PROPERTIES OF MATTER: MASS VS. WEIGHT

PROMISE

SANFORD RESEARCH

CLOSE YOUR EYES & LISTEN TO THE VIDEO.

Write down what you heard.

Discuss with a partner:

- What did you see in the picture in your mind?
- What did you feel?
- Do you know for sure where you are?
- What do you think you can touch around you?

NOW WATCH THE VIDEO & ANSWER THE QUESTIONS BELOW.

How is the video similar or different to what you visualized?

What in this scene can you touch?

What in this scene can you feel but not touch?

MATTER & ENERGY

The video has matter and energy in it.

Matter:
- Takes up space
- Has mass
- Physical substance

Energy:
- Felt as heat
- Movement
- Sound

EXPLORING MATTER

Grab your lab book and draw something made of matter.

Name: _____

PROMISE SANFORD RESEARCH

PROPERTIES OF MATTER:
MASS VS. WEIGHT

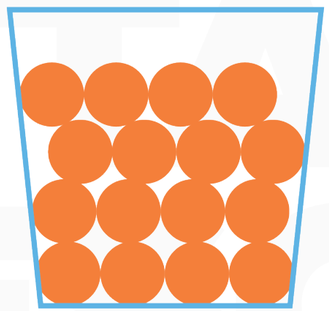
Fill out the questions below as you progress through the Properties of Matter: Mass versus Weight lesson and slideshow.

1. As you listen to the video, what do you picture? Draw and describe your answer below.

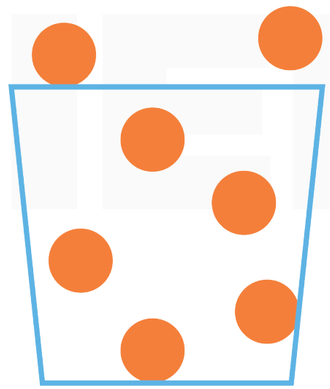
2. Draw something made of matter below.

WHAT IS MATTER?

Matter is made of particles called atoms. Put atoms together to get something you can touch.



When the atoms are close together they are more solid. When atoms are far apart they are less solid.



DESCRIBING MATTER

You can describe matter with mass.

If you measure the weight of an object, you are weighing two things:

- The mass of the item
- How much gravity is pulling it down

DESCRIBING MATTER

In space, objects are weightless because there is no gravity to pull it down. Does that mean it does not have mass? **NO!**

It is still made of matter. The mass of an object is always the same. But the weight changes depending on gravity.

MATTER IN SPACE

Watch the space video and consider the following questions.

Does the astronaut have weight?

Does the astronaut have mass?

Weight is measured in pounds (lb), and mass is measured in grams (g).

Weigh yourself and three or more other objects. Record your findings in your lab notebook.

3. How much do you weigh?

_____ **lb**

4. Would you weigh the same on the moon? Why?

Yes **No**

_____

_____

5. Weigh some common classroom items.
Record the items and their weights below.

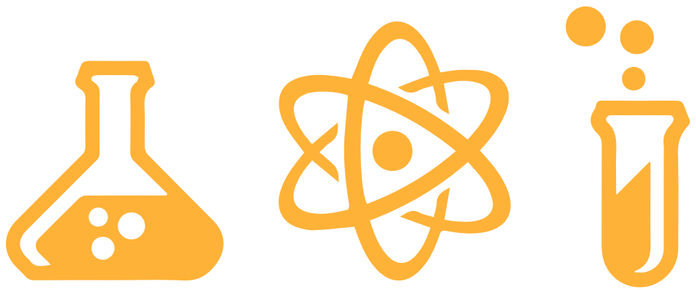
_____ = _____ **g**

_____ = _____ **g**

_____ = _____ **g**

_____ = _____ **g**

ANSWER THE REMAINING QUESTIONS IN YOUR LAB NOTEBOOK!



7. Finish the statements below by filling in the blanks with the words in the Word Bank on the right.

Weight of an object changes with the amount of _____

Matter is made of _____

Mass is measured in _____

WORD BANK

- ATOMS
- GRAMS
- GRAVITY

Here's what I did today!

I visited the virtual Sanford Research PROMISE lab to learned about matter. Matter is made of atoms. The amount of atoms in an object is what gives it its mass. I learned a person has mass in space but not weight! Weight depends on the amount of gravity. I got to use a scale to measure the mass of a lot of objects.