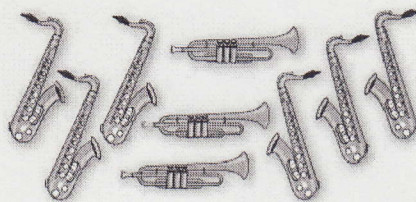Center #1 – Write the ratio and explain what the ratio means.

1. butterflies : caterpillars

2. saxophones : trumpets

The ratio of boys to girls in a class is 2:5. If there are 42 students in the class, how many are boys?

Center #2 – Write a unit rate for the situation

1. 288 miles on 9 gallons

2. 308 miles in 1.5 hours

3. $6\frac{2}{5}$ revolutions in $2\frac{2}{3}$ seconds

Center #3 – Solve the proportion

1) $\frac{2}{3} = \frac{x}{21}$

2) $\frac{5}{12} = \frac{y}{15}$

3) $\frac{8}{20} = \frac{6}{w+2}$

4) The ratio of adults to children is 5 to 3. If there are 90 adults, how many children are there?

5) Fred sells 46 boxes in 4 hours, Jeff sells 57 boxes in 5 hours. Who sold more per hour?

Center #4

Which one is the better buy?

5 ounce can of tuna for $0.90

12 ounce can of tuna for $2.40

Which one contains more sugar per ounce?

24 grams of sugar in 6 fluid ounces

15 grams of sugar in 4 fluid ounces

Center #5 – Tell whether the ratios form a proportion

1) $\dfrac{4}{9}, \dfrac{2}{3}$

2) $\dfrac{32}{40}, \dfrac{12}{15}$

3) $\dfrac{4}{5}, \dfrac{58}{72.5}$

Are x and y in a proportional relationship? How do you know?

x	1	3	6	8
y	4	12	24	32

X	Y
4	3
8	7
12	11
16	15

Center #6 – Solve the proportion

1) $\dfrac{7}{n} = \dfrac{42}{48}$

2) $\dfrac{3}{11} = \dfrac{27}{z}$

3) $\dfrac{x}{4} = \dfrac{2}{5}$

4) If four speeches last 10 hours, how many hours will six speeches last?

5) You mix $\dfrac{1}{2}$ gallon of yellow paint for every 1 gallon of blue paint to make 12 gallons of green paint. How much yellow and blue paint did you use?
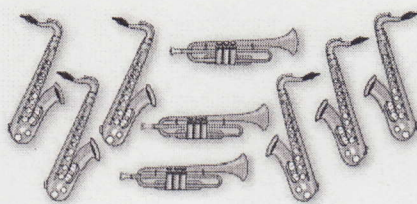
Center #1 – Write the ratio and explain what the ratio means.

1. butterflies : caterpillars   **2.** saxophones : trumpets

3:2 For every 3 butterflies there are 2 caterpillars

6:3 For every 6 saxophones there are 3 trumpets

The ratio of boys to girls in a class is 2:5. If there are 42 students in the class, how many are boys?

2:5 → 7 total groups

42 ÷ 7 = 6 in each group

2 groups of boys × 6 = 12 boys

Center #2 – Write a unit rate for the situation

1. 288 miles on 9 gallons

$$\frac{288}{9\,gal} = \frac{32\,mi}{1\,gal}$$ (÷9)

2. 308 miles in 1.5 hours

308 ÷ 1.5

205.3 Mi/hr

OR

$205\frac{1}{3}$ miles in 1 hour

3. $6\frac{2}{5}$ revolutions in $2\frac{2}{3}$ seconds

$$6\frac{2}{5} \div 2\frac{2}{3}$$

$$\frac{32}{5} \div \frac{8}{3}$$

$$\frac{4\,\,32}{5} \cdot \frac{3}{8_1} = \frac{12}{5} = 2\frac{2}{5}\ \text{revolutions in 1 sec.}$$

Center #3 – Solve the proportion

1) $\frac{2}{3} = \frac{x}{21}$ (×7)

x = 14

2) $\frac{5}{12} \diagup \frac{y}{15}$

$$\frac{12y}{12} = \frac{75}{12}$$

y = 6.25

3) $\frac{8}{20} \diagup \frac{6}{w+2}$

8(w+2) = 120

8w + 16 = 120

$-16 \quad -16$

$\frac{8w}{8} = \frac{104}{8}$ W = 13

4) The ratio of adults to children is 5 to 3. If there are 90 adults, how many children are there?

90 ÷ 5 = 18 in each group

18 × 3 = 54 children

5) Fred sells 46 boxes in 4 hours, Jeff sells 57 boxes in 5 hours. Who sold more per hour?

46 ÷ 4 = 11.5 boxes/hr

57 ÷ 5 = 11.4 boxes/hr

Fred

Center #4

Which one is the better buy?
5 ounce can of tuna for $0.90
12 ounce can of tuna for $2.40

$0.90 \div 5 = \$0.18/oz$

$2.40 \div 12 = \$0.20/oz$

5 ounce is
better buy

Which one contains more sugar per ounce?
24 grams of sugar in 6 fluid ounces
15 grams of sugar in 4 fluid ounces

$24 \div 6 = 4$ grams/ounce

$15 \div 4 = 3.75$ grams/ounce

24 grams of sugar in 6 oz
has more sugar

Center #5 – Tell whether the ratios form a proportion

1) $\dfrac{4}{9}, \dfrac{2}{3}$

$\dfrac{2}{3}$ yes   No

2) $\dfrac{32 \div 8}{40 \div 8}; \dfrac{12 \div 3}{15 \div 3}$

$\dfrac{4}{5}, \dfrac{4}{5}$

yes

3) $\dfrac{4}{5} \times \dfrac{58}{72.5}$

$\begin{array}{c} 72.5 \\ \times\ 4 \\ \hline 290 \end{array}$ $\begin{array}{c} 58 \\ \times\ 5 \\ \hline 290 \end{array}$

yes

Are x and y in a proportional relationship? How do you know?

x	1	3	6	8
y	4	12	24	32

×4 ×4 ×4 ×4

yes

X	Y
4	3
8	7
12	11
16	15

$\dfrac{4}{3} = 1\tfrac{1}{3}$ ✓

$\dfrac{8}{7} = 1\tfrac{1}{7}$

$\dfrac{12}{11} = 1\tfrac{1}{11}$

$\dfrac{16}{15} = 1\tfrac{1}{15}$

Not the same.

No

Center #6 – Solve the proportion

1) $\dfrac{7}{n} = \dfrac{42}{48}$ ×6

$n = 8$

2) $\dfrac{3}{11} = \dfrac{27}{z}$ ×9

$z = 99$

3) $\dfrac{x}{4} \times \dfrac{2}{5}$

$5x = 8$

$x = \dfrac{8}{5} = 1\tfrac{3}{5}$

If $2 \times \boxed{3} = 6$,
$6 \div 2 = 3$. So
$8 \div 5$ will equal x.

4) If four speeches last 10 hours, how many hours will six speeches last?

$10 \div 4 = 2.5$ hrs per speech

$\begin{array}{c} 2.5 \\ \times\ 6 \\ \hline 15.0 \end{array}$ 15 hours

5) You mix $\dfrac{1}{2}$ gallon of yellow paint for every 1 gallon of blue paint to make 12 gallons of green paint. How much yellow and blue paint did you use?

$\dfrac{1}{2} + 1 = 1\tfrac{1}{2} \rightarrow 12 \div 1\tfrac{1}{2} = 8$

yellow $\rightarrow 8 \times \tfrac{1}{2} = 4$ gallons
blue $\rightarrow 8 \times 1 = 8$ gallons