Do Now: Write the ratio of shaded to unshaded circles.

2 to 3

4 to 6

$\frac{4}{6}$ $\frac{2}{3}$

4:6   2:3

7.1 Ratios and Rates

7.RP a to b $\frac{a}{b}$ $a:b$ $10 for 5 melons
                                          $2 for 1 melon
                                          one
• SWBAT find ratios and unit rates.
• SWBAT understand ways of representing numbers;   unit
understand relationships among numbers.

Calculators: Yes

A **ratio** uses division to compare two quantities.

Writing Ratios
-You can write a ratio of two quantities, a and b, where b≠0, in three ways:
• a to b
• a : b
• a/b

–Each ratio is read "the ratio of a to b"

–A ratio should be written in simplest form

Write the ratio in simplest form and two other ways.

1. $\frac{12}{36}$ $\frac{1}{3}$ 1 to 3   1:3

12 to 36
12 :36

2.   15 : 10 $\frac{3}{2}$ 3 to 2   3:2

An archer shoots 60 arrows at a target, with 44 arrows hitting the scoring area.

a) Write a ratio of the number of hits to the number of shots.

b)Write a ratio of the number of hits to the number of misses.

A ski resort has 15 easy, 25 intermediate, 7 difficult, and 11 expert only trails. Write the ratio in three ways:

a.) easy to intermediate
15 to 25
3 to 5 $\frac{3}{5}$
3:5

b.) expert to difficult
$\frac{11}{7}$ 11 to 7   11:7

Equivalent ratios are two ratios that have the same value.

Write the equivalent ratio.

1. $\dfrac{5\,cm}{1\,min} = \dfrac{?\,cm}{1\,hr}$ $\dfrac{300\,cm}{1\,hr}$

$$\dfrac{5\,cm}{1\,min} \cdot \dfrac{60\,min}{1\,hr} = \dfrac{300\,cm}{1\,hr}$$

Write the equivalent ratio.

2. $\dfrac{\$\,?}{1\,foot} = \dfrac{\$6.99}{1\,yard}$

Dollars   Dollars

$$\dfrac{\$6.99}{1\,yard} \cdot \dfrac{1\,foot}{3\,feet} = \dfrac{\$6.99}{3\,feet}$$

Yards   feet

$$\dfrac{\$6.99 \div 3}{3\,feet} = \dfrac{\$2.33}{1\,foot}$$

A clock chimes 4 times each hour. How many times does it chime per week?

$$\dfrac{4\,chimes}{1\,hour} = \dfrac{?\,chimes}{1\,week}$$

$$\dfrac{4\,chimes}{1\,hour} \cdot \dfrac{24\,hours}{1\,day} \cdot \dfrac{7\,days}{1\,week} = \dfrac{672\,chimes}{1\,week}$$

A jet flies 540 miles per hour. Write its rate in miles per minute.

miles   hour   miles

$$\dfrac{540\,miles}{1\,hr} \cdot \dfrac{1\,hour}{60\,minutes} = \dfrac{540\,miles}{60\,minute}$$

hour   minute   minute

$$= \dfrac{9\,miles}{1\,minute}$$

Rate is a ratio of two quantities measured in different units.

Unit rate is a rate that has a denominator of 1 when expressed as a fraction.

Find the unit rate. denominator = 1

1. $\dfrac{140\,words \div 4}{4\,min \div 4} = \dfrac{35\,words}{1\,min}$

Find the unit rate.

2. $\dfrac{80\,oz}{2.5\,servings}$ $\dfrac{32\ oz}{1\ serving}$

3. $\dfrac{\$320}{4\,people}$ $\dfrac{\$80}{1\ person}$

4. $\dfrac{24\,muffins}{\$15}$ $\dfrac{1.6\ muffins}{\$1}$

Exit Pass 7.1

An insect crawls 1 foot in 10 seconds. At this rate, how far will it crawl in 5 minutes.

Exit Pass 7.1

One adult chaperone is required to accompany every six students on a museum tour. How would you write this ratio of students to adults? Represent the ratio in three different ways.

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg.

Reflection of Today's Lesson

7.1 Ratios and Rates

7.RP

- SWBAT find ratios and unit rates.
- SWBAT understand ways of representing numbers; understand relationships among numbers.

Calculators: Yes

Homework

pg. 319 #11-27 odds, 18, 20

Lightning strikes about 100 times per second around the world. About how many times does lightning strike per minute around the world?

Massai types 75 words per minute. How many words can he type in an hour at this rate?