SAMPLER

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3

MATHEMATICS

EPS LEARNING Coach®

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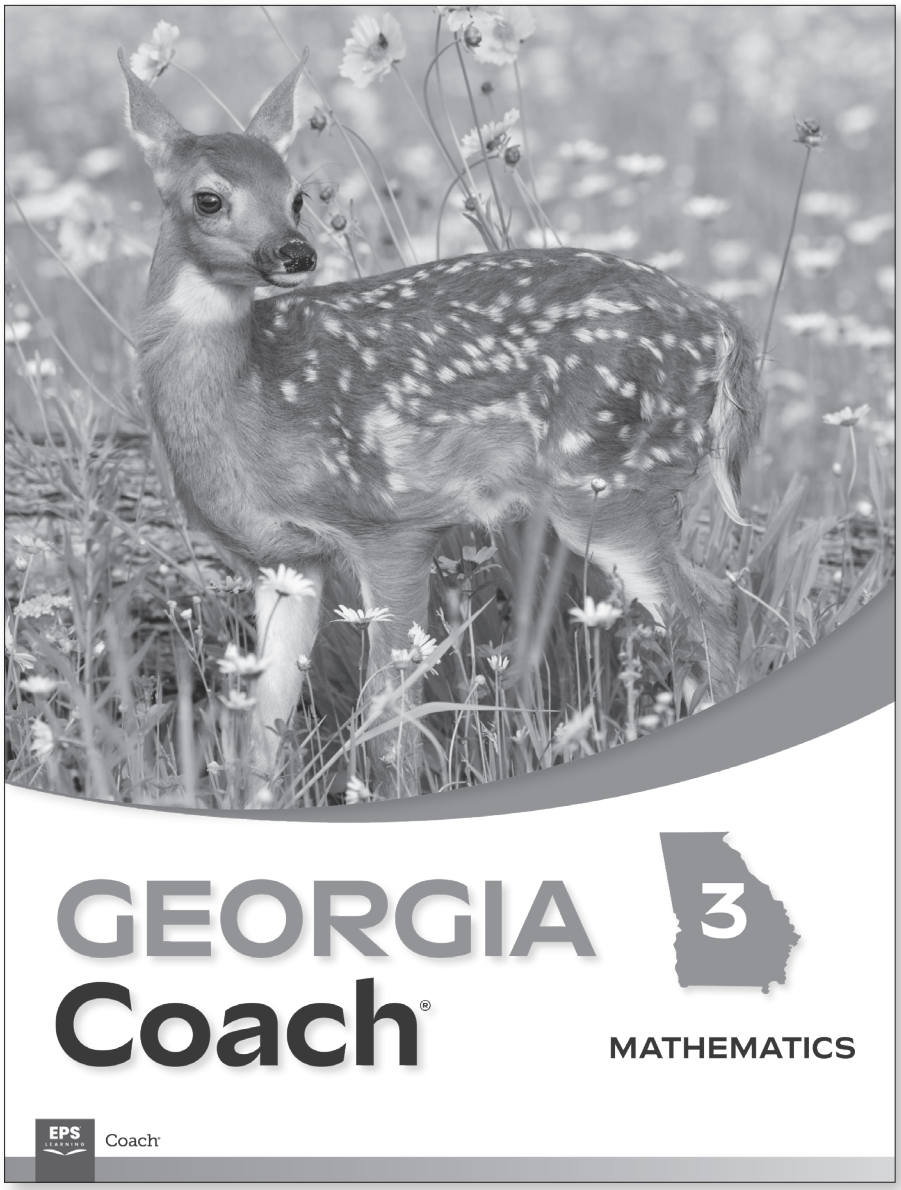


GRADE 3

LESSON 21 SAMPLE

Compare Unit Fractions

Getting the Idea

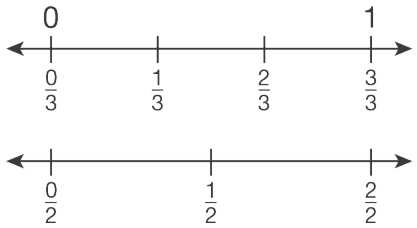
You can use models and number lines to help you compare unit fractions. Unit fractions are fractions with a numerator of 1. Use these symbols when comparing fractions.

$>$ means **is greater than**.

$<$ means **is less than**.

$=$ means **is equal to**.

When you compare, it is important that the wholes are the same size. For example, $\frac{1}{3}$ is less than $\frac{1}{2}$ as is shown on the number lines below.



However, $\frac{1}{3}$ of a watermelon is a greater amount than $\frac{1}{2}$ of an orange, because a watermelon is larger than an orange.

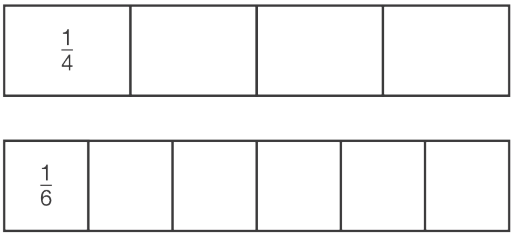
Example 1

Which symbol makes this sentence true? Write $<$, $>$, or $=$.

$\frac{1}{4} \bigcirc \frac{1}{6}$

Strategy **Use fraction strips to compare $\frac{1}{4}$ and $\frac{1}{6}$.**

Step 1 Show $\frac{1}{4}$ and $\frac{1}{6}$ with fraction strips.



Step 2 Compare the fractions.

The wholes are the same size.

$\frac{1}{4}$ has 4 parts. $\frac{1}{6}$ has 6 parts.

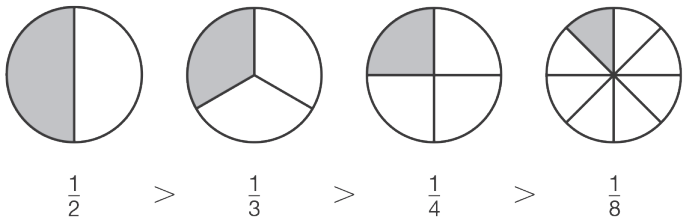
When a whole is divided into 6 parts, the parts are smaller than when a whole is divided into 4 parts.

So, $\frac{1}{4}$ is greater than $\frac{1}{6}$.

Solution $\mathbf{\frac{1}{4} > \frac{1}{6}}$

When you compare unit fractions, the fraction with the smaller denominator is the larger fraction. In Example 1, 4 is smaller than 6, so $\frac{1}{4}$ is greater than $\frac{1}{6}$.

As the number of equal parts (the denominator) increases, the size of each part decreases.



Example 2

Which symbol makes this sentence true? Write $>$, $<$, or $=$.

$\frac{1}{3} \bigcirc \frac{1}{8}$

Strategy **Compare the denominators.**

Step 1 The numerators are the same.

Step 2 Compare the denominators.

$3 < 8$

The lesser denominator is the greater fraction.

$\frac{1}{3}$ is the greater fraction.

Step 3 Choose the correct symbol.

$>$ means is greater than.

Solution $\frac{1}{3} \textcircled{>} \frac{1}{8}$

Example 3

Ted read $\frac{1}{4}$ of his book. Lisa read $\frac{1}{3}$ of the same book. Who read the greater amount of the book?

Strategy **Compare the denominators.**

Step 1 Both of the numerators are 1.

Step 2 Compare the denominators.

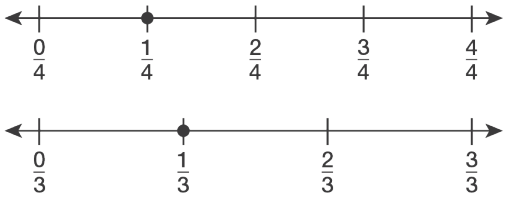
$4 > 3$

The fraction with the lesser denominator is the greater fraction.

$\frac{1}{3} > \frac{1}{4}$

Solution **Lisa read more of the book.**

Here are the fractions from Example 3 on number lines.



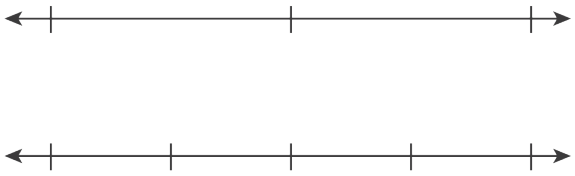
The fraction farther to the right is the greater fraction.

The fraction farther to the left is the lesser fraction.

Coached Example

Callie drew a circle. Callie shaded $\frac{1}{2}$ of the circle. Will shaded $\frac{1}{4}$ of the circle. Who shaded more of the circle?

Draw number lines divided into halves and fourths.
Draw points at $\frac{1}{2}$ and $\frac{1}{4}$ on the number lines.



Compare the fractions.

The fraction farther to the right is the _____ fraction.

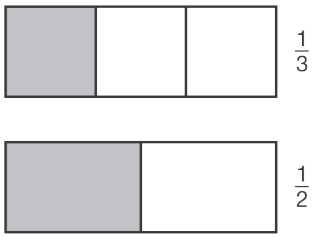
So, _____ > _____.

_____ **shaded more of the circle than** _____**.**

Lesson Practice • Part 1

Choose the correct answer.

1. Look at the two fractions below.



Which sentence is true?

○ **A.** $\frac{1}{3} = \frac{1}{2}$

○ **B.** $\frac{1}{3} > \frac{1}{2}$

○ **C.** $\frac{1}{2} < \frac{1}{3}$

○ **D.** $\frac{1}{2} > \frac{1}{3}$

2. Which symbol belongs in the ◯ to make the sentence true?

$\frac{1}{5} \bigcirc \frac{1}{6}$

○ **A.** $>$

○ **B.** $<$

○ **C.** $=$

○ **D.** $+$

3. Which is the least fraction?

○ **A.** $\frac{1}{8}$

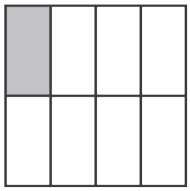
○ **B.** $\frac{1}{2}$

○ **C.** $\frac{1}{5}$

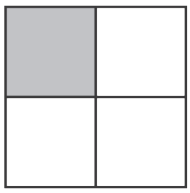
○ **D.** $\frac{1}{3}$

4. Which is the greatest fraction?

○ **A.**



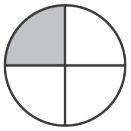
○ **B.**



○ **C.**

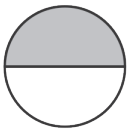
○ **D.**

5. The circle below is $\frac{1}{4}$ shaded.

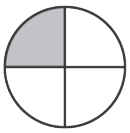


Which circle has less than $\frac{1}{4}$ shaded?

○ **A.**



○ **B.**

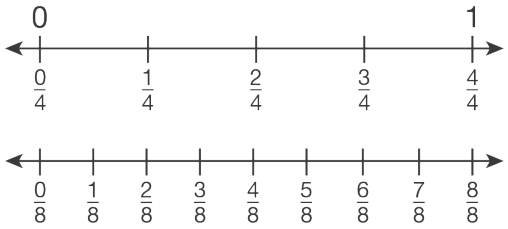


○ **C.**

○ **D.**

6. Which symbol belongs in the ◯ to make the sentence true?

$\frac{1}{4}$ ◯ $\frac{1}{8}$



○ **A.** $>$

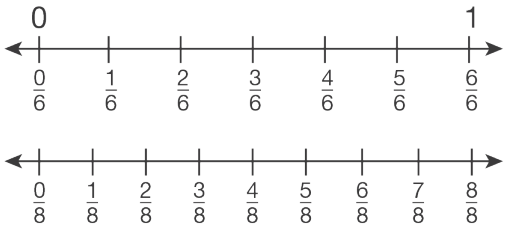
○ **B.** $<$

○ **C.** $=$

○ **D.** $+$

7. Brenda has read $\frac{1}{6}$ of a book. Sylvia has read $\frac{1}{8}$ of the same book.

A. Circle $\frac{1}{6}$ and $\frac{1}{8}$ on the number lines below.



B. Who has read more of the book? Explain your answer.

Lesson Practice • Part 2

Choose the correct answer.

1. Which fraction is less than $\frac{1}{4}$?

- ○ **A.** $\frac{1}{3}$
- ○ **B.** $\frac{1}{2}$
- ○ **C.** $\frac{2}{4}$
- ○ **D.** $\frac{1}{6}$

2. John watched $\frac{1}{2}$ of a movie. Maria watched $\frac{1}{2}$ of a different movie. Which sentence is true?

- ○ **A.** John watched for a longer period of time than Maria.
- ○ **B.** Maria watched for a longer period of time than John.
- ○ **C.** They watched for the same amount of time.
- ○ **D.** There is not enough information to know who watched longer.

3. Which sentence is true?

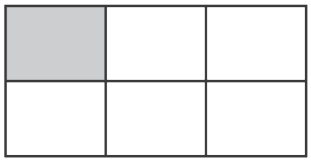
- ○ **A.** $\frac{1}{2} > \frac{1}{5}$
- ○ **B.** $\frac{1}{2} = \frac{1}{3}$
- ○ **C.** $\frac{1}{4} > \frac{1}{3}$
- ○ **D.** $\frac{1}{4} < \frac{1}{5}$

4. Which shows a fraction greater than $\frac{1}{3}$?

- ○ **A.**

- ○ **B.**

- ○ **C.**



- ○ **D.**

5. Choose the number that makes this sentence true.

$$\frac{1}{6} > \frac{1}{\square}$$

- ○ **A.** 8
- ○ **B.** 6
- ○ **C.** 4
- ○ **D.** 3

6. Which symbol belongs in the ◯ to make the sentence true?

$\frac{1}{4} \bigcirc \frac{1}{3}$

- ○ **A.** $>$
- ○ **B.** $<$
- ○ **C.** $=$
- ○ **D.** $+$

7. April read $\frac{1}{3}$ of a book. Kan read $\frac{1}{3}$ of the same copy of the book. Which sentence is true?

- ○ **A.** April read a greater number of pages than Kan.
- ○ **B.** Kan read a greater number of pages than April.
- ○ **C.** They read the same number of pages.
- ○ **D.** There is not enough information to know who read more pages.

8. Three friends are saving for vacation. They each want to save an equal amount of money. Ana saved $\frac{1}{3}$, Beth saved $\frac{1}{6}$, and Carla saved $\frac{1}{2}$.

A. Did Ana or Beth save more money? Explain your answer.

_____

_____

B. Did Beth or Carla save more money? Explain your answer.

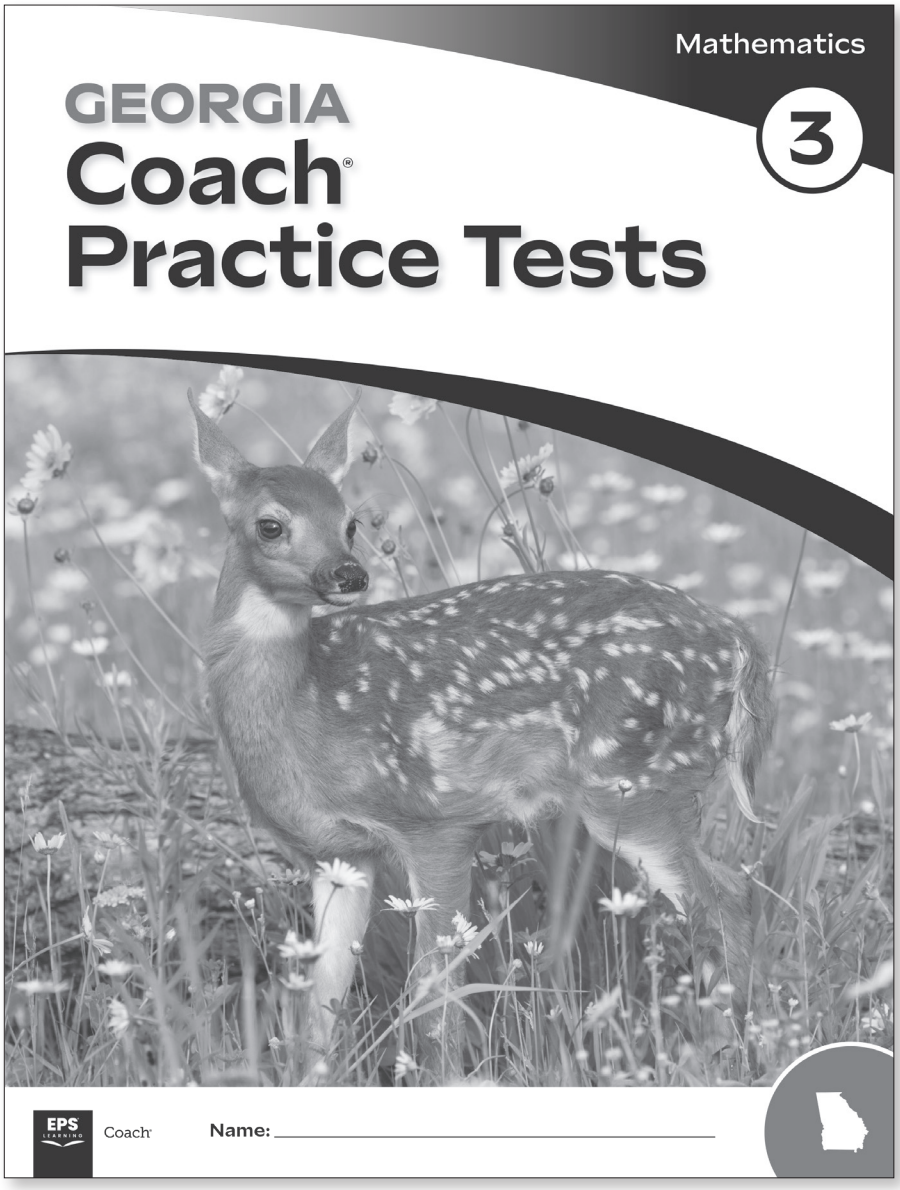
_____

_____

C. Did Ana or Carla save more money? Explain your answer.

_____

_____



GRADE 3

PRACTICE TEST SAMPLES

43. **The picture below shows that $\frac{4}{8}$ of Libby's marbles are white.**

Which fraction is equivalent to the fraction of marbles that are white?

Ⓐ $\frac{2}{4}$

Ⓑ $\frac{4}{1}$

Ⓒ $\frac{4}{2}$

Ⓓ $\frac{4}{4}$

44. **Which expression does NOT have the same value as 132 + 216 + 109?**

Ⓐ 348 + 109

Ⓑ 132 + 325

Ⓒ 109 + 216 + 132

Ⓓ 216 + 231

GO ON

45. **Stanley has 3 bags of marbles. There are 9 marbles in each bag.**

Part A

Create an equation that shows how many marbles Stanley has in all.

Write your answer in the box below.

Part B

How many marbles does Stanley have all together?

Ⓐ 3

Ⓑ 6

Ⓒ 12

Ⓓ 27

46. **A museum has 36 dinosaur bones displayed in 4 cases.**

Each case has the same number of bones in it.

The equation below can be used to find how many dinosaur bones are in each case.

$$36 \div \square = 4$$

How many dinosaur bones are in each case?

Ⓐ 9

Ⓑ 32

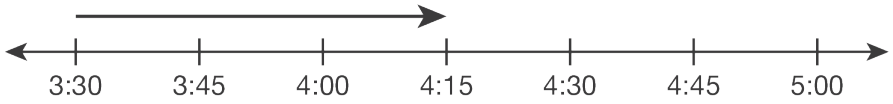
Ⓒ 40

Ⓓ 144

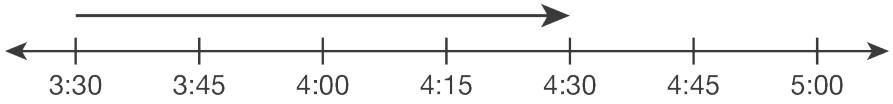
GO ON

47. **Greg starts his homework at 3:30. It takes a half hour to finish his homework. Which number line shows the time he finishes his homework?**

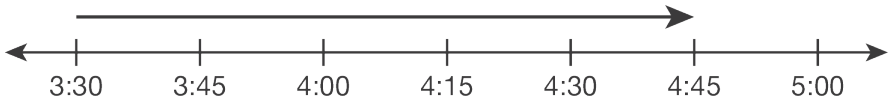
Ⓐ



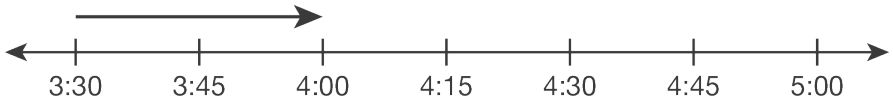
Ⓑ



Ⓒ



Ⓓ



48. **Keegan draws three figures.**

Which name describes ALL of these figures?

Ⓐ rhombus

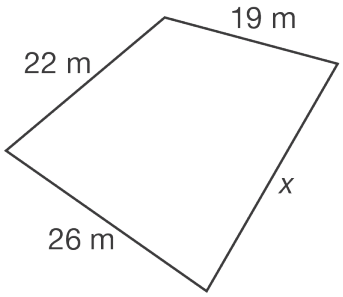
Ⓑ quadrilateral

Ⓒ square

Ⓓ rectangle

GO ON

49. The perimeter of this polygon is 98 meters.



Part A

What is the length of side *x*?

Ⓐ 22 m

Ⓑ 31 m

Ⓒ 45 m

Ⓓ 48 m

Part B

Which statement BEST explains how to solve for the length of side *x*?

Ⓐ Add all the side lengths to get the length of side *x*.

Ⓑ Add the length of the sides adjacent to side *x*.

Ⓒ Start with the perimeter and subtract all the known lengths to get the length of side *x*.

Ⓓ Start with the perimeter and add all the known lengths to get the length of side *x*.

GO ON

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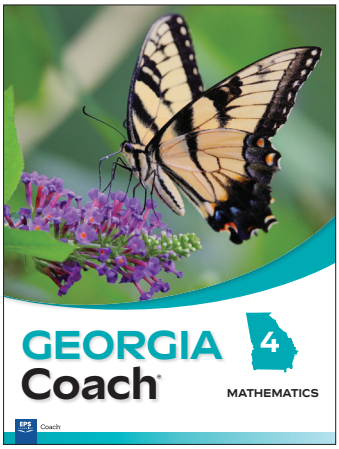
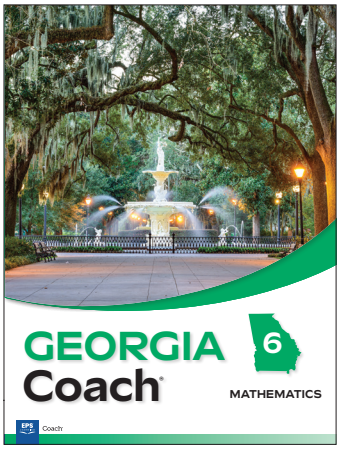
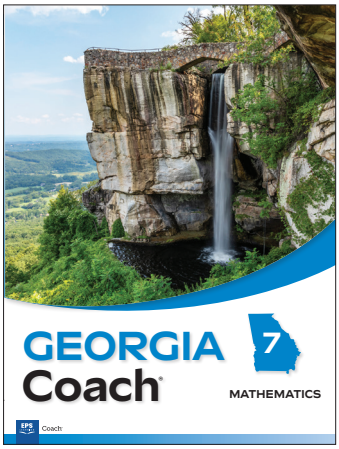
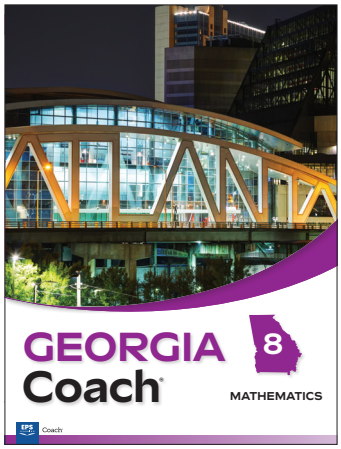
MATHEMATICS

GRADES 3–8









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