Chapter 9 Test

Summative Assessment

Use the **Chapter Test** to assess students' progress in Chapter 9.

Chapter Tests are presented in Common Core assessment formats in the *Chapter Resources*.

Personal Math Trainer

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1. Frank and Dwayne weed their gardens that are the same size. Frank's garden is divided into 6 equal sections. Dwayne's garden is divided into 4 equal sections. Each boy has weeded 2 sections of his garden.

   Write a fraction to describe what part of his garden each boy has weeded. Then tell who weeded a larger area. Explain.

   Frank: $\frac{2}{6}$; Dwayne: $\frac{2}{4}$; Dwayne: $\frac{2}{4} > \frac{2}{6}$. Possible explanation: the denominators are different. The garden with the greater number of sections will have a smaller area per section.

2. Eli, Beth, and Cory are reading the same book for class. Eli read $\frac{3}{4}$ of his book. Beth read $\frac{3}{8}$ of her book and Cory read $\frac{3}{6}$ of his book.

   For 2a–2d, choose Yes or No to indicate whether the comparisons are correct.

   2a. $\frac{3}{4} > \frac{3}{8}$ ● Yes ○ No

   2b. $\frac{3}{6} < \frac{3}{8}$ ○ Yes ● No

   2c. $\frac{3}{8} = \frac{3}{6}$ ○ Yes ● No

   2d. $\frac{3}{6} < \frac{3}{4}$ ● Yes ○ No

3. Mark and Lisa are on the swim team. Mark swims $\frac{3}{8}$ mile each day. Lisa swims $\frac{5}{8}$ mile each day. Which statement is correct? Mark all that apply.

   Ⓐ Mark swims farther than Lisa each day.

   Ⓑ Lisa swims the same distance as Mark each day.

   ● Lisa swims less than 1 mile each day.

   ● Lisa swims farther than Mark each day.

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4. MacKenzie and Cassie used fabric to make costumes for a play. MacKenzie used $\frac{3}{4}$ yard of fabric and Cassie used $\frac{5}{6}$ yard. Who used more fabric? Explain the strategy you used to solve the problem.

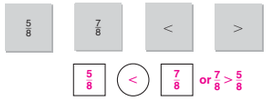
   Cassie; Possible explanation: I used the missing pieces strategy. Cassie's measurement is missing $\frac{1}{6}$ and MacKenzie's measurement is missing $\frac{1}{4}$. $\frac{1}{4} > \frac{1}{6}$, so MacKenzie had the larger missing piece and Cassie used more fabric.

5. The soccer team practices passing for $\frac{3}{4}$ hour and shooting for $\frac{4}{5}$ hour. On which drill does the team spend less time? Explain how you can use the model to find the answer.

   Passing; the model for $\frac{3}{4}$ is shorter than the model for $\frac{4}{5}$.

6. Andrew bought $\frac{7}{8}$ pound of mixed nuts. Margaret bought $\frac{5}{8}$ pound of mixed nuts.

   Use the fractions and symbols to show which amount is greater.



   $\frac{5}{8} < \frac{7}{8}$ or $\frac{7}{8} > \frac{5}{8}$

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Data-Driven Decision Making

Based on the results of the Chapter Test use the following resources to review skills.

Item	Lesson	Standards	Content Focus	Personal Math Trainer	Intervene with
1, 2, 10	9.3	3.NF.A.3d	Compare fractions with the same numerator.	3.NF.A.3d	R—9.3
3, 6, 11	9.2	3.NF.A.3d	Compare fractions with the same denominator.	3.NF.A.3d	R—9.2
4, 12, 13, 15, 19	9.4	3.NF.A.3d	Compare fractions.	3.NF.A.3d	R—9.4
5, 9	9.1	3.NF.A.3d	Compare fractions to solve problems.	3.NF.A.3d	R—9.1
7, 18, 20	9.6	3.NF.A.3a	Use models to find equivalent fractions.	3.NF.A.3a	R—9.6
8, 14	9.7	3.NF.A.3b	Name equivalent fractions.	3.NF.A.3b	R—9.7
16, 17	9.5	3.NF.A.3d	Compare and order fractions.	3.NF.A.3d	R—9.5

Key: R—Reteach (in the *Chapter Resources*)

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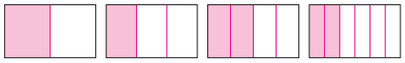
7. Mr. Worth opened new jars of 4 different colors of paint for an art project. All of the jars were the same size.



Part A

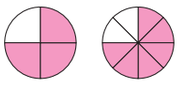
Draw lines to show how Mr. Worth could divide one jar of paint into halves, one into thirds, one into fourths, and one into sixths. **Possible lines are shown.**

Part B

Students in his class used an equivalent amount of two paint colors. Use the models to show the amount of paints used. Write two pairs of equivalent fractions to represent the models. **Possible shading is shown above.**

Possible answers: $\frac{1}{2} = \frac{2}{4}$, $\frac{1}{3} = \frac{2}{6}$

8. Dalton rode his skateboard for $\frac{3}{4}$ mile. Amelia rode her skateboard for an equal distance. What is an equivalent fraction that describes how far Amelia rode? Use the models to show your work.



$\frac{3}{4} = \frac{6}{8}$

9. Mr. Barrows opens 2 packs of paper. He puts $\frac{2}{5}$ of a pack in one pile and $\frac{3}{5}$ of a pack in another pile. Which pile has more paper? Show your work.

The pile with $\frac{3}{5}$ of a pack has more. Check students' work.

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10. Treyvon watched $\frac{2}{8}$ a movie. Juan watched $\frac{2}{6}$ of the same movie. Use >, =, or < to compare the parts that they watched.

$\frac{2}{8} < \frac{2}{6}$ or $\frac{2}{6} > \frac{2}{8}$

11. Alison used $\frac{7}{8}$ quart of orange juice and $\frac{3}{8}$ quart of cranberry juice to make some punch.

For 11a–11d, select True or False for each comparison.

11a.	$\frac{7}{8} < \frac{3}{8}$	○ True	● False
11b.	$\frac{7}{8} > \frac{3}{8}$	● True	○ False
11c.	$\frac{3}{8} < \frac{7}{8}$	● True	○ False
11d.	$\frac{3}{8} = \frac{7}{8}$	○ True	● False

12. Will, Ann, and Jim are working on their science fair projects. Will has finished $\frac{1}{2}$ of his project. Ann has finished $\frac{3}{4}$ of her project, and Jim has finished $\frac{2}{3}$ of his project.

Part A

Who has finished less of their project, Will or Ann? Explain how you know.

Will; Possible explanation: $\frac{1}{4}$ and $\frac{3}{4}$ have the same denominator, so I can compare numerators. 1 is less than 3, so $\frac{1}{4}$ is less than $\frac{3}{4}$.

Part B

Who has finished less of their project, Ann or Jim? Explain how you know.

Jim; Possible explanation: I can use the missing pieces strategy to compare the fractions. $\frac{2}{3}$ will have a larger missing piece than $\frac{3}{4}$, so $\frac{2}{3}$ is less than $\frac{3}{4}$

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13. Sarah needs $\frac{4}{6}$ yard of ribbon to wrap a gift. She has 6 pieces of ribbon with the following lengths. She can cut the piece if it is too long. Mark all of the pieces of ribbon that Sarah could use.

- (A) $\frac{1}{2}$ yard
- ● $\frac{4}{4}$ yard
- ● $\frac{6}{6}$ yard
- (E) $\frac{1}{3}$ yard
- (C) $\frac{3}{8}$ yard
- ● $\frac{5}{6}$ yard

14. There are 8 people having breakfast. Each person wants $\frac{1}{2}$ of an omelet. How many whole omelets are needed? Use the models to show your answer.

Check students' drawings. Drawings should show 4 omelets divided into halves. **4** omelets

15. Michele mixed $\frac{3}{4}$ cup of flour with $\frac{1}{2}$ cup of water to make paste for an art project. Compare the fractions. Choose the symbol that makes the statement true.

$\frac{3}{4}$ [< / = / (>)] $\frac{1}{2}$

16. Jeff has three boxes that weigh $\frac{5}{8}$, $\frac{1}{8}$, and $\frac{3}{8}$ pound. Write the weights in order from least to greatest.

$\frac{1}{8}$, $\frac{3}{8}$, $\frac{5}{8}$

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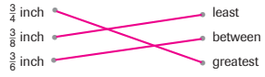
17. Ben measures the lengths of three insects. Draw a line to match each length on the left to the word on the right that describes its place in the order of lengths.



18. Kerri drew a model to show equivalent fractions.

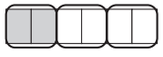
Use the model to complete the number sentence.

$\frac{2}{3} = \frac{4}{6}$

19. Elaine brought $\frac{3}{4}$ pound of potato salad to a picnic. Jake brought $\frac{2}{3}$ pound of macaroni salad. Who brought more salad? Explain the strategy you used to solve the problem.

Elaine; Possible explanation: I think about the missing piece from $\frac{2}{3}$ which is $\frac{1}{3}$, and the missing piece from $\frac{3}{4}$ which is $\frac{1}{4}$. $\frac{1}{4} < \frac{1}{3}$, and the fraction with the smaller missing piece is larger.

20. It took Mike $\frac{2}{6}$ hour to clean his room.



What fraction is equivalent to $\frac{2}{6}$?

$\frac{1}{3} = \frac{2}{6}$

STOP

Portfolio Suggestions

The portfolio represents the growth, talents, achievements, and reflections of the mathematics learner. Students might spend a short time selecting work samples for their portfolios.

You may want to have students respond to the following questions:

- What new understanding of math have I developed in the past several weeks?
- What growth in understanding or skills can I see in my work?
- What can I do to improve my understanding of math ideas?
- What would I like to learn more about?

For information about how to organize, share, and evaluate portfolios, see the *Chapter Resources*.