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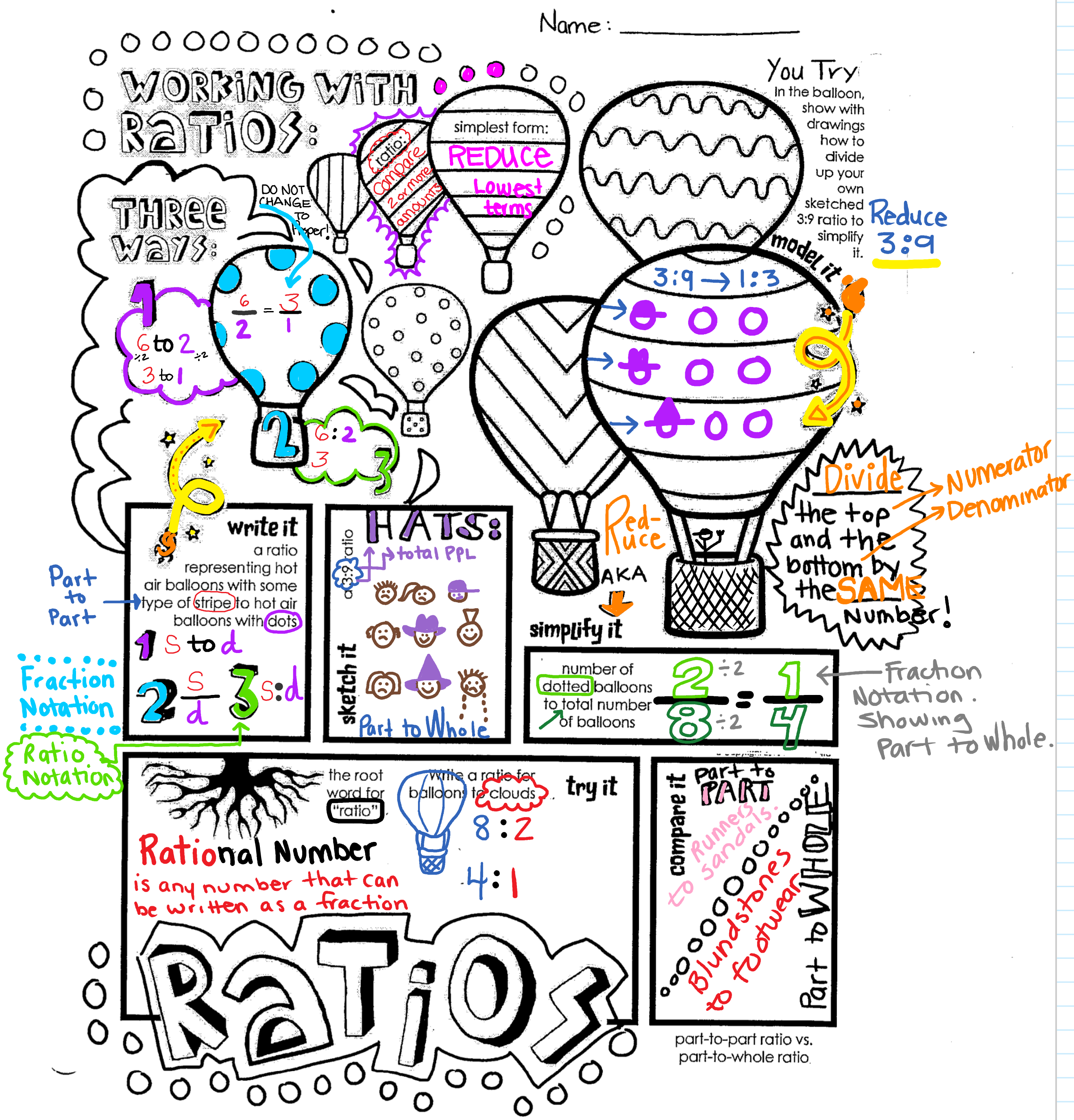

RATES

What is a rate? — define it → compares quantities that have different units.

example → $6.98 / 24 cans Pepsi = x / 1 can Pepsi (cross multiply then ÷) → $0.29 or 29¢ (Not 0.29¢)

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

Money goes as Numerator

Create a Proportion to find the UNIT Rate

$ / cans = $ / cans — Keep same categories on same levels!

Denominator must be 1

The 40 gallons of propane required for the balloon ride will cost $48.75. Write this rate & the unit rate. — write it

set den = 1

Related → Rate: $48.75 / 40 gallons ÷ = ? $1.22 / 1 gallon — Unit Rate

1x48.75÷40

Unit rate:

A hot air balloon travels 33 miles in 4 hours. — calculate it

Write as a rate. 33 miles (mi) / 4 hours (hr)

Find the unit rate. 33mi / 4hr = x / 1hr

x = 1 x 33 ÷ 4 = 8.25mi / 1hr

explain it

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

Per Unit → 1 hour!

can be 100g

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: $7.69 / 1L → (x1000) $7.69 / 1000mL → ? / 250mL

Best Buy

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?

$13.44 / 12oranges = x / 1 orange → $1.12
1 x 13.44 ÷ 12

$20.34 / 18 oranges = x / 1 orange → $1.13
1 x 20.34 ÷ 18

The better buy is 12 oranges for $13.44.

For small values!

500g for $2.99 → $2.99 / 500g = $0.00598 / 1g = (x100) $0.60 / 100g

Less than 1¢

0.00598 → 5.98×10^{-3} — Scientific Notation (decimal moves 3 spots.)

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