

## Partitioning Shapes into Equal Parts

Splitting a shape into equal parts is what fractions are about. Two equal parts = halves. Three = thirds. Four = fourths. And so on.

Number of equal parts	Name of each part
2	half ( $\frac{1}{2}$ )
3	third ( $\frac{1}{3}$ )
4	fourth or quarter ( $\frac{1}{4}$ )
6	sixth ( $\frac{1}{6}$ )
8	eighth ( $\frac{1}{8}$ )

### Key Concepts

- Partitioning** means splitting a shape into equal parts.
- Each part is a *unit fraction* of the whole:  $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$
- The **more** pieces you split a shape into, the *smaller* each piece becomes. A pizza cut into 8 pieces gives smaller slices than the same pizza cut into 4.
- To name what fraction is shaded, count the shaded parts (numerator) over the total parts (denominator).

### Worked Examples

① A rectangle is cut into 3 equal parts. What fraction is each part?

 Three equal parts means thirds. Each part is  $\frac{1}{3}$  of the whole.

 **Answer:**  $\frac{1}{3}$

② A pizza is cut into 8 equal slices. You eat 2 slices. What fraction did you eat?

 2 eaten out of 8 total =  $\frac{2}{8}$ .

 **Answer:**  $\frac{2}{8}$

③ Which is larger:  $\frac{1}{4}$  of a pie or  $\frac{1}{6}$  of the same pie?

 Same numerator (1); compare denominators.  $4 < 6$ , so fourths are bigger pieces than sixths.  $\frac{1}{4}$  is larger.

 **Answer:**  $\frac{1}{4}$

### Practice Problems

Identify the fraction or compare sizes.

1. Shape split into 2 equal parts  $\Rightarrow$  each = \_\_\_\_\_  
?
2. Shape split into 4 equal parts  $\Rightarrow$  each = \_\_\_\_\_  
?
3. Shape split into 6 equal parts  $\Rightarrow$  each = \_\_\_\_\_  
?
4. Shape split into 8 equal parts  $\Rightarrow$  each = \_\_\_\_\_  
?
5. 3 of 4 equal parts shaded  $\Rightarrow$  fraction = ?  
\_\_\_\_\_
6. 5 of 8 equal parts shaded  $\Rightarrow$  fraction = ?  
\_\_\_\_\_
7. Which is bigger:  $\frac{1}{3}$  or  $\frac{1}{6}$ ? \_\_\_\_\_
8. Which is bigger:  $\frac{1}{2}$  or  $\frac{1}{4}$ ? \_\_\_\_\_
9. A bar is split into 3 equal parts. 2 are shaded.  $\Rightarrow$  ?  
\_\_\_\_\_
10. A circle is split into 6 parts. 1 is shaded.  $\Rightarrow$  ?  
\_\_\_\_\_
11. Halves, thirds, or fourths: which has the largest piece?  
\_\_\_\_\_
12. How many eighths make one whole?  
\_\_\_\_\_

### Study Tips

-  More pieces means smaller pieces. Two halves are big; eight eighths are small.
-  A shape can only be split into equal pieces if all pieces are the same size. Otherwise, it doesn't count as fractioning.
-  When the numerator equals the denominator ( $\frac{8}{8}, \frac{4}{4}$ ), you have the whole.

### Word Problems

1. A brownie tray is cut into 6 equal pieces. Tyler eats 2 pieces. What fraction of the tray did he eat?  
Answer: \_\_\_\_\_
2. Nina folds a piece of paper into 4 equal parts and colors 3 of them. What fraction is colored?  
Answer: \_\_\_\_\_

**Answer Key — with Friendly Explanations****Practice Problems**

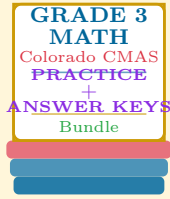
1. Each is a half.  **Answer:**  $\frac{1}{2}$
2. Each is a fourth.  **Answer:**  $\frac{1}{4}$
3. Each is a sixth.  **Answer:**  $\frac{1}{6}$
4. Each is an eighth.  **Answer:**  $\frac{1}{8}$
5. 3 shaded of 4 total.  **Answer:**  $\frac{3}{4}$
6. 5 shaded of 8 total.  **Answer:**  $\frac{5}{8}$
7. Same numerator, smaller denominator wins.  **Answer:**  $\frac{1}{3}$
8. Same numerator, smaller denominator wins.  **Answer:**  $\frac{1}{2}$
9. 2 of 3 shaded.  **Answer:**  $\frac{2}{3}$
10. 1 of 6 shaded.  **Answer:**  $\frac{1}{6}$
11. Fewer pieces = bigger pieces. Halves.  **Answer:** *Halves*
12.  $\frac{8}{8}$  makes one whole.  **Answer:** 8

**Word Problems**

1. 2 out of 6:  $\frac{2}{6}$ .  **Answer:**  $\frac{2}{6}$
2. 3 out of 4:  $\frac{3}{4}$ .  **Answer:**  $\frac{3}{4}$

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