Float, Sink, Compare

Use density to predict how materials behave in different fluids.

6.6.D "compare the density of substances relative to various fluids; and"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each sentence that compares an object's density with a fluid's density. Circle each word that tells whether the object floats or sinks.

A Bead Between Fluids

1 Density compares how much mass is packed into a certain volume. A fluid, such as water or oil, also has density. When an object's density is lower than a fluid's density, it floats. When an object's density is higher than a fluid's density, it sinks. An object can float in one fluid and sink in another.

DENSITY DATA

Material	Density (g/mL)
Vegetable oil	0.92
Water	1.00
Corn syrup	1.38
Wax	0.90
Plastic bead	1.15

2 In the data table, a plastic bead has a density of 1.15 g/mL. It is denser than water but less dense than corn syrup. The bead sinks in water and floats in corn syrup. If the bead is dropped into separate layers of those fluids, it stops at the boundary between them.

3 Wax has a density of 0.90 g/mL, so it floats in vegetable oil, water, and corn syrup. A steel bolt has a density of about 7.8 g/mL. It is denser than every fluid in the table, so it sinks in each one. The fluid used changes which materials float or sink.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does the plastic bead's density compare with the density of water and corn syrup?

2. Predict what wax does in vegetable oil. Use the two density values to explain your prediction.

3. What happens when a steel bolt is placed in corn syrup? Why?

4. Predict what happens if the plastic bead is placed in vegetable oil. Compare their densities in your answer.

3 YOUR TURN

Your own words

Create three density trials of your own. For each row, give an object and a fluid with density values, compare the values, and predict whether the object floats, suspends, or sinks.

OBJECT AND DENSITY	FLUID AND DENSITY	DENSITY COMPARISON	PREDICTION

ANSWER KEY

Float, Sink, Compare

GRADE 6 · TEKS 6.6.D

PART 1 · READ AND MARK

Underline each sentence that compares an object's density with a fluid's density. Circle each word that tells whether the object floats or sinks. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does the plastic bead's density compare with the density of water and corn syrup?	**The bead is denser than water and less dense than corn syrup.**
2	Predict what wax does in vegetable oil. Use the two density values to explain your prediction.	**Wax floats in vegetable oil because wax, 0.90 g/mL, is less dense than vegetable oil, 0.92 g/mL.**
3	What happens when a steel bolt is placed in corn syrup? Why?	**The steel bolt sinks because its density, about 7.8 g/mL, is greater than corn syrup's density, 1.38 g/mL.**
4	Predict what happens if the plastic bead is placed in vegetable oil. Compare their densities in your answer.	**The bead sinks because its density, 1.15 g/mL, is greater than vegetable oil's density, 0.92 g/mL.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

OBJECT AND DENSITY	FLUID AND DENSITY	DENSITY COMPARISON	PREDICTION
Cork, 0.24 g/mL	Water, 1.00 g/mL	Cork is less dense.	Floats
Test bead, 1.20 g/mL	Salt water, 1.20 g/mL	The densities are equal.	Suspends
Glass marble, 2.50 g/mL	Water, 1.00 g/mL	Marble is more dense.	Sinks

Accept correct comparisons using less dense, more dense, or equal density, with a matching float, sink, or suspend prediction. Density values in student-created trials may vary if each prediction matches the comparison.