







Adding Unlike Fractions 1

Cover the page below the black line. Then try to figure out additions below.

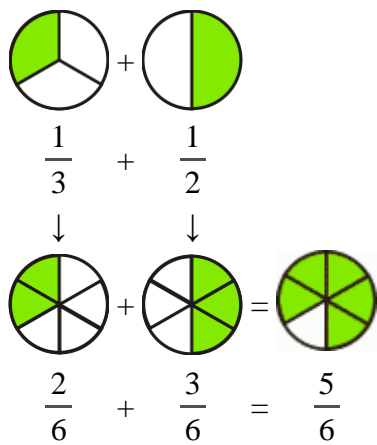
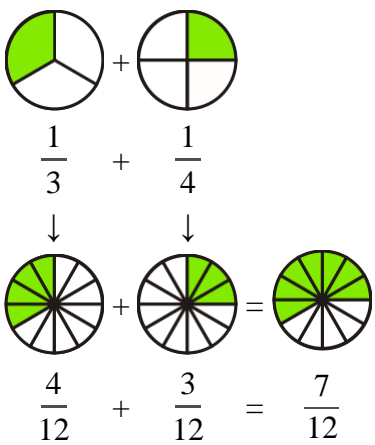
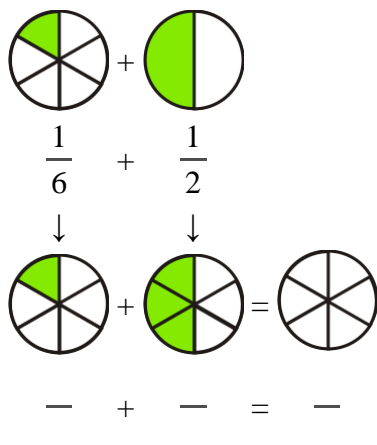

 $+$

 $=$


 $\frac{1}{3} + \frac{1}{2} =$ What fraction would this be?


 $+$

 $=$


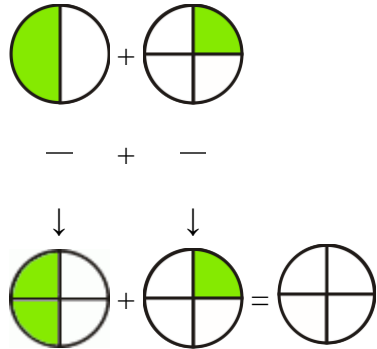
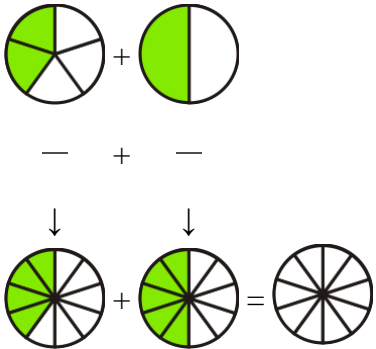
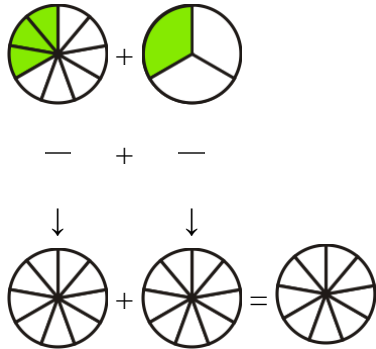
 $\frac{1}{3} + \frac{1}{4} =$ What fraction would this be?

Did you solve the problems above? Study the pictures below for solutions. Discuss them with your teacher.

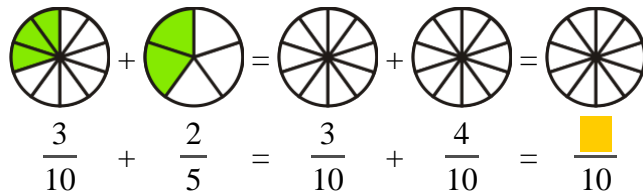
| | | |
|--|---|--|
|  <p style="text-align: center;">$\frac{1}{3} + \frac{1}{2} = \frac{5}{6}$</p> |  <p style="text-align: center;">$\frac{1}{3} + \frac{1}{4} = \frac{7}{12}$</p> |  <p style="text-align: center;">$\frac{1}{6} + \frac{1}{2} = \frac{2}{3}$</p> |
|--|---|--|

To add unlike fractions, first convert them to _____ fractions. Then add.

1. Write the fractions, convert them into equivalent fractions, and then add them. Color the missing parts.

| | | |
|---|--|--|
|  <p style="text-align: center;">a. $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$</p> |  <p style="text-align: center;">b. $\frac{1}{3} + \frac{1}{2} = \frac{5}{6}$</p> |  <p style="text-align: center;">c. $\frac{1}{4} + \frac{1}{3} = \frac{7}{12}$</p> |
|---|--|--|

Let's write the addition all on the same line now (horizontally).



2. Change these to equivalent fractions first and then add them. Each box below has TWO problems. In the bottom problem, you need to figure out what kind of pieces to use, but the *top* problem will help you do that!

a.

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

$$+ = + =$$

b.

$$+ = + =$$

$$+ = + =$$

c.

$$+ = + =$$

$$+ = + =$$

d.

$$+ = + =$$

$$+ = + =$$

3. Look at the problems above in exercise (2). What kind of parts did the fractions have? What kind of parts did you use in the final addition? Fill in the table.

| Types of parts to add: | Converted to: |
|--------------------------|------------------|
| a. 2nd parts + 6th parts | <u>6th</u> parts |
| c. 8th parts + 4th parts | ___ parts |

| Types of parts to add: | Converted to: |
|--------------------------|---------------|
| b. 4th parts + 6th parts | ___ parts |
| d. 2nd parts + 8th parts | ___ parts |

4. In the problems below, split the parts (as in the example at the right) so that both fractions will have the same kind of parts.

Write an addition sentence.

These pictures change into... ...these.

Example:

$\frac{1}{4} + \frac{3}{8}$ $\frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

| | | |
|-------------------------------------|-------------------------------------|-------------------------------------|
| a. $\square + \square =$ | b. $\square + \square =$ | c. $\square + \square =$ |
| d. $\square + \square =$ | e. $\square + \square =$ | f. $\square + \square =$ |

5. Fill in the table based on the problems above in exercise (4).

| Types of parts to add: | Converted to: | Types of parts to add: | Converted to: |
|---------------------------------|---------------|---------------------------------|---------------|
| a. 2nd parts + 8th parts | ___ parts | d. 2nd parts + 5th parts | ___ parts |
| b. 2nd parts + 4th parts | ___ parts | e. 3rd parts + 5th parts | ___ parts |
| c. 3rd parts + 6th parts | ___ parts | f. 3rd parts + 2nd parts | ___ parts |

6. Now think: How can you know into what kind of parts to convert the fractions that you are adding? Can you see any patterns or rules in the table?

7. **Challenge:** If you think you know what kind of parts to convert these fractions to, then try these problems. Don't worry if you don't know how to do them—we will study this more in the next lesson.

| | | |
|---|---|---|
| a. $\frac{1}{2} + \frac{2}{3} =$ | b. $\frac{2}{5} + \frac{2}{3} =$ | c. $\frac{1}{3} + \frac{1}{4} =$ |
|---|---|---|