

Name \_\_\_\_\_

# Add and Subtract Parts of a Whole

**Essential Question** When can you add or subtract parts of a whole?



Numbers and Operations—  
Fractions—4.NF.B.3a

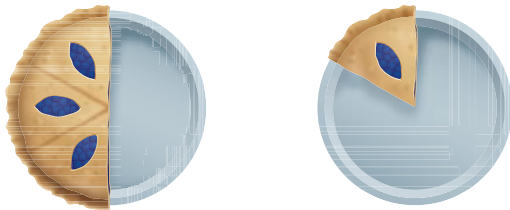
**MATHEMATICAL PRACTICES**  
MP4, MP5



## Investigate

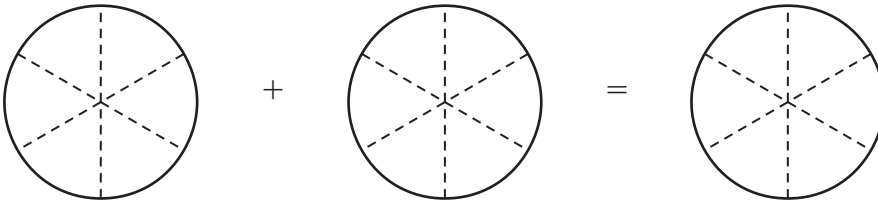
**Materials** ■ fraction circles ■ color pencils

Ms. Clark has the following pie pieces left over from a bake sale.



She will combine the pieces so they are on the same dish.  
How much pie will be on the dish?

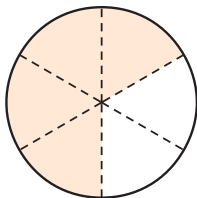
**A.** Model the problem using fraction circles. Draw a picture of your model. Then write the sum.



\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

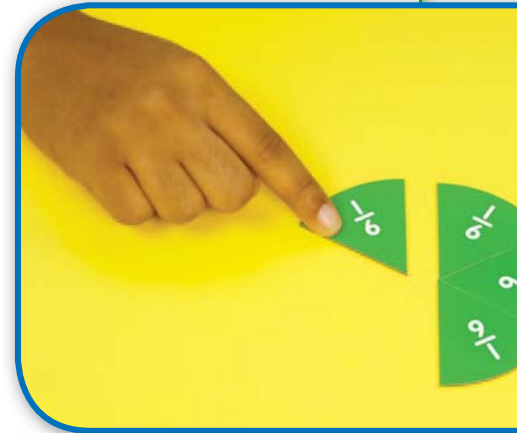
So, \_\_\_\_\_ of a pie is on the dish.

**B.** Suppose Ms. Clark eats 2 pieces of the pie. How much pie will be left on the dish? Model the problem using fraction circles. Draw a picture of your model. Then write the difference.



\_\_\_\_\_ - \_\_\_\_\_ = \_\_\_\_\_

So, \_\_\_\_\_ of the pie is left on the dish.



## Draw Conclusions

1. Kevin says that when you combine 3 pieces of pie and 1 piece of pie, you have 4 pieces of pie. Explain how Kevin's statement is related to the equation  $\frac{3}{6} + \frac{1}{6} = \frac{4}{6}$ .

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2. Isabel wrote the equation  $\frac{1}{2} + \frac{1}{6} = \frac{4}{6}$  and Jonah wrote  $\frac{3}{6} + \frac{1}{6} = \frac{4}{6}$  to represent combining the pie pieces. Explain why both equations are correct.

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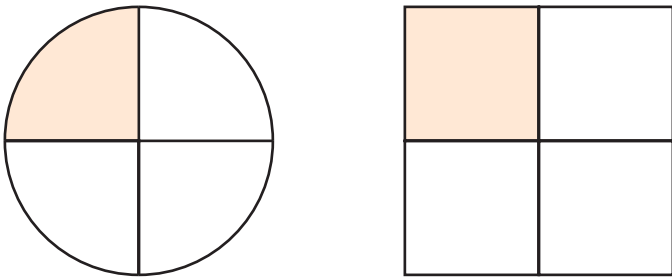
3. **THINK SMARTER** If there is  $\frac{4}{6}$  of a pie on a plate, what part of the pie is missing from the plate? Write an equation to justify your answer.

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## Make Connections

You can only join or separate parts that refer to the same whole.

Suppose Randy has  $\frac{1}{4}$  of a round cake and  $\frac{1}{4}$  of a square cake.



**Math Talk**

### MATHEMATICAL PRACTICES 4

**Interpret a Result** Give an example of a situation where the equation  $\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$  makes sense. Explain your reasoning.

- a. Are the wholes the same? Explain.

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- b. Does the sum  $\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$  make sense in this situation? Explain.

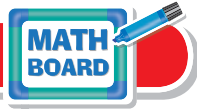
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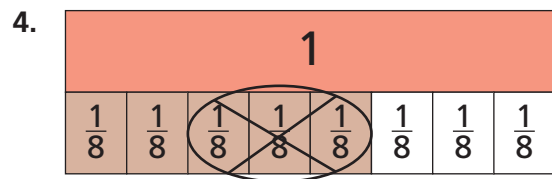
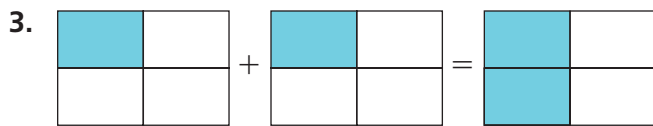
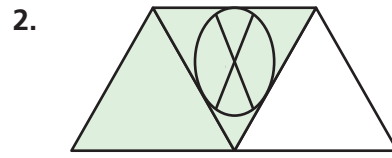
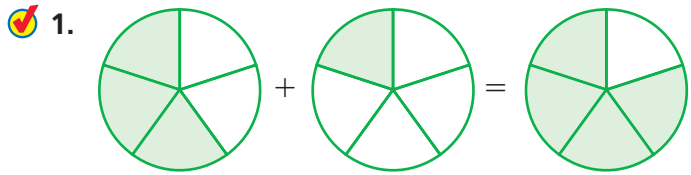
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Name \_\_\_\_\_

# Share and Show

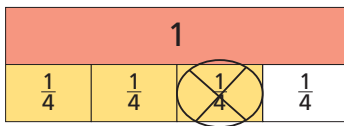


Use the model to write an equation.



Use the model to solve the equation.

5.  $\frac{3}{4} - \frac{1}{4} =$  \_\_\_\_\_



6.  $\frac{5}{6} + \frac{1}{6} =$  \_\_\_\_\_



## Problem Solving • Applications

7. **MATHEMATICAL PRACTICE 2 Reason Abstractly** Sean has  $\frac{1}{5}$  of a cupcake and  $\frac{1}{5}$  of a large cake.

a. Are the wholes the same? Explain.

\_\_\_\_\_

b. Does the sum  $\frac{1}{5} + \frac{1}{5} = \frac{2}{5}$  make sense in this situation? Explain.

\_\_\_\_\_

8. **GO DEEPER** Carrie's dance class learned  $\frac{1}{5}$  of a new dance on Monday, and  $\frac{2}{5}$  of the dance on Tuesday. What fraction of the dance is left for the class to learn on Wednesday?

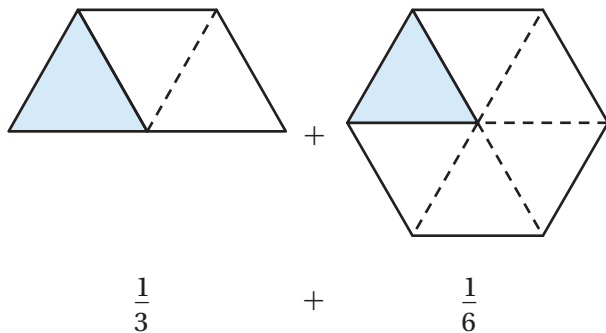
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## Sense or Nonsense?

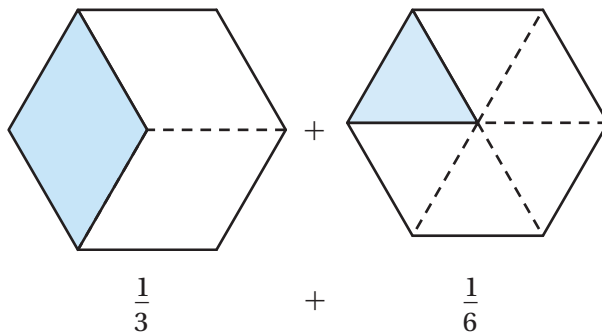


9. **THINK SMARTER** Samantha and Kim used different models to help find  $\frac{1}{3} + \frac{1}{6}$ . Whose model makes sense? Whose model is nonsense? Explain your reasoning below each model.

Samantha's Model



Kim's Model

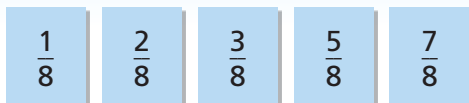
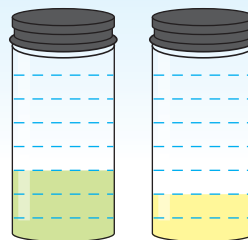


10. **GO DEEPER** Draw a model you could use to add  $\frac{1}{4} + \frac{1}{2}$ .

## Personal Math Trainer

11. **THINK SMARTER +** Cindy has two jars of paint. One jar is  $\frac{3}{8}$  full. The other jar is  $\frac{2}{8}$  full.

Use the fractions to write an equation that shows the amount of paint Cindy has.

 $\frac{3}{8}$  $\frac{2}{8}$ 

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

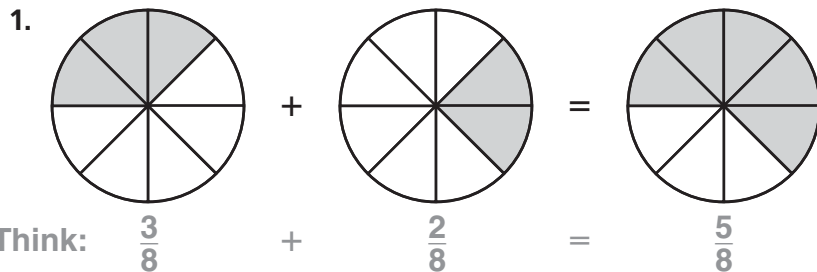
Name \_\_\_\_\_

**Add and Subtract Parts of a Whole**



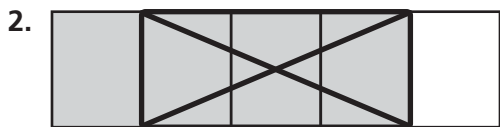
**COMMON CORE STANDARD—4.NF.B.3a**  
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Use the model to write an equation.



Think:  $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

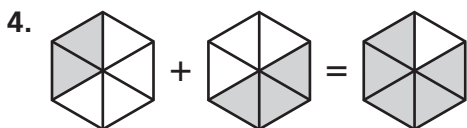


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Use the model to solve the equation.



$\frac{2}{6} + \frac{3}{6} =$  \_\_\_\_\_



$\frac{3}{5} + \frac{2}{5} =$  \_\_\_\_\_

**Problem Solving**



6. Jake ate  $\frac{4}{8}$  of a pizza. Millie ate  $\frac{3}{8}$  of the same pizza. How much of the pizza was eaten by Jake and Millie?

\_\_\_\_\_

7. **WRITE** *Math* Draw a fraction circle to model  $\frac{5}{6} - \frac{1}{6}$  and write the difference.

## Lesson Check (4.NF.B.3a)

1. A whole pie is cut into 8 equal slices. Three of the slices are served. How much of the pie is left?
2. An orange is divided into 6 equal wedges. Jody eats 1 wedge. Then she eats 3 more wedges. How much of the orange did Jody eat?

## Spiral Review (4.OA.C.5, 4.NBT.B.5, 4.NF.A.1, 4.NF.A.2)

3. Put these distances in order from least to greatest:  $\frac{3}{16}$  mile,  $\frac{1}{8}$  mile,  $\frac{3}{4}$  mile
4. Jeremy walked  $\frac{6}{8}$  of the way to school and ran the rest of the way. What fraction, in simplest form, shows the part of the way that Jeremy walked?
5. An elevator starts on the 100th floor of a building. It descends 4 floors every 10 seconds. At what floor will the elevator be 60 seconds after it starts?
6. For a school play, the teacher asked the class to set up chairs in 20 rows with 25 chairs in each row. After setting up all the chairs, they were 5 chairs short. How many chairs did the class set up?

