UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

الإمارات العربية المتحدة
وزارة التربية والتعليم

Khalifa City A School - Cycle 1

مدرسة مدينة خليفة أ / حلقة أولى

SCIENCE

CHAPTER 6 -MATTER AND ITS CHANGES

LESSON 2– MEASUREMENT

PART -2

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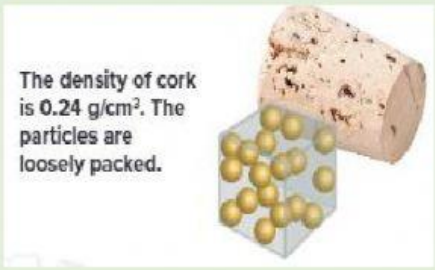
DENSITY

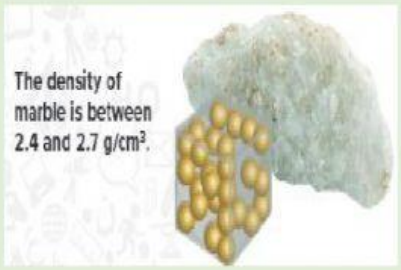
Mass Divided by Volume

The relationship between mass and volume is called density (DEN•suh•tee). **Density** is the mass of the matter in a given space. Scientists define density as the amount of mass in a unit of volume.

$$\text{DENSITY} = \frac{\text{MASS}}{\text{VOLUME}} = \frac{\text{g}}{\text{cm}^3}$$

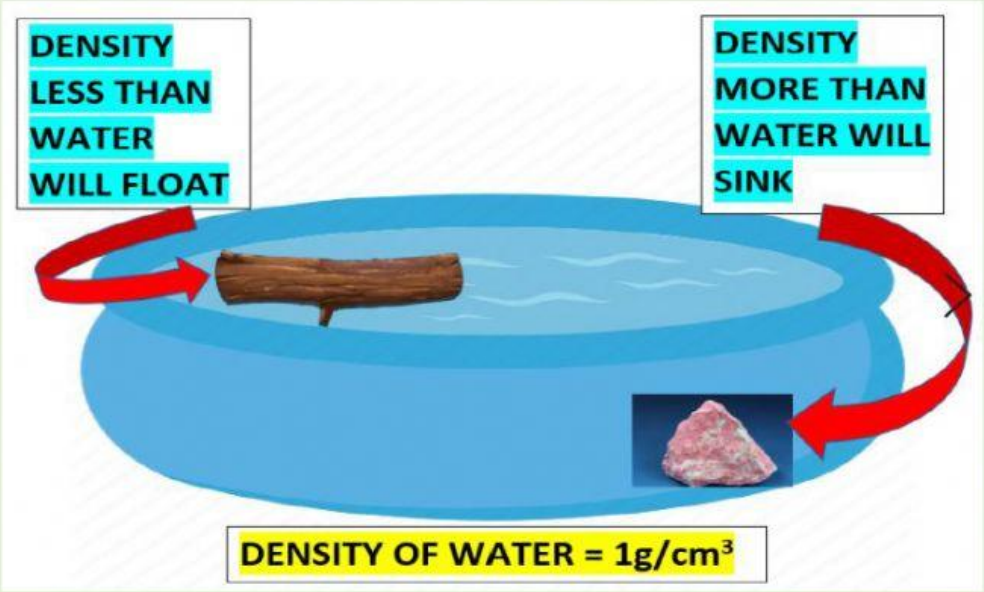
WATCH VIDEO ABOUT DENSITY:





DENSITY AND BUOYANCY

❖ Density of the object affect its buoyancy (ability to float or sink).



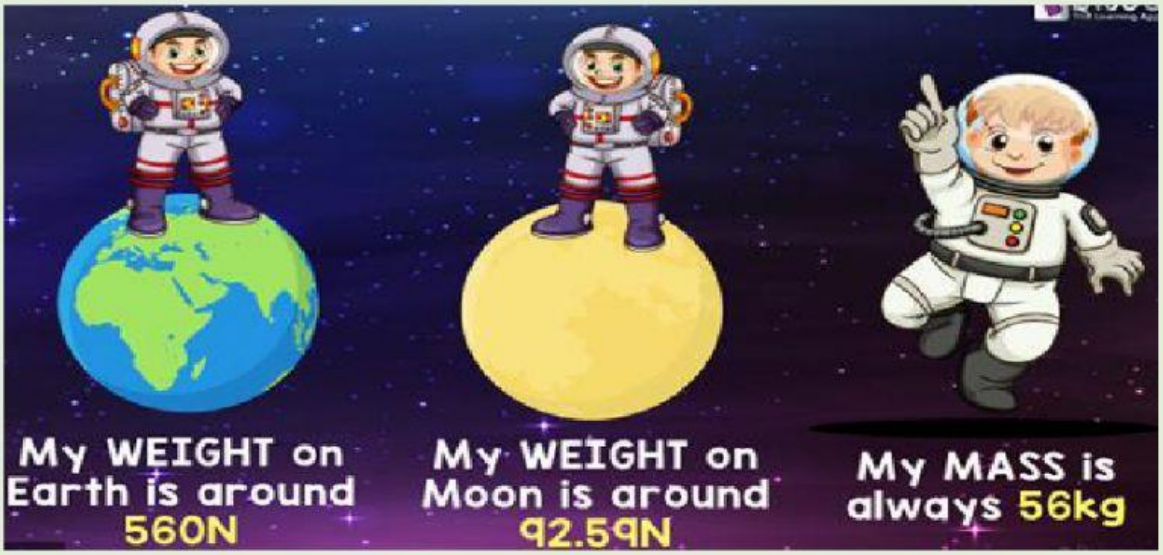
Click here to do lab about density and how it affects buoyancy.

DIFFERENCE BETWEEN MASS AND WEIGHT

- **Mass** is measured in kilograms or grams.
- **Weight** is the force of gravity acting on mass.

Mass and Weight Comparison

Mass	Weight
▪Always stays the same. 	▪Changes with gravitational force. 
▪Measured with a balance. 	▪Measured with a spring scale. 
▪Measured in kilograms. 	▪Measured in Newtons. N
▪Can never be zero.	▪Can be zero.



❖ **Your weight on the moon will be less than on earth. Why?**

- **Moon has less gravity**.

PRACTICE QUESTIONS FROM BOOK

1. What is the density of a cube with a mass of 8 g and volume of 1 cm^3?

A. 0.8 g/cm^3
B. 2 g/cm^3
C. 4 g/cm^3
D. 8 g/cm^3

2. What is the difference between a balance and a scale?

_____

_____

3. **Test Prep.** This property of matter changes depending on the pull of gravity.

A density **C** mass
B length **D** weight

4. An object's ability to float depends on its

A length.
B density.
C volume.
D weight.

5. **The amount of gravity between an object and a planet is**

A volume.
B length.
C weight.
D mass.

6. The measure of gravity's pull between an object and a planet is _____.

7. To calculate an object's _____ you divide its mass by its volume.

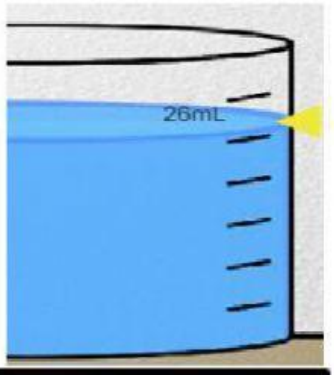
8. The pull between objects is called _____.

9. Consider cork and water. The density of water is 1 g/cm^3. The density of cork is 0.24 g/cm^3. Does cork float or sink? _____

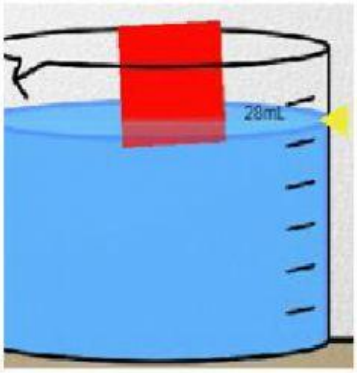
10. Balance is used to measure_____

11. Scale is used to measure _____

12.

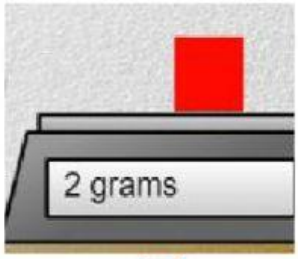


BEFORE: _____



AFTER: _____

VOLUME OF THE OBJECT: _____



MASS OF THE OBJECT: _____

DENSITY= MASS = ___

VOLUME