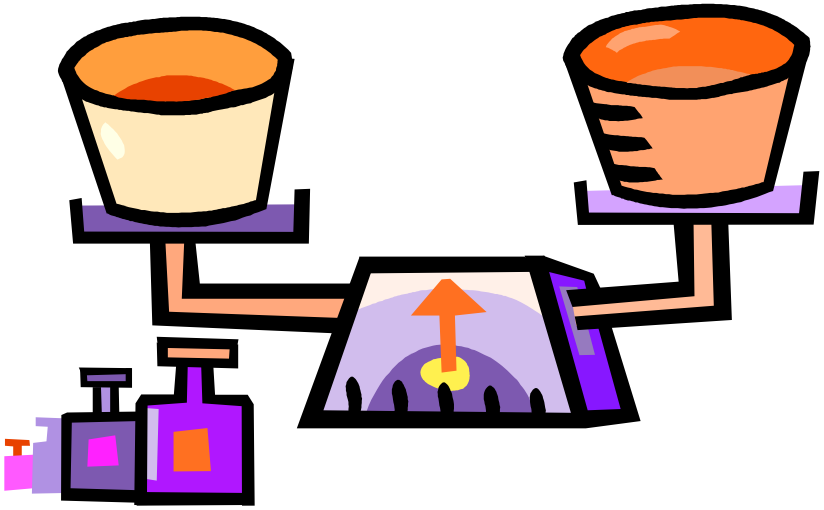
Essential Question: What is Matter and the Law of Conservation of Matter?

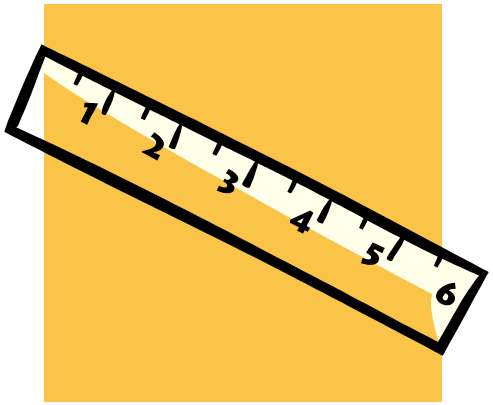
Standard:

S8P1f. Construct an explanation based on evidence to describe conservation of matter and mass in a chemical reaction including the resulting differences between products and reactants.

Matter

Anything that has **mass** and takes up space (**volume**)





Mass (g)

- Mass is the amount of matter in an object
- The mass of an object is the same no matter where in the universe the object is located
- The only way to change the mass of an object is to change the amount of matter that makes up the object

What's the difference between mass and weight?

Weight is a measure of the gravitational force exerted on an object.

An object's weight can change depending on its location in the universe.

http://www.thecalculatorsite.com/articles/units/difference-between-mass-and-weight.php

Volume (cm^3 or mL)

- All matter takes up space. The amount of space taken up, or occupied, by an object is known as the object's **volume**
- Imagine a speck of dust. Even the tiniest speck of dust takes up space. Another speck of dust cannot fit into that space without somehow bumping the first speck out of the way

Study Jams: Properties of Matter

[Introduces Density]

Measuring Mass and Volume of Objects [conduct simple labs on measuring mass and volume]

(Volume of irregular objects- water displacement)

Distributed Summarizing:

Light, Heat, Energy, and Sound are NOT considered Matter.

Explain why these are not considered Matter.

Law of Conservation of Matter Lab

or

View the Baking Soda/Vinegar lab video clip

Based on this lab, what do you think the Law of Conservation of Matter says? Why?

Law of Conservation of Matter [Mass]

Matter cannot be created or destroyed, it only changes form.

Law of Conservation of Matter [Mass]

2 Graham Crackers + 1 Marshmallow + 1 chocolate = 1 Smore

All the ingredients are still there, just in a different form.

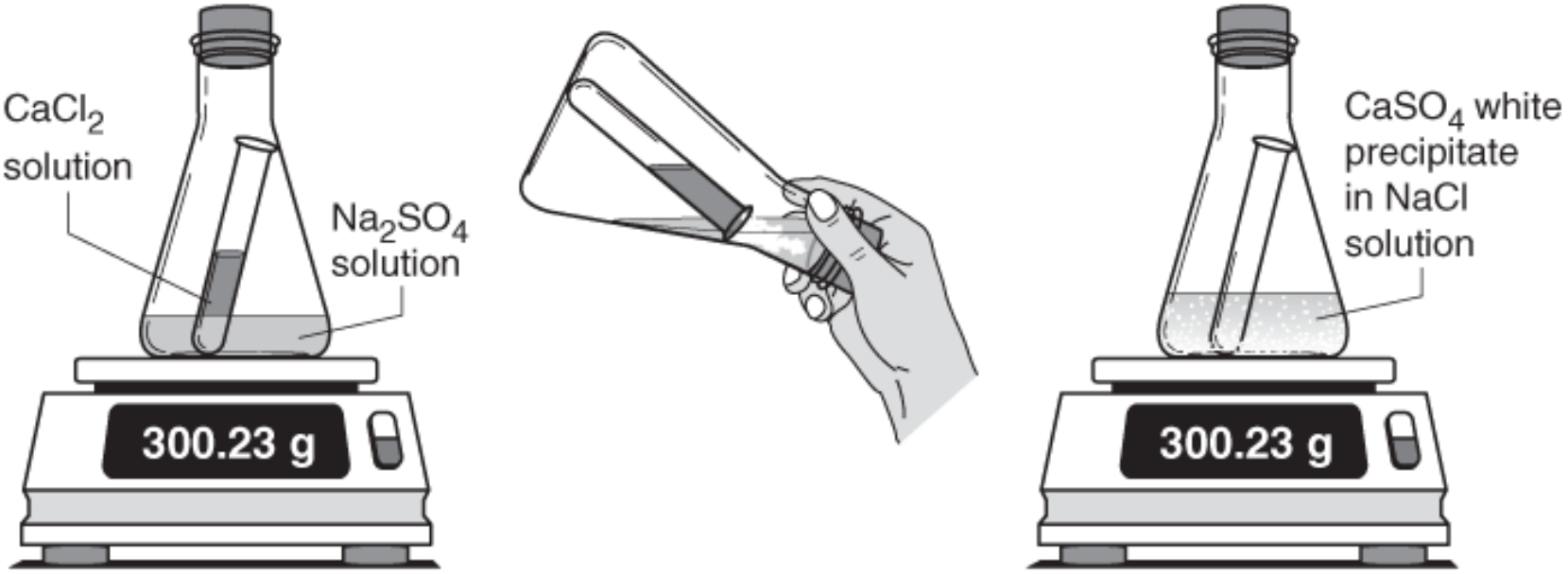
Law of Conservation of Matter [Mass] Video Clips

https://www.youtube.com/watch?v=dExpJAECSL8 (for equations)

https://www.youtube.com/watch?v=J5hM1DxaPLw

With a seat partner, discuss a real-world example of the Law of Conservation of Matter that you have experienced.

Law of Conservation of Matter [Mass]



MASS OF REACTANTS = MASS OF PRODUCTS

The Law of Conservation of Matter will be a constant theme throughout this unit.

Summarizing Strategy: Matter Acrostic

M -

A -

T -

T -

E -

R -