

DAY 4: Using the Elastic Percent Ruler with Numbers

Materials

Copies: 4.1 Using The Elastic Percent Ruler
4.2 Name the Bigger Number (page 1 for students; page 2 teacher copy)
Ticket Out the Door Day 4

Supplies: Rulers (1 per student)
Meter Sticks (1 per pair)
Elastic Percent Rulers (EPRs) made on Day 3

Objective

Students will use the Elastic Percent Rulers to draw models of scenarios involving finding the percent, the part or the whole.

Student Talk Strategy

Numbered Heads for 4.1

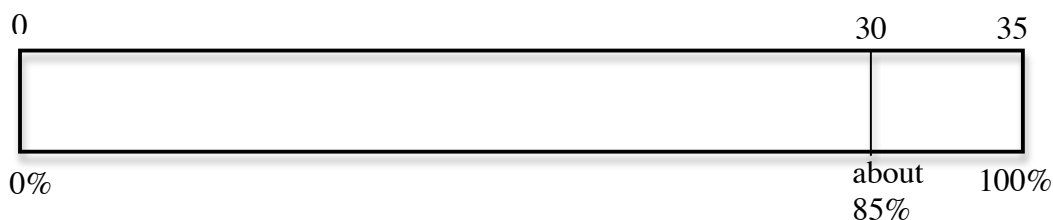
Academic Language Use

Percent- “out of 100”. In this unit, percent will be understood as the number of boxes colored out of 100. Percent will be understood as an “elastic” number, meaning that the actual amount of a percent changes depending upon what the whole is.

Activity Notes

5 minutes: Model Problem #1

Pass out activity sheet 4.1, a ruler and meter stick to each pair and have students take out the EPRs from Day 3. Put the students into pairs for this activity. Direct the students’ attention to problem #1. Let them know that today they will use their EPR and the numbers on a ruler or meter stick to approximate answers. They **MUST** use their elastic and **DRAW** a picture for each problem. For problem #1, ask the class what number is 100%. Have them chorale the response of 35. Ask them which measuring tool, the ruler or meter stick, would allow them to expand their elastic so that 100% is on 35 (they should reply with using centimeters on the meter stick). Have the students work with their partner to model the problem with their elastic. They should align 0% with 0 on the meter stick and then 100% with 35 on the meter stick. Ask them what they are looking for, 30. Ask them approximately what percent that is. Then draw a picture to model the situation. See below for a sample. Note: each picture needs to have a line with numbers and a line with percents. You can also choose to show what 50% would be.



20 minutes: Students work on problems 2-10

In pairs, set the timer for 20 minutes and have students complete problems 2-10. Make sure they use the elastic and then record a picture, as in the example above. Remind them that they are not using the units of the ruler/ meter sticks but rather borrowing the numbers from it. While they work, circulate to assess their work and question them to help guide their thinking. Some questions to ask are, "What is the total?" "Where do you need to hold the elastic?" "What are you looking for?" "Which set of numbers will help you solve this problem?"

5 minutes: Groups discussions to prepare for Numbered Heads

Join together two pairs so that the class is in groups of 4. Give each group 5 minutes to share and discuss their answers, letting them know you will use numbered heads to have students come share their work.

10 minutes: Numbered Heads to Check Work

Number off each group and have the students in each number off from 1-4. Go through each problem by selecting a person number (1-4) and then a group number and having that person come show their work and explain how they solved that problem. Ask the class if they agree with the answer and if they had other methods (if so, have those students share their thinking). Reward each volunteer with a Gotcha ticket. Continue this to discuss the remaining problems.

15 minutes: Name the Bigger Number

Pass out activity sheet 4.2. Give the students 1 minute to read the directions and then question the class to make sure they understood the directions. Ask them, "how many problems will I show you?" "What should you do when you decide which number will be bigger?" "How will you test this?" Then go through 1 example as a class. Show the example from page 2 of activity sheet 4.2. Set the timer for 60 seconds and then call out "Vote". Have each student show you their answer: 1 finger up for scenario #1 and 2 fingers for scenario #2. Then give the students 1 minute to use the EPR and the meter stick or ruler to test it out. Use random selection to have a student explain which scenario yielded a larger number and why. Have the students draw the scenarios in a picture with the numbers on 1 row and the percent on the other. Continue this as long as you have time.

5 minutes: Ticket out the Door

Pass out the Ticket out the Door and have the students raise their hands when finished (so that you can check it and then dismiss them).