Name _____

Solve

Math Practices and Problem Solving

Lesson 12-6

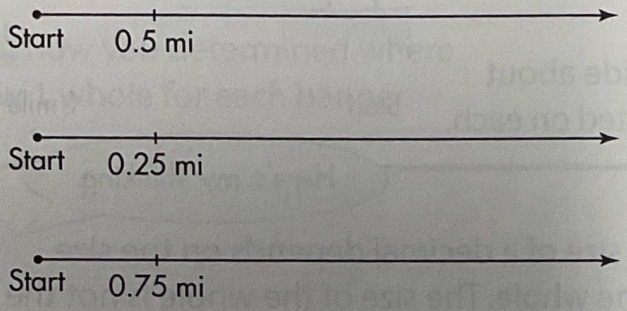
Look For and Use Structure

I can ...
use the structure of the place-value system to solve problems.

Mathematical Practices MP.7 Also MP.1, MP.2, MP.3, MP.4, MP.6
Content Standards 4.NF.C.7, 4.MD.A.2

Solve & Share

Three people hiked the same 1-mile trail. The distance for each hiker is represented in the drawings. Show about where the 1-mile mark should be on each drawing. Explain.



Thinking Habits

Be a good thinker!
These questions can help you.

- What patterns can I see and describe?
- How can I use the patterns to solve the problem?
- Can I see expressions and objects in different ways?

Look Back! **MP.7 Look For Relationships** The three drawings represent 0.5, 0.25, and 0.75 mile with equivalent lengths. How does this affect where 1-mile is located on each drawing?

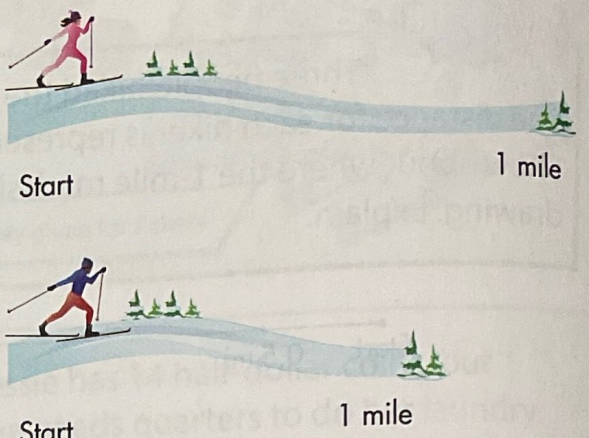
Learn Glossary

Essential Question

How Can You Look for and Make Use of Structure to Solve Problems?

A

Maps from two different ski resorts show a 1-mile cross-country ski trail for beginners. Show about where to mark 0.25, 0.5, and 0.75 mile on each trail.



How can you determine where to mark the points on each drawing?

I need to analyze each drawing and decide about where the given decimals should be located on each.

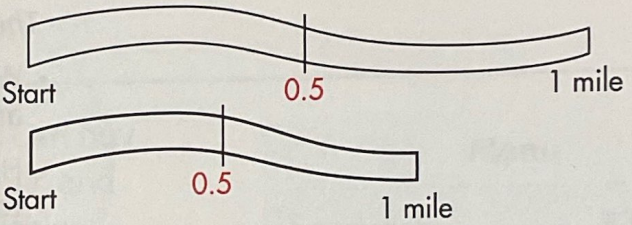
Here's my thinking.

B **How can I make use of structure to solve this problem?**

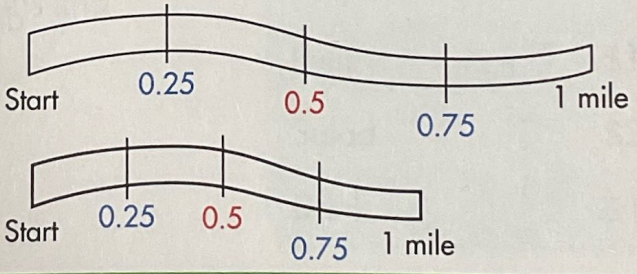
I can

- break the problem into simpler parts.
- use what I know about decimal meanings to locate the points.
- use equivalent forms of numbers.

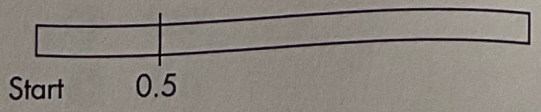
C The size of a decimal depends on the size of the whole. The size of the whole is not the same for each drawing. Divide each whole in half to show **0.5** on each whole.



Divide each half into two equal parts to show **0.25** and **0.75** on each whole.



Convince Me! **© MP.7 Use Structure** Use the drawing of the trail shown. Where is the 1.5-mile mark on the trail? How did you decide?



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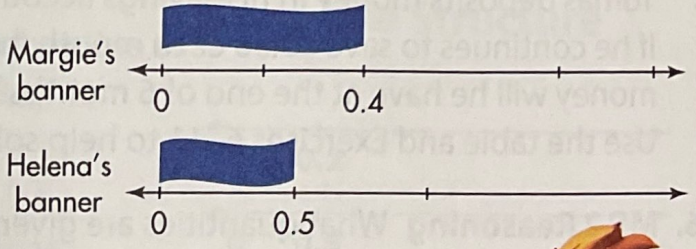
Name _____

Practice Buddy | Tools | Assessment

Guided Practice*

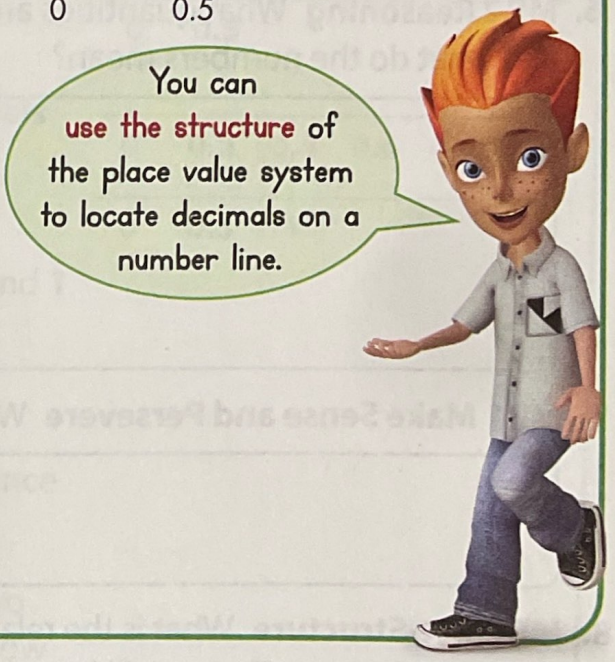
MP.7 Use Structure

Margie painted 0.4 of her banner blue.
Helena painted 0.5 of her banner blue.



1. Complete the drawings to show the whole, or 1, for each banner.

2. Explain how you determined where to draw 1 whole for each banner.

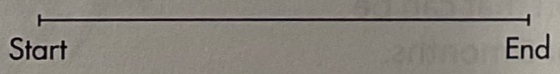


3. Do the drawings show $0.4 < 0.5$? Explain.

Independent Practice

MP.7 Use Structure

Kaitlin is making a map for a 1-mile scavenger hunt. She wants the stops to be 0.5 mile, 0.3 mile, and 0.85 mile from the start.



4. Label 0.25, 0.5, 0.75 on the number line as a scale reference. Explain how you decided where to mark the number line.

5. Estimate where 0.3 and 0.85 are located compared to the other points. Mark the points 0.3 and 0.85. Explain how you estimated.

*For another example, see Set F on page 666.

Math Practices and Problem Solving

Common Core Performance Assessment

Watching Savings Grow

Tomas deposits money in his savings account every month. If he continues to save $3.50 each month, how much money will he have at the end of 6 months? 12 months? Use the table and Exercises 6–11 to help solve.

Month	Money in Savings Account
0	$10.00
1	$13.50
2	$17.00
3	$20.50

6. **MP.2 Reasoning** What quantities are given in the problem and what do the numbers mean?

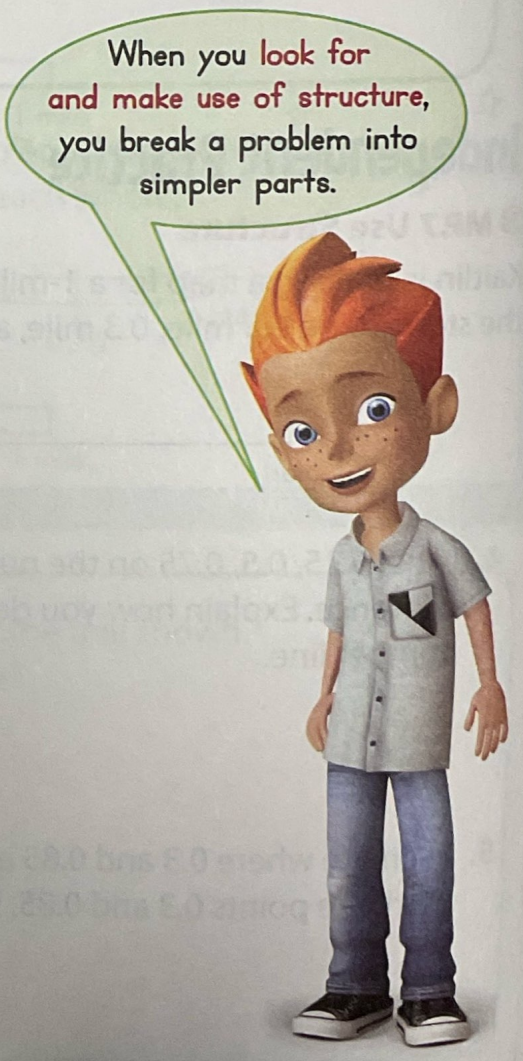
7. **MP.1 Make Sense and Persevere** What do you need to find?

8. **MP.7 Use Structure** What is the relationship between the amount of money Tomas will have in his savings account in the fourth month and the amount in the third month?

9. **MP.4 Model with Math** Write an expression that can be used to find the amount saved at the end of 6 months.

10. **MP.4 Model with Math** Complete the table to find how much Tomas will have saved in 6 months.

11. **MP.6 Be Precise** Use the answers from the table to find how much money Tomas will have at the end of 12 months. Show your work.



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