

Name: _____

WORKING WITH RATIOS:

THREE WAYS:

1. 6 to 2
3 to 1

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

3. 6:2
3

DO NOT CHANGE TO paper!

ratio: compare 2 or more amounts

simplest form: **REDUCE** Lowest terms

You Try:
In the balloon, show with drawings how to divide up your own sketched 3:9 ratio to simplify it.

Reduce 3:9

model it

3:9 → 1:3

Part to Part

write it
a ratio representing hot air balloons with some type of stripe to hot air balloons with dots

1 s to d
2 s d 3 s:d

Fraction Notation

Ratio Notation

HATS:
ratio of total PPL

sketch it

Part to Whole

Red-uce AKA simplify it

number of dotted balloons to total number of balloons

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

Divide → Numerator
→ Denominator

the top and the bottom by the **SAME** Number!

Fraction Notation. Showing Part to Whole.

the root word for "ratio"

write a ratio for balloon to clouds

try it

8:2
4:1

Rational Number
is any number that can be written as a fraction

compare it

part to PART
Rummels to sandals
Blindstones to footwear

Part to WHOLE

part-to-part ratio vs. part-to-whole ratio

RATIOS

RATES

Unit Rate: *can be 100g*

calculate it

A hot air balloon travels 33 miles in 4 hours.

Write as a rate: $\frac{33 \text{ miles (mi)}}{4 \text{ hours (hr)}}$

Find the unit rate: $\frac{33 \text{ mi}}{4 \text{ hr}} = \frac{x}{1 \text{ hr}}$

$x = 1 \times 33 \div 4 = 8.25 \text{ mi/hr}$

explain it

The balloon travels an average of 8.25 mi in 1 hour!

Money goes as Numerator

define it: compares quantities that have different units.

example: $\frac{\$6.98}{24 \text{ cans Pepsi}} = \frac{x}{1 \text{ can Pepsi}}$

sketch it: Create a visual reminder for unit costs and rates with money.

write it: Create a Proportion to find the UNIT RATE. Keep same categories on same levels!

$\frac{\$48.75}{40 \text{ gallons}} = \frac{? \$1.22}{1 \text{ gallon}}$

Rate

UNIT RATE

Denominator must be 1

$1 \times 48.75 = 40$

CONVERTING a RATE:

To change the format (units) but keep the rate equivalent to the original, we will multiply by carefully selected ratios that are all just special versions of 1

These are called: $\frac{\$7.69}{1 \text{ L}} \rightarrow \frac{\$7.69}{1000 \text{ mL}} \rightarrow \frac{?}{250 \text{ mL}}$

$\times 1000$



We use **Unit Rates** to determine the better Deal (aka **Lowest Cost**) when comparing different sizes of items

What is the better buy? 12 oranges for \$13.44 or 18 oranges for \$20.34?

$\frac{\$20.34}{18 \text{ oranges}} = \frac{x}{1 \text{ orange}}$

$1 \times 20.34 \div 18$

$\frac{\$13.44}{12 \text{ oranges}} = \frac{x}{1 \text{ orange}}$

$1 \times 13.44 \div 12$

The better buy is 12 oranges for \$13.44.

For small values!

500g for \$2.99 $\rightarrow \frac{\$2.99}{500 \text{g}} = \frac{\$0.00598}{1 \text{g}}$

$\frac{\$0.00598}{1 \text{g}} \times 100 = \frac{\$0.60}{100 \text{g}}$

Less than 1¢

5.98×10^{-3} decimal moves 3 spots

Scientific Notation

FRI: 4.1 Ratios p51 # 7-13, 20

4.2 Rates, Unit Rates p 60 # 4-12

4.3 Proportions p 67/68 # 5, 6, 9, 10, 14, 19, 20, 22