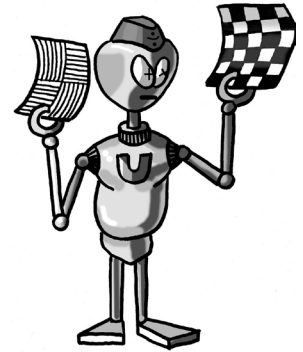


## Sample Lesson

### Strategy: Look for a Pattern

Some math problems ask you to write what comes next. In a pattern, numbers go in order according to a rule. The numbers in a pattern may be getting larger or smaller. **Look for a pattern.** This strategy helps you think about what rule a pattern is following.



#### Example:

Change the fraction to a decimal by dividing the numerator by the denominator. The quotient will either terminate (end) or repeat. The decimal equivalents in each fraction family reveal a pattern.

Calculate the decimal equivalents and fill in the table. Memorize the values.

Find what you know. Plan what to do. Ask if the answer is reasonable.

- The denominator is always 12.
- Divide the numerator by the denominator.
- Some fractions can be simplified to lowest terms.  
Examples are  $\frac{3}{12} = \frac{1}{4}$  and  $\frac{6}{12} = \frac{1}{2}$ .
- The pattern makes it easier to remember.

Fraction	Decimal
1/12	0.08 $\overline{33}$
2/12	0.1 $\overline{66}$
3/12	0.25
4/12	0.3 $\overline{3}$
5/12	0.41 $\overline{66}$
6/12	0.50
7/12	0.58 $\overline{33}$
8/12	0.6 $\overline{6}$
9/12	0.75
10/12	
11/12	
12/12	

**Final answer:** Continue to fill in chart:

$$\frac{10}{12} = 0.8333\dots = 0.8\overline{33}$$

$$\frac{11}{12} = 0.91666\dots = 0.91\overline{66}$$

$$\frac{12}{12} = 1.00$$

The pattern occurs in sets of 3. In the first set of three, the first decimal ends in  $\overline{33}$ , the second in  $\overline{66}$ , and the third is equal to 1 quarter. In the second set of three, the first decimal ends in  $\overline{33}$ , the second in  $\overline{66}$ , and the third is equal to 2 quarters, and so on. The difference between each decimal equivalent is  $0.08\overline{33}$ .

**Look for a pattern** in each fraction family to solve the next four problems. Divide until the quotient terminates or begins to repeat.

Change the fraction to a decimal. Fill in the tables.  
The decimal equivalents in each fraction family reveal a pattern. Memorize the values.

Use these boxes to show your work.

1.

Fraction	Decimal
$\frac{1}{3}$	
$\frac{2}{3}$	
$\frac{3}{3}$	

1

2.

Fraction	Decimal
$\frac{1}{4}$	
$\frac{2}{4}$	
$\frac{3}{4}$	
$\frac{4}{4}$	

2

3.

Fraction	Decimal
$\frac{1}{5}$	
$\frac{2}{5}$	
$\frac{3}{5}$	
$\frac{4}{5}$	
$\frac{5}{5}$	

3

4.

Fraction	Decimal
$\frac{1}{6}$	
$\frac{2}{6}$	
$\frac{3}{6}$	
$\frac{4}{6}$	
$\frac{5}{6}$	
$\frac{6}{6}$	

4