Lesson: Introduction to the Real Number Line

Student Notes

Goals:

- Draw base-ten block representations of decimal numbers
- Define "." as the mathematical symbol used in the United States to denote the decimal point
- Relate fractional representations of numbers to their decimal representation.

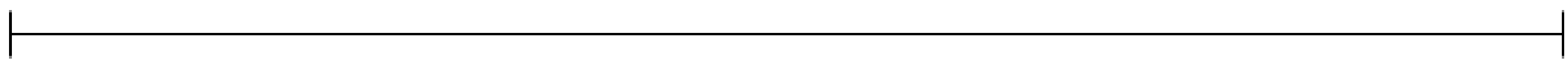
Prerequisite Knowledge

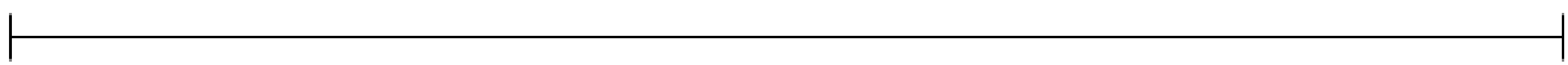
- How to divide a whole into equal size pieces

Activities

1. If you have your fraction strips from previous classes, pull them out. If not, then create new fraction strips for the following fractions: $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{3}, \frac{1}{6}, \frac{1}{5}, \frac{1}{10}$.

2. Take each fraction, in the order that they were listed in problem 1, and align your fraction strip to each line below (one at a time). Make a tick mark on the line for each of the fold lines on the fraction strip. Then, label each tick mark with its corresponding fraction representation.





3. Whole Class Discussion:
    a. What is a real number line?

    b. Given any number line, the spacing is equal between tally marks. How does that relate to our fractions?

    c. Which of the number lines relates most with our base-ten decimal system and why?

    d. Which of the base-ten block shapes represents the real number line the best?

4. With a partner, represent the number 3.2 in as many ways as possible with the blocks that we have available. How many different ways can you do this? Be prepared to share your results with the class. Use the space provided below to draw your findings.

5. With a partner, represent the number 3.21 in as many ways as possible with the blocks that we have available. How many different ways can you do this? Be prepared to share your results with the class. Use the space provided below to draw your findings.

Goals:

- Draw base-ten block representations of decimal numbers
- Define "." as the mathematical symbol used in the United States to denote the decimal point
- Relate fractional representations of numbers to their decimal representation.

Prerequisite Knowledge

- How to divide a whole into equal size pieces

Lesson Materials:

- Student Notes for Day 10
- Extra Fraction Strips for students that don't have theirs. Colors do not matter here.
- Base-ten blocks (no need to be organized)

Lesson Breakdown:

Activity	Size of Group	Time in Activity Total Time: 55 minutes
Creating fraction strips	Individually	15 minutes (if extra time – discuss homework or previous day)
Creating Real Number Lines	Individually	10 minutes
Discussion of Real Number Lines	Whole Class Discussion	10 minutes
Using base-ten blocks to represent 3.2	Partners first, then whole class discussion	10 minutes
Using base-ten blocks represent 3.21	Partners first, then whole class discussion	10 minutes

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Activities

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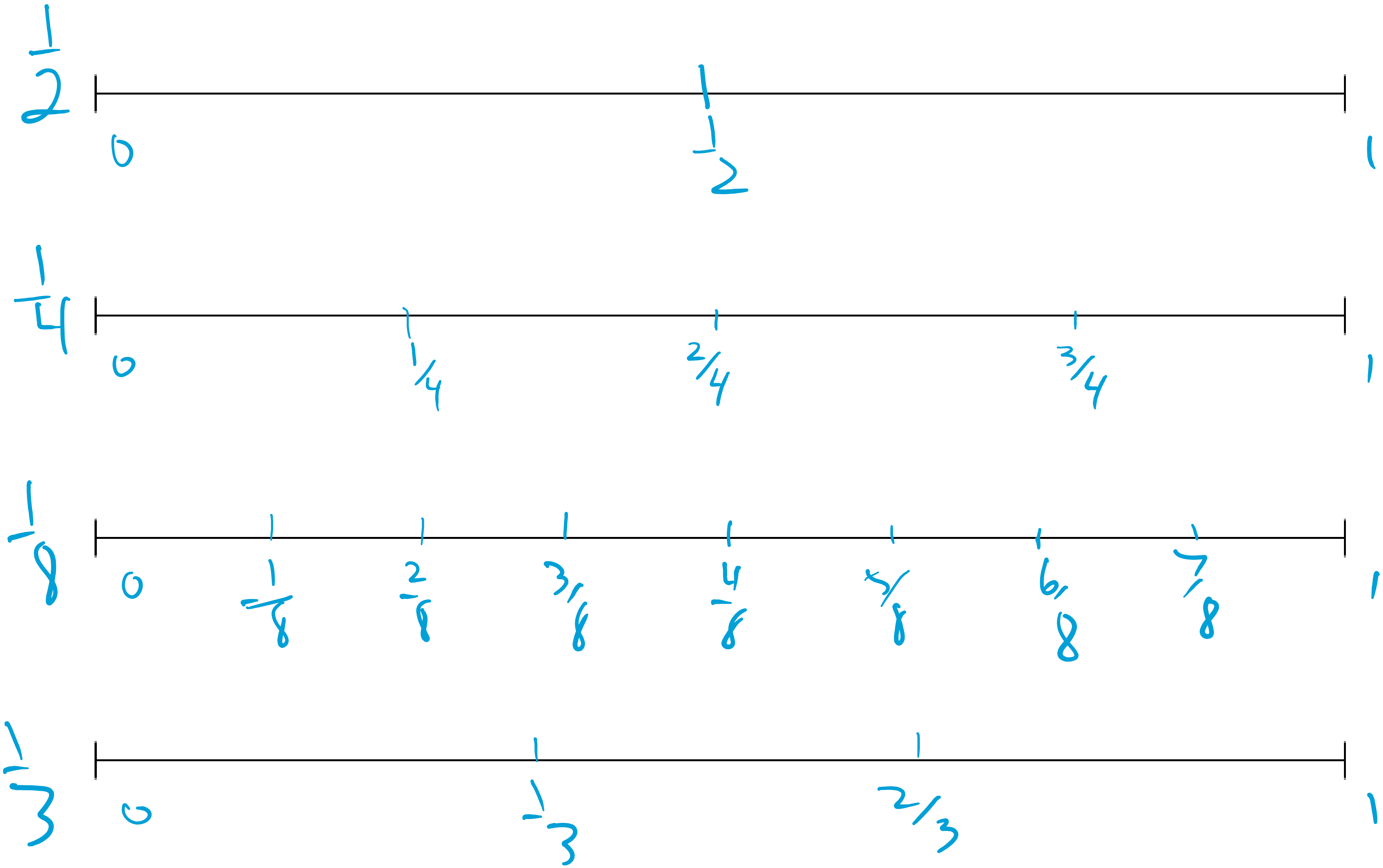

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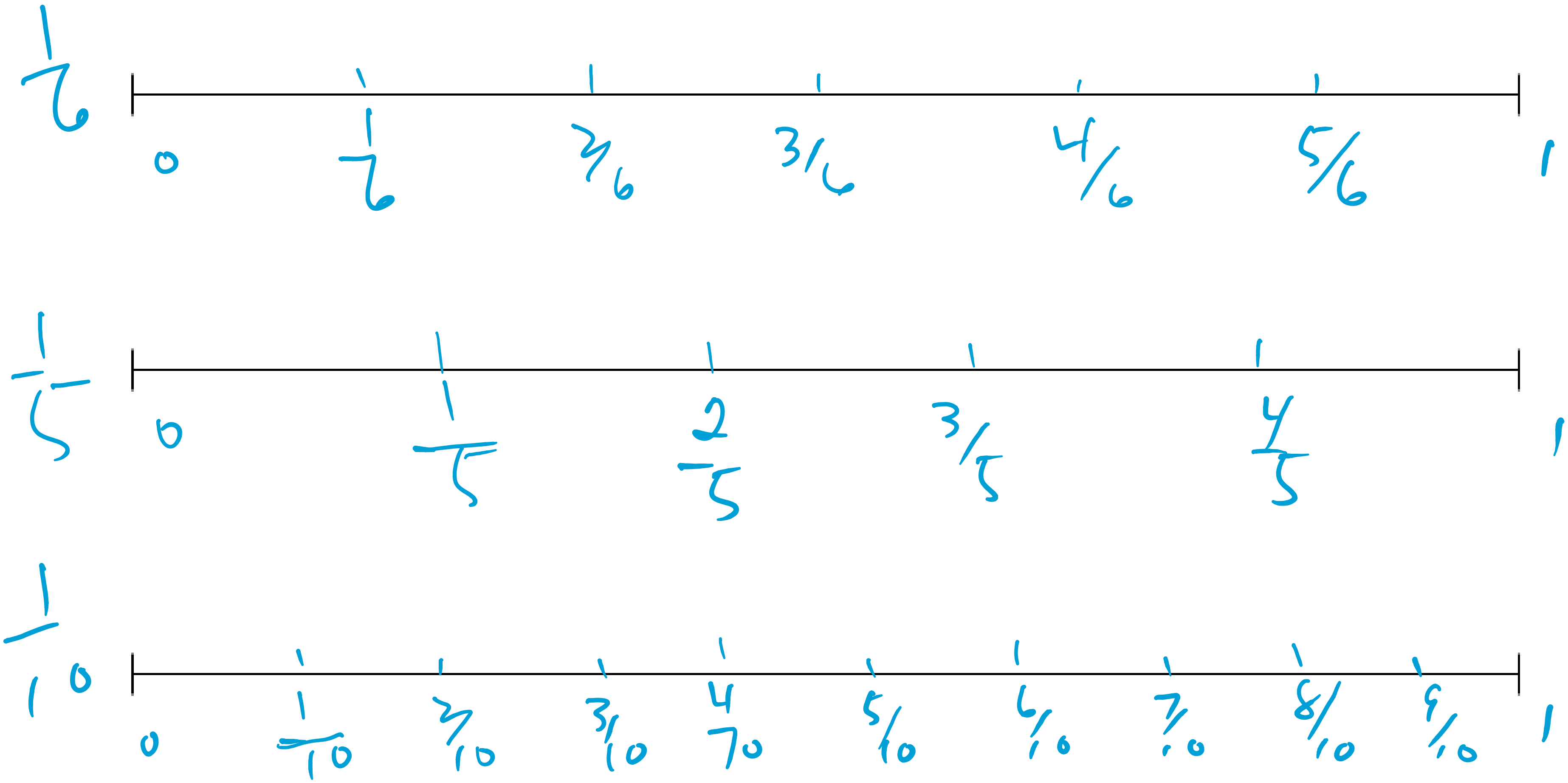
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3. Whole Class Discussion:
   a. What is a real number line?

a line on which real numbers can be plotted and compared, by location, to other real numbers.

   b. Given any number line, the spacing is equal between tally marks. How does that relate to our fractions?

In a drawing of a fraction the whole must be cut into equal size pieces.

   c. Which of the number lines relates most with our base-ten decimal system and why?

The number line cut into 10 equal spaces relates to our base 10 system. Both are built on a system of 10's.

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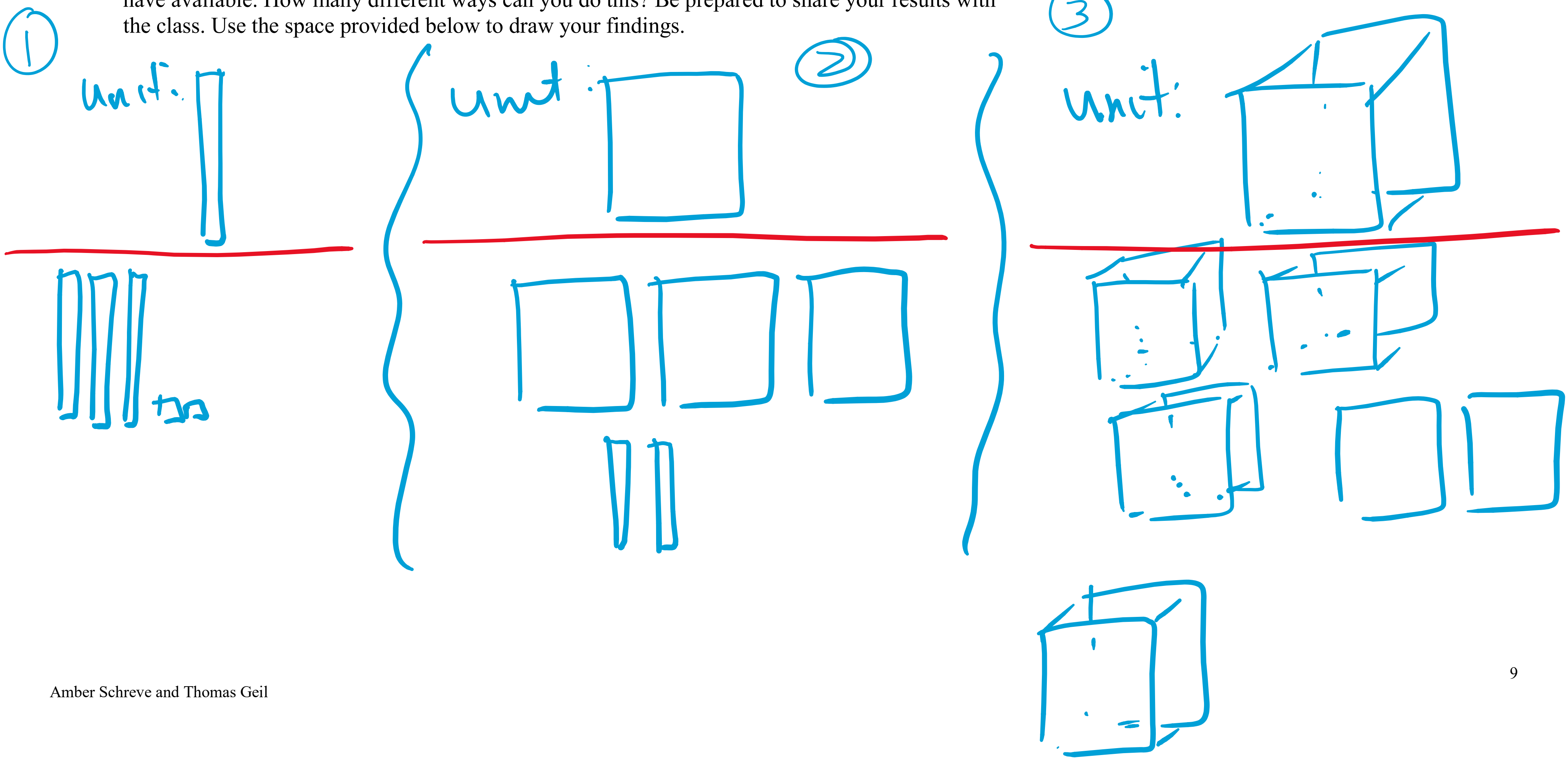
d. Which of the base-ten block shapes represents the real number line the best?

the rod

4. With a partner, represent the number 3.2 in as many ways as possible with the blocks that we have available. How many different ways can you do this? Be prepared to share your results with the class. Use the space provided below to draw your findings.



5. With a partner, represent the number 3.21 in as many ways as possible with the blocks that we have available. How many different ways can you do this? Be prepared to share your results with the class. Use the space provided below to draw your findings.