Lesson Title/Focus	Density	**Date**	November 17, 2025
Grade Level/Subject	Grade 5 Science	**Time Duration**	50 mins.
Unit	Matter	**Teacher**	Miss H

OUTCOMES FROM ALBERTA PROGRAM OF STUDIES			
Organizing Idea: **Guiding Question:** **Learning Outcome:**	**Matter**: Understandings of the physical world are deepened by investigating matter and energy. How can states of matter and other physical properties be explained using the particle model of matter? Students investigate the particle model of matter in relation to the physical properties of solids, liquids, and gases.		
Students will know…		*Students will be able to…*	
Knowledge	**Understanding**	**Skills & Procedures**	

• Physical properties of matter include
  ○ State
  ○ Mass
  ○ Volume
  ○ Density
  ○ compressibility
• Density is a comparison of the mass of a solid, liquid, or gas to its volume.
• The greater the mass of a solid, liquid, or gas as compared to its volume, the higher its density.
• Density can be described comparatively using the phrases denser and less dense.
• Densities can be directly compared by determining
  • the relative mass of objects with the same volume
  • if a liquid sinks or floats when added to another liquid
A solid, liquid, or gas that is less dense than the fluid in which it is placed will float.
	• The movement and arrangement of particles affect the physical properties of matter.	• Directly compare the densities of solid objects that have the same volume.
		• Directly compare the densities of liquids.
		• Relate densities of solids, liquids, and gases using the particle model of matter.
		• Practise safe and appropriate use of materials, tools, and equipment.	

LEARNING OBJECTIVES		
Students will be able to… 1) Identify solids with high and low density 2) Compare and contrast properties of the density of solids 3) Identify solids that will float or sink in water		
ASSESSMENTS		
Products/Performances:	~ check for understanding - high vs. low activity ~ float vs. sink formative activity	
LEARNING RESOURCES CONSULTED	**MATERIALS AND EQUIPMENT**	
• Slides provided by TA • Resource Website	• Float/Sink Simulator • Density & Buoyancy Worksheet	
PROCEDURE		
Introduction		**Time**
Attention Grabber	Morning Routine - how was your weekend?	5 mins
Transition to Body	Presentation Slides 1-5 - Review property of solids from last class - Elbow partners - hypothesize 2 solids that you think will sink *share and write on the board* - What do these things all have in common? – they're likely going to list things that are heavy in weight - Watermelon vs. Golf Ball - Golf Ball vs. Ping Pong Ball - It doesn't have to do with **weight** is it because of **density**	5 mins.
Body		**Time**
Learning Activity #1	*Presentation Slides 6-13 **High vs. Low activity -** physical engagement - students stay seated in their desks or stand beside and use their arms, or done using thumbs up/down	15 mins
Transition to Learning Activity #2	- Have students return to their desk (if out of desk) - close their eyes and imagine they're floating in a pool, are they spread out like a starfish or curled up in a cannonball?	2 mins
Learning Activity #2	Presentation Slides 10-11 The same applies for density! - Particles more spread out (LOW DENSITY) float - Particles close together (HIGH DENSITY) sink - Mention ice Experiment Hypothesis Sheet - put up the simulator, randomly choose 5 students to pick the objects we test as we go - Have students guess which objects will float vs. which ones will sink - Run the simulation!	25 mins

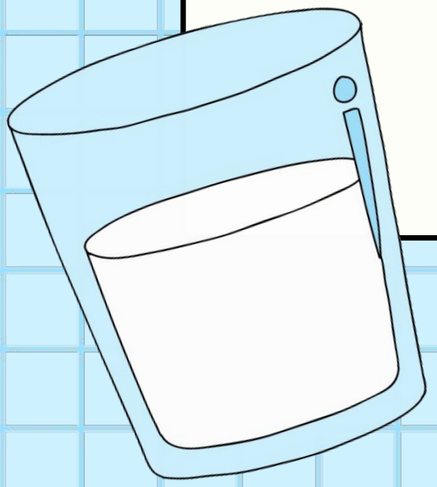
Transition to Closure	Looking back at what we listed before, which of these solids were we right about, and which ones might actually float?	1-2 mins
Closure		**Time**
Wrap up the Lesson	Next class: densities of different liquids	

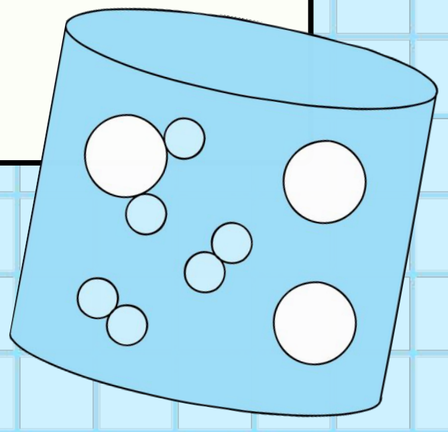
Sponge Activities	Continue with more sink vs. float simulator Wordsearch on the back of the worksheet

Lesson Reflections	Time Management - watch the clock for enough clean up time and consolidation of learning

Grade 5 - Science

Density & Buoyancy

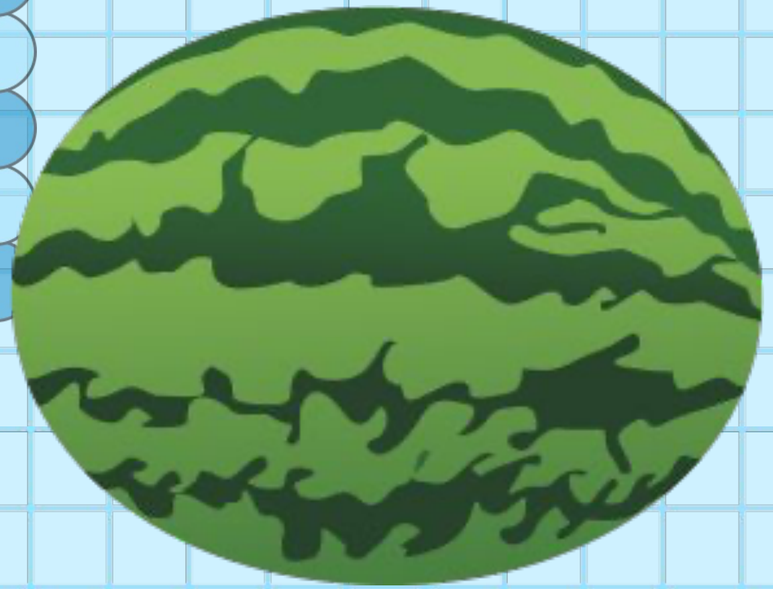




Review

What were some properties of solids we talked about?

Elbow partners! Brainstorm 2 solids that you think would sink if you dropped them in water



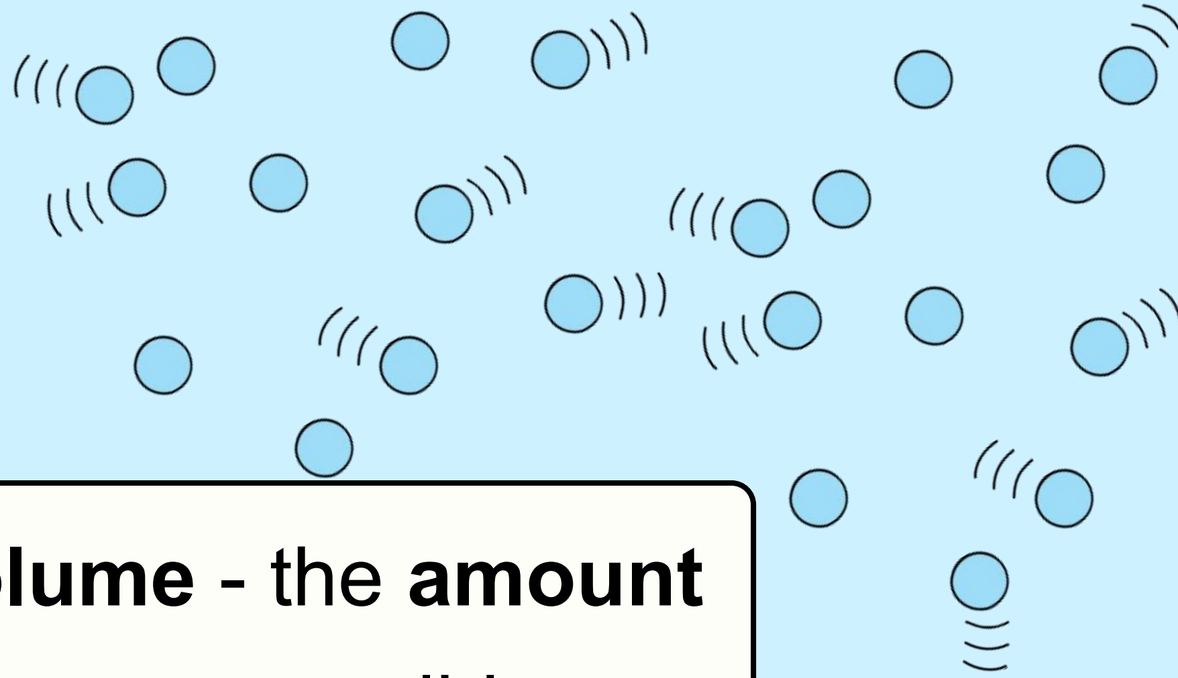
What is Density?

Density is a **property of matter** that describes how tightly packed the particles are

High Density - the particles are tightly packed together

Low Density - the particles are farther apart from one another

What is Density?



Mass - is the **amount of matter** in a solid, liquid, or gas.

Volume - the **amount of space** a solid, liquid, or gas takes up.

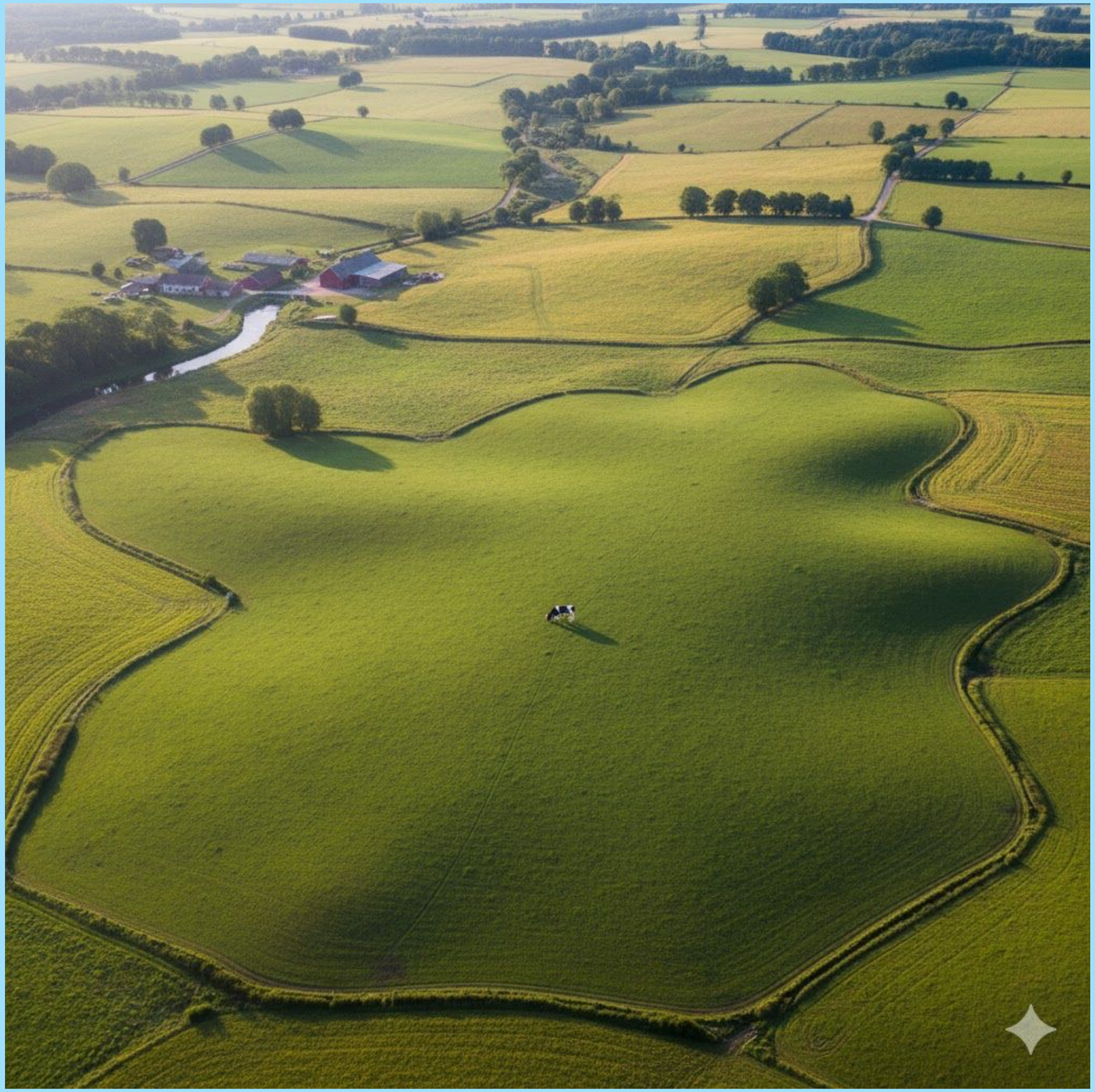
What is Density?

High or Low?

High or Low?

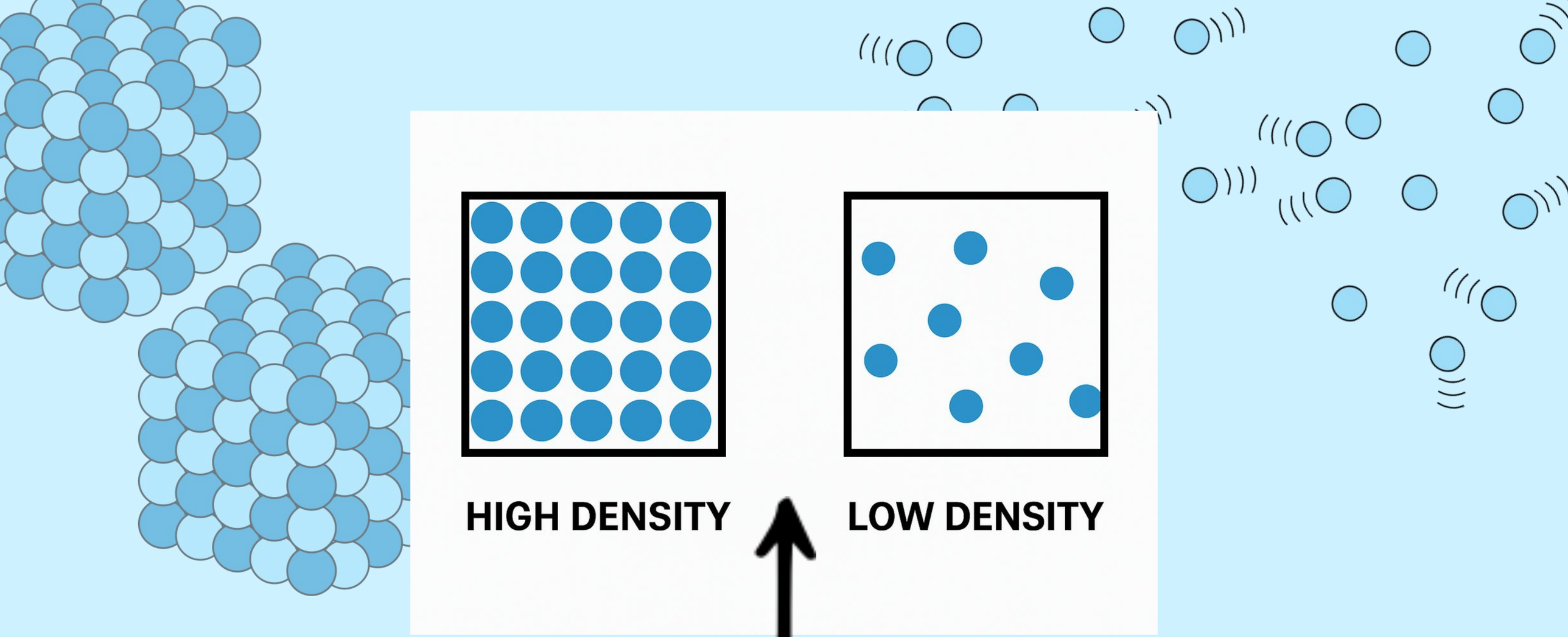
High or Low?

High or Low?



High or Low?

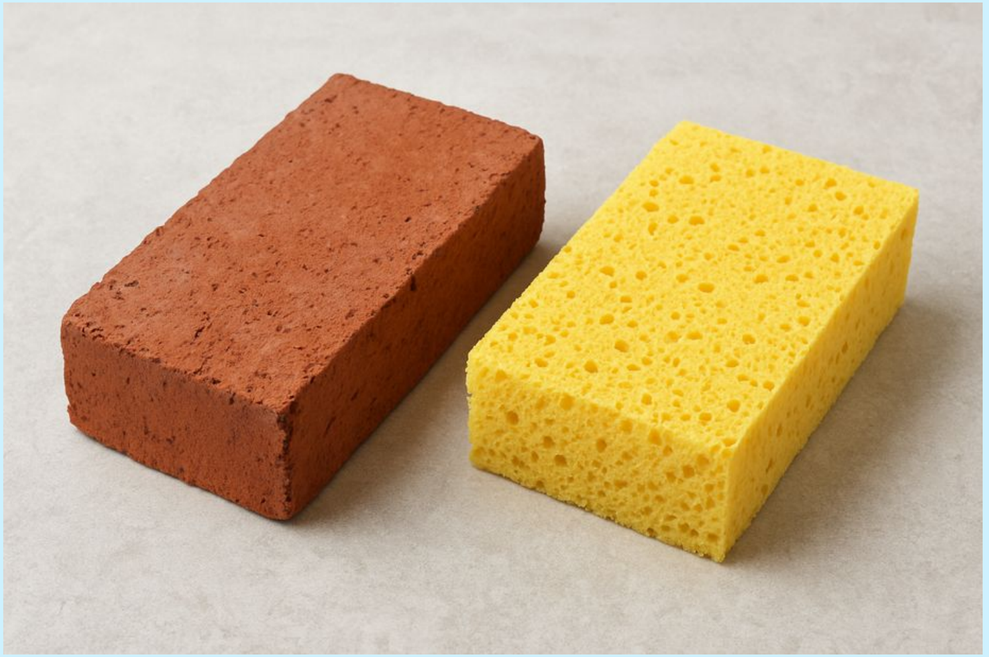
High or Low?



Water is also made of particles so it has a density too. The density of water lives right in between

High Density vs. Low Density

what do we think this means for the weight of a solid?



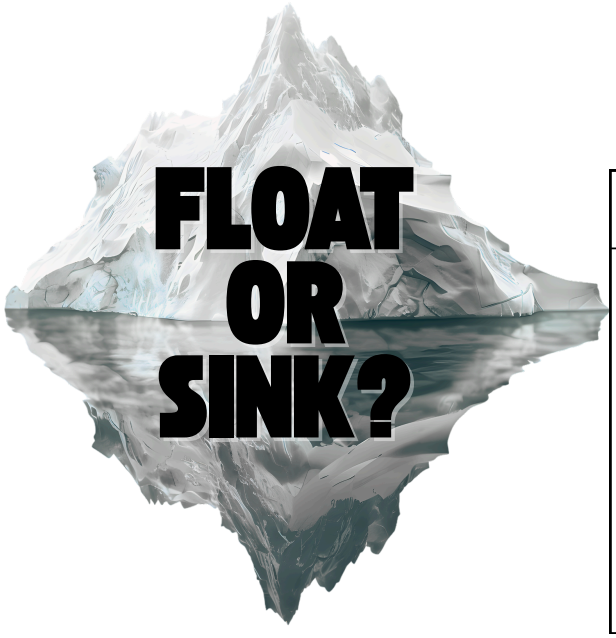
Why do solids float or sink?

If a solid has a LOWER density than water, it will FLOAT. When a something floats, we say that it is **buoyant**.

If a solid has a HIGHER density than water, it will SINK.

We know that ice floats, what does that mean about the density of ice?

Float or Sink?



NAME:_____

LOW DENSITY	HIGH DENSITY
Particles are spaced farther apart from one another	Particles are tightly packed together
will **float**, we say it is <u>buoyant</u>	will **sink**
lightweight for its size	heavy for its size

Hypothesis: Will the solid be buoyant in the water? Fill in the chart with your hypothesis and observations for each solid.

Solid	Hypothesis	Oberservation
	Buoyant?	Buoyant?
	yes: ☐ no: ☐	yes: ☐ no: ☐
	yes: ☐ no: ☐	yes: ☐ no: ☐
	yes: ☐ no: ☐	yes: ☐ no: ☐
	yes: ☐ no: ☐	yes: ☐ no: ☐
	yes: ☐ no: ☐	yes: ☐ no: ☐

Conclusion:

I was right about _____.
I was surprised by _____.

Density ~ Word Search

B M I N V A P L I Q U I D Z W W N U N B
D H Y P O T H E S I S X R Z H C K B Z Q
B R K X V F I B U O Y A N C Y L L T U N
D T A H I T J L S H G A S Q X P C H S Y
H Z P G I I C W I X S R C K R O U G I Y
X D E N S I T Y F Y W B C F K A Z Q N V
X Y I B A I Y L W C V Y W U Y F Q D K J
J S P Y O B S E R V A T I O N W M Q C G
B K V Z Y T X U N X F P L U T F Z K X A
E J B K H V A Q D Q V A G J L C L S N H
G X A N W D H P R Q T R O Z F W Z O N W
R C W I D N W W J S V T D A N R U K A H
H Z H M N S P Y O F L I I L Q E L P R T
U Z E X R W O I Q B O C H N F J O W D W
L W Y U M T M L U P Y L J Y W P U A V P
F M V R E X I T I G P E B U H C O G T X
R C R Q J Q G L I D Z M K W F M Q N L L
A W L A C T J J O X B O F T T I K W M E
C V S K H A H Q K P S J Y U Y U M L C W
V Z Q N V K K P O P S A I Y T A S Y D D

Density **Float** **Hypothesis**

Solid **Sink** **Buoyancy**

Liquid **Observation** **Particle**

Gas