

Quizzes handed back at end...

Purpose:

How do we count the units of heat in this or this?

WARMUP:

"Isolate X."

$$A = B \cdot C \cdot X$$

divide both sides by B.C

$$\frac{A}{B \cdot C} = X$$

$$A \cdot B = \frac{C}{X}$$

Multiply both sides by X

$$ABX = C$$

divide both sides by A.B

$$X = \frac{C}{AB}$$

#1

~~#~~ There are four common energy units

Abbreviations:

kJ J cal Cal

{ 4.184 kilojoules = 4184 joules = 1000
calories = 1 Calorie (notice *calories*) }

don't memorize between the brackets

Calorie is used on food labels in the United States.

calorie is used in science labs.

one calorie (definition) is the amount of heat energy that raises one gram of water by one degree celsius

you should know what they measure.
check your understanding:

what does each MEASURE?	
meters	mL
joules	kelvins
°F	J
calories	kilojoules

word bank: VOLUME ENERGY DISTANCE TEMPERATURE

#2

THERE IS A FORMULA
FOR PREDICTING HOW MUCH
HEAT WILL LEAVE SOMETHING

$$Q = (m)(C_p)(\Delta T)$$

$$\text{heat} = (\text{mass})(C_p)(\text{CHANGE IN TEMPERATURE})$$

$$[\text{joules}] = [\text{grams}] \left[\frac{\text{joules}}{\text{g} \cdot ^\circ\text{C}} \right] [^\circ\text{C}]$$

#3 THE C_p IS A NUMBER
YOU LOOK UP IN A TABLE.

IT'S CALLED THE SPECIFIC
HEAT CONSTANT

ALUMINIUM	$C_p = 24.2 \frac{\text{Joules}}{\text{mol} \cdot \text{K}}$
Water	$C_p = 4.184 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}}$

By the Bell, do
1, 3, 8, 12, 15

By tomorrow do
ALL

~~Test Thursday!~~