

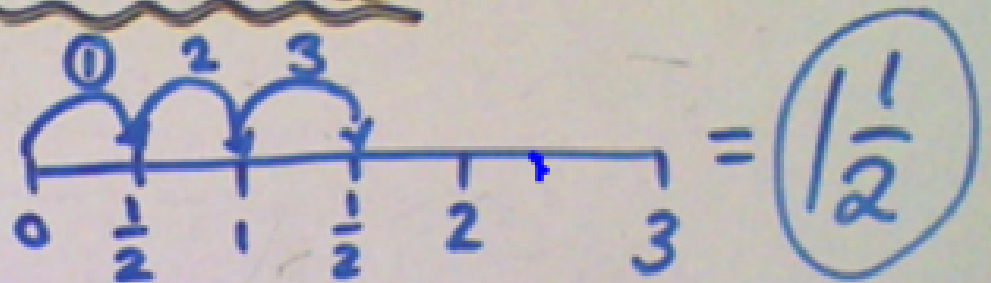
Remember multiplication is repeated addition  
( $2+2+2+2$  is the same as  $2 \times 4$ )

## Multiplying Fractions Pictorially

### Whole Numbers with Fractions

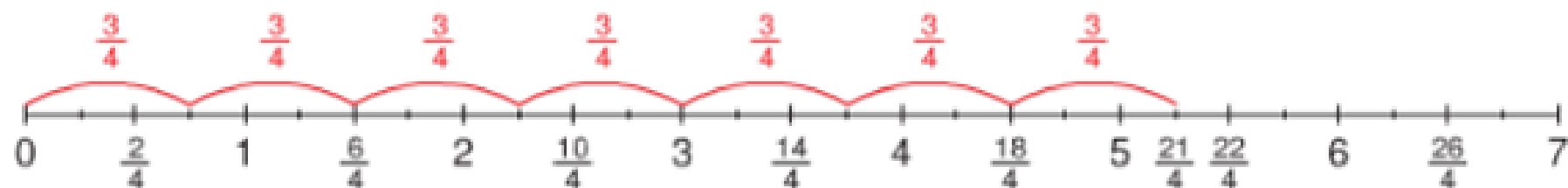
$$3 \times \frac{1}{2}$$

3 groups  
of  $\frac{1}{2}$

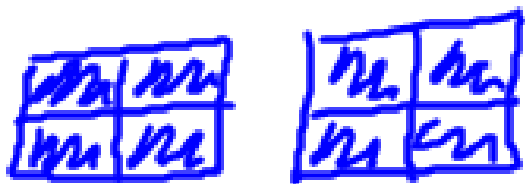


$\frac{1}{2} \quad \frac{1}{2} \quad \frac{1}{3} = 1\frac{1}{2}$

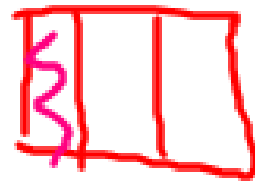
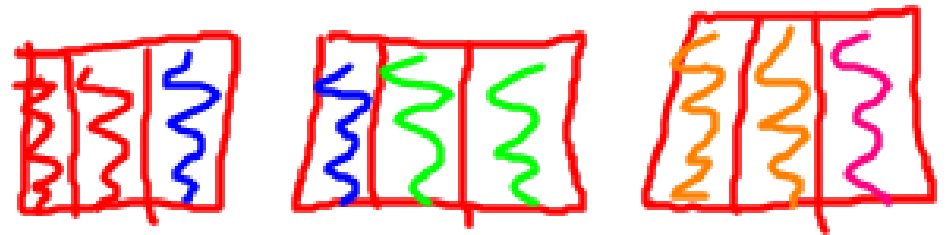
We can use a number line divided into fourths to show that  $7 \times \frac{3}{4} = \frac{21}{4}$ .



$$\frac{1}{4} \times 8 = 2$$



$$5 \times \frac{2}{3}$$



$$3\frac{1}{3}$$

$$3 \times \frac{2}{5}$$



$$= \frac{6}{5} = 1\frac{1}{5}$$

of means multiply

$$\frac{1}{2} \text{ of } 6 = \frac{1}{2} \times 6$$

### Example 1

New flooring has been installed in two-thirds of the classrooms in the school.

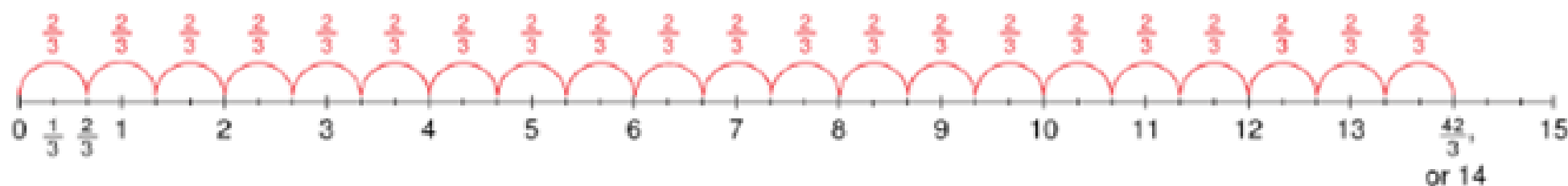
There are 21 classrooms in the school.

How many classrooms have new flooring?

#### ► A Solution

Multiply:  $21 \times \frac{2}{3}$

Use a number line divided into thirds.



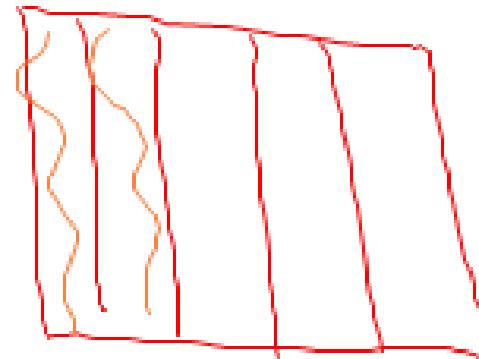
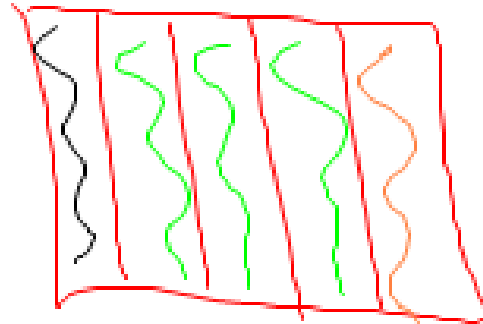
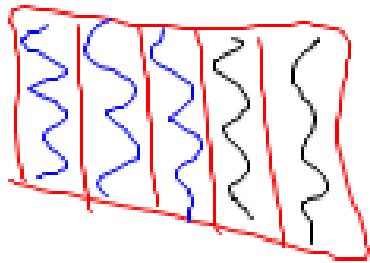
So,  $21 \times \frac{2}{3} = \frac{42}{3}$ , or 14

Fourteen classrooms have new flooring.

## Example 2

An office building with four floors has rented out  $\frac{3}{5}$  of each floor.  
How many floors of the building have been rented?

$$4 \times \frac{3}{5}$$



$$= 2\frac{2}{5}$$

pg 108 #5, 6, 8, 10, 11, 14, 15, 16, 17, 20 (note when it says fraction circles or counters you can use rectangles or number lines like we've been doing in class) Challenge question #22