Grade 8 FI Math & Science Learning Opportunities

Week of May 4th

MATH ENGLISH

MANGAHIGH CHALLENGES

I will be changing our challenges this week to focus on **ratios**. Please let me know if you need your mangahigh password and I will send it to you.

Don't forget you can message me on mangahigh if you have any questions. Always try each challenge at least three times. Good luck!

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MATH AT WORK—MATH MEETS ENTREPRENEURSHIP | FULL EPISODE

https://www.youtube.com/watch?v=tAfcZ3ArEs8

SCRATCH 30

Choose any 4 one-digit numbers:
_____

Use 2, 3, or 4 of these numbers with any operations to find an answer of 1 - 30.
You cannot use a number more than once per expression.

1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30

MATH-SCIENCE LINK

In the past couple of weeks, you probably noticed quite a bit of Math creeping into your Science Learning Opportunities. The great news is that you will continue to see more and more of that as you keep moving ahead in your Science studies! This week, I am sharing some neat calculator tools that you may find useful & fun. As per usual, these are the Android versions but I'm sure Apple users will find something very similar.

Photomath	Paper calculator	Microsoft Maths	Fractions Calculator	GeoGebra
Photomath, Inc.	(math handwriting	Solver	– detailed solut...	Graphing
In-app purchases	script)	Microsoft Corporation	UUCMobile · Education	Calculator
	Twiggy AI		☑ Installed	International GeoGebra Institute

SCIENCE   Mass, Volume and Density

1. Watch these videos to understand how to calculate density from the volume and mass of an object. Each video is important.

https://www.youtube.com/watch?v=DVQMWihs3wQ

https://www.youtube.com/watch?v=xLr0ElDc48I

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\rho = \frac{m}{V}$$

Checklist:

FORMULAS: D = M ÷ V   M = D x V   V = M ÷ D

DEFINITION: Density = is the mass of a substance compared to the volume of space it contains

UNITS OF MEASUREMENT:

Volume: **cubic centimeters (cm³)** for solids   AND   **milliliters (mL)** for liquids and gasses

Mass: **grams (g)**

Density: **g ÷ cm³** for solids and **g ÷ ml** for liquids and gasses (mass ÷ volume)

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2. Solve the following density problems:

1. An aluminum block has a volume of 15mL and has a mass of 45g. What is its **density**?

2. Mercury (liquid metal) is poured into a graduated cylinder which supports 20mL and is completely filled. This mercury has a mass of 320g. Calculate the **density** of mercury.

3. What is the **mass** of 200mL of liquid ethanol if its density is 0.8g / mL?

4. A copper block has a mass of 320g. The dimensions of the block are 8 cm by 5 cm

by 4 cm. Find the **density** of the block of copper. (hint: find the **volume** first !!!)

V = L x W x H

5. What is the **volume** of a block of silver whose mass is 2500g and the density is 25g / cm^3.

6. Find the **mass** of a sample of benzene gas with a volume of 100mL and a density of 0.9g / mL.

7. A lead block with measurements of 4cm by 5cm by 6cm has a mass of 240g. Find the **density** of the lead.