner A puts his or her part back on the scale.

Put the three balls back on the scale.

Are the two sides of the balance showing the same number of balls?



Are they the same size?

Are they the same weight?



Problem Set (10 min)

Name	

Date_

Draw a line from the balance to the linking cubes that weigh the same.





Debrief (8 min)

- What happened when you took the clay ball
- apart, made it into two balls, and weighed them together on the balance?
- What do you think would happen if you took that same clay ball apart and made it into 10 little balls and put them all on the balance? A hundred little balls?
- Can one thing have the same weight as 10 things? (If you have materials to demonstrate this, all the better. One option is base ten Dienes blocks. In a high-quality set, the thousands cube has the same weight as ten of the hundreds flats.)