Finance and Workplace Math 110

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Hello Anya, Austin, Cynthia, Ethan, Faith, George, Harley, Ivy, Josie, Lukas, Nathan, Sam and Valery! I hope you are all settling into a nice home learning routine, following guidelines to stay safe, and keeping your minds and bodies active. If you are experiencing difficulties at this time, please email me at the address above and I can set you up with help.

RATIOS are used in the real world to compare amounts or quantities to each other. The simplest ratios compare only two values, but ratios comparing three or more values are also possible. If a special cereal mixture contains rice and wheat in the ratio of 2:3, and the mixture contains 4 pounds of rice, how much wheat does it contain? Let's see what this means.
https://www.youtube.com/watch?v=IKf5Bjgup6s

- For practice, go to https://www.commoncoresheets.com/Ratios.php and for each of the first 4 sections (Finding Ratios Visual, Ratio Wording, Rate Language, and Reducing Ratios), click on the pink "One atta Time" tab and answer as many questions as needed for you to feel confident in your understanding. For the 5th section (Understanding Ratios (Word)), select a worksheet from the dropdown on the right. Complete as many worksheets as needed to feel confident.

A ratio is normally written using only whole numbers and in simplest form. Because they usually do not contain units, it is assumed that the units are the same. If they are not, they must be converted to the same units; the smaller unit of measure is easiest. Some common metric measurements are

Length	Mass	Capacity
1 kilometer = 1,000 meters 1 meter = 100 centimeters 1 centimeter = 10 millimeters	1 kilogram = 1,000 grams 1 gram = 1,000 milligrams	1 liter = 1,000 milliliters

Here is a Metric Conversion Trick   https://www.youtube.com/watch?v=5tHpDzXP-lg

- Metric Conversion Worksheet - see PDF file called Conv Metric

Often in the workplace, especially the trades, drawings are used to represent objects that are very large. A map cannot be the same size as the area it represents so, the measurements are scaled down to make the map a size that can be conveniently used. A **SCALE** drawing of a building (or bridge) has the same shape as the real building (or bridge) that it represents but is scaled (reduced) for the builders to use. When comparing the **scale** of a drawing to the original item, we write it as a **ratio** in the form ***Drawing length : Actual length*** .

https://www.youtube.com/watch?v=_RJRwzkSOAc&t=49s

- Scale Worksheet -   see attached PDF file called Scale WS

A **scale** can be expressed with units (1 cm to 1 km) or as a **ratio** without units (1 : 100 000) . In order to get rid of the units and end up with an answer like 1 : 10 or 3 : 20, you have to convert to the same units (remember, smallest is easiest) and then delete the units.

Ex. Write the scale 1cm to 1m in ratio form

      1cm to 1m = 1cm : 1m
               = 1cm : 100 cm
               = 1 : 100

Ex. Write 5cm to 2km in ratio form

      5cm to 2km = 5cm : 2km
                = 5cm : 200 000cm
                = 5 : 200 000
                = 1 : 40 000

Put it all together

Email me your answers if you want me to check them.

1. Re-write each as a ratio in the form 1 : ?

a. 1 cm : 5 km   **b.** 2 : 5,000   **c.** 5 cm : 100 m   **d.** 5 mm : 2 m   **e.** 3 : 51 000

2. A common scale for collectible toy cars is 1:64. Use the following measurements of the scale model to determine the actual measurements of the 1959 Volkswagen Beetle. Round your answers to the nearest centimetre.

a) length = 6.4 cm

b) width = 2.4 cm

c) height = 2.3 cm

d) wheel diameter = 5.6 mm

3. A dentist is hiring a local renovation company to update the reception area of the office.

a) How many squares make up 1 metre on the drawing?

b) Count the squares on the drawing to determine the dimensions of the reception area.

hall

reception area

Scale: 1 square represents 0.5 m
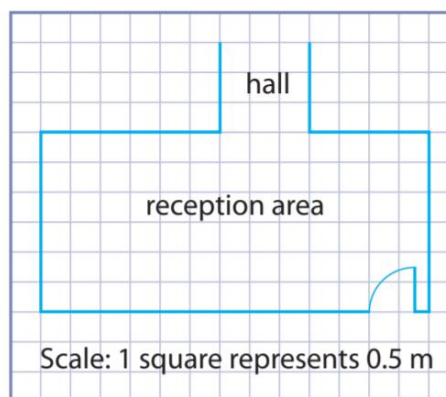
For **Games Day**, try this Color Fill activity, it is harder than it seems! What strategy works for you?   https://www.hoodamath.com/games/colorfill.html

Have a great week 😊