

Name: _____ Date: _____

What is an Ocean Engineer?

Draw and label a picture of an ocean engineer at work.



Explain your drawing of an ocean engineer:

Name: _____ Date: _____

What is an Ocean Engineer?

B

Draw a picture of an ocean engineer at work. Label your picture.



Name: _____ Date: _____

*Directions: For questions 1 and 2 below, circle the **BEST** answer.*

1. What is an ocean engineer MOST LIKELY to do for his or her job?

- A. design a playground on the beach
- B. study animals that live in the Ocean
- C. scuba dive to search for sunken treasures
- D. improve instruments to collect data underwater

2. An ocean engineer would probably help to design:

- A. a cargo ship.
- B. a submarine.
- C. an underwater microphone.
- D. all of the above.

3. What might an ocean engineer do to help scientists learn about fish that live in deep water?

Name: _____ Date: _____

Directions: Decide whether each statement below is TRUE (T) or FALSE (F) and circle your answer.

At work, ocean engineers drive boats to bring scientists to where fish live.	T	F
At work, ocean engineers scuba dive for sunken treasures.	T	F
An ocean engineer would help to design a cell phone.	T	F
At work, ocean engineers would invent a new kind of submarine.	T	F
At work, ocean engineers design things for exploring the Ocean.	T	F
All ocean engineers need to know how fish breathe.	T	F
An ocean engineer would help to design a boat.	T	F
At work, ocean engineers invent things that work underwater.	T	F
An ocean engineer would help to figure out how deep the Ocean is.	T	F
An ocean engineer would fix boat engines.	T	F
An ocean engineer would help to design a globe.	T	F
Some ocean engineers need to know how water moves in the Ocean.	T	F

Name: _____ Date: _____

Directions: For each question below, write your answer in the space provided.

1. List 2 examples of a technology designed by ocean engineers to explore the Ocean:

(1) _____

(2) _____

2. A scientist is on a ship in the Ocean.

List 2 things the scientist can figure out using SONAR.

(1) _____

(2) _____

3. What could you do to figure out where a pond is exactly five feet deep if you don't have SONAR?

Name: _____ Date: _____

*Directions: For the questions below, circle the **BEST** answer.*

1. Which objects always sink in water? Objects that are:

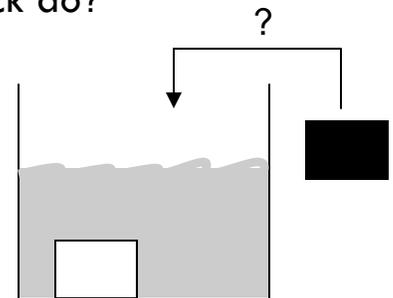
- A. very heavy.
- B. made of metal.
- C. denser than water.
- D. all of the above.

2. To figure out how dense an object is, you need to know:

- A. its mass and volume.
- B. its shape and weight.
- C. its mass and hardness.
- D. its texture and hardness.

3. The black block is more dense than the white block. The white block sinks in a tub of water. What will the black block do?

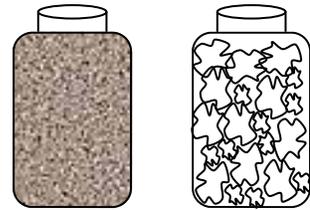
- A. float at the top of the water
- B. sink to the bottom of the tub
- C. float below the surface of the water
- D. there is no way to know what will happen



Name: _____ Date: _____

*Directions: For the questions below, circle the **BEST** answer.*

1. A student has 2 plastic bottles that are exactly the same. One is full of sand and the other is full of popped corn. Which is more dense?



- A. the bottle filled with sand
 - B. the bottle filled with popped corn
 - C. both are the same density
 - D. there is no way to know
2. A jar of rocks sinks in a tub of water. What could you do to make it float?
- A. add more water to the tub
 - B. put the rocks in a larger jar
 - C. put the rocks in a smaller jar
 - D. it is not possible for a jar of rocks to float
3. The best way to get a submersible to float is to change its:
- A. shape.
 - B. weight.
 - C. density.
 - D. volume.

Name: _____ Date: _____

A

B

Directions: Decide whether each statement below is TRUE (😊 T) or FALSE (☹ F) and circle your answer.

Metal objects always sink.	😊 T	☹ F
Plastic objects never sink.	😊 T	☹ F
Heavy objects can float.	😊 T	☹ F
Wood can float.	😊 T	☹ F
Large ships don't sink in the Ocean because they keep moving.	😊 T	☹ F
A jar with rocks in it can never float.	😊 T	☹ F
A jar with feathers in it can never sink.	😊 T	☹ F
Things made of rock can float in water.	😊 T	☹ F
It is possible to make a jar of rocks float by attaching it to a jar full of air.	😊 T	☹ F

Name: _____ Date: _____

A student is dropping some bottles of marbles into a water tank to see if they sink or float. The large bottle has twice the volume of the small bottle. Both bottles are made of the same materials. The table shows what she has found so far.

Container	Filling	Looks like	Result
Small Bottle	100 marbles		Floats
Small Bottle	200 marbles		Sinks
Large Bottle	400 marbles		Sinks
Large Bottle	200 marbles		????

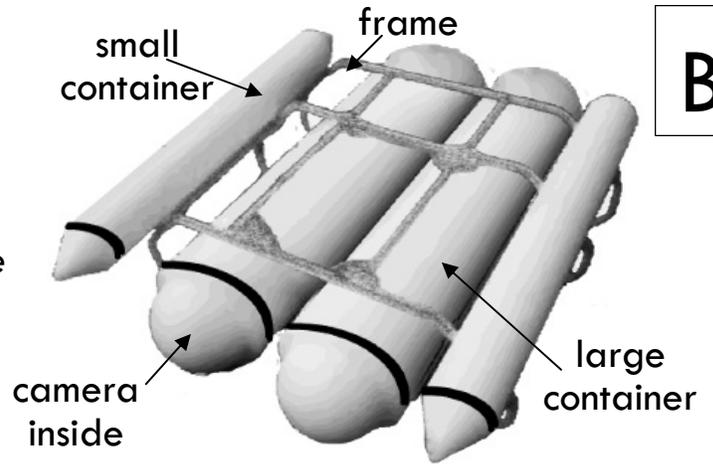
1. Which of the following is true, based on the data?
 - A. The more full a bottle is, the more likely it is to sink.
 - B. The more empty a bottle is, the more likely it is to sink.
 - C. Smaller bottles of marbles are more likely to float than larger bottles of marbles.
 - D. Larger bottles of marbles are more likely to float than smaller bottles of marbles.

2. What do you predict will happen to the large bottle with 200 marbles? Will it sink or float? Explain your answer.

Name: _____ Date: _____

Some students are designing a submersible to take underwater pictures. Their first design didn't work because it sank.

Directions: Redesign the submersible so that it will float. You can sketch your ideas on the back.



B

Draw your design plan in the box below. Label the parts.

Name: _____ Date: _____

What is an Ocean Engineer?

Draw and label a picture of an ocean engineer at work.

A good picture would show someone working to solve problems related the Ocean.

Examples include: designing a new kind of submarine or underwater camera, designing new instruments to figure out how deep the Ocean is, etc.

Explain your drawing of an ocean engineer:

Answers will vary, but may include: Someone who combines his or her creativity and knowledge of science, math, and the Ocean to design technologies that solve problems related to the Ocean.

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2. An ocean engineer would probably help to design:

- A. a cargo ship.
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- D. all of the above.

3. What might an ocean engineer do to help scientists learn about fish that live in deep water?

Answers will vary, but may include: Create a device to keep track of where the fish swim, design an underwater camera to take pictures of the fish, etc.

Name: _____ Date: _____

Answer Key

Directions: Decide whether each statement below is TRUE (T) or FALSE (F) and circle your answer.

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An ocean engineer would help to design a globe.	T	F
Some ocean engineers need to know how water moves in the Ocean.	T	F

Name: _____ Date: _____

Directions: For each question below, write your answer in the space provided.

1. List 2 examples of a technology designed by ocean engineers to explore the Ocean:

Possible examples include: SONAR, sounding, submersibles, etc.

2. A scientist is on a ship in the Ocean.

List 2 things the scientist can figure out using SONAR.

Answers will vary, but may include: how deep the ocean is, if the ocean bottom is sandy or rocky, whether there is a sunken ship at the ocean bottom, etc.

3. What could you do to figure out where a pond is exactly five feet deep if you don't have SONAR?

Use a stick to measure the depth in several different areas.

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Directions: For the questions below, circle the **BEST** answer.

1. Which objects always sink in water? Objects that are:

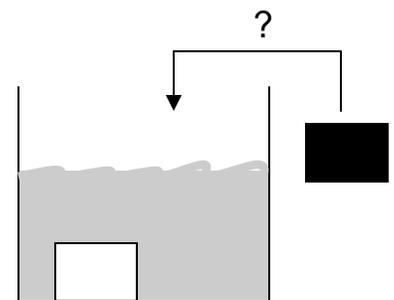
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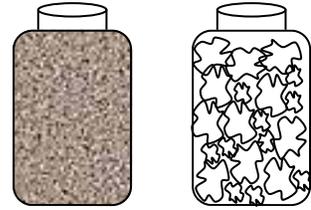
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3. The best way to get a submersible to float is to change its:
- A. shape.
- C. density.
- B. weight.
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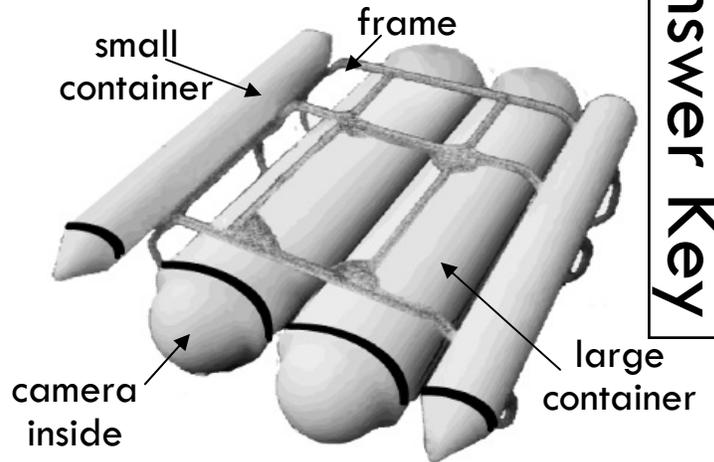
2. What do you predict will happen to the large bottle with 200 marbles? Will it sink or float? Explain your answer.

It will float because it has a lot of empty space (air) inside. The large bottle half-full with 200 marbles will float, just like the small bottle half-full with 100 marbles, because they have the same density.

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Some students are designing a submersible to take underwater pictures. Their first design didn't work because it sank.

Directions: Redesign the submersible so that it will float. You can sketch your ideas on the back.



Answer Key

You need to choose material(s) to use to make your submersible. List 2 properties that the material(s) should have.

Answers will vary, but may include: the material(s) should be lightweight, hollow, not very dense, etc.

Why are these properties important?

Answers will vary, but may include: The best way to get a submersible to float is to change its density. This can be done by decreasing the mass (using a lighter material) and/or adding more volume (using a hollow material).

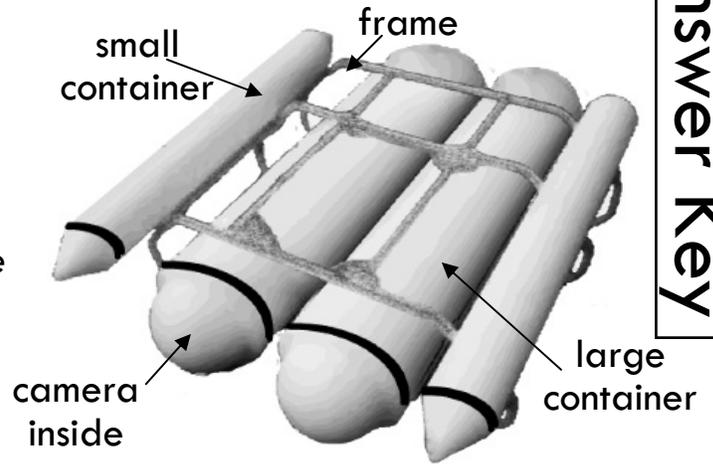
Draw your design plan in the box below. Label the parts.

A good picture would show some way to decrease the density of the submersible. This may include making it out of a lighter material, tying empty containers to the submersible to increase the volume, etc.

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A good picture would show some way to decrease the density of the submersible. This may include making it out of a lighter material, tying empty containers to the submersible to increase the volume, etc. It should also have the parts labeled. Give extra points for including a materials list.