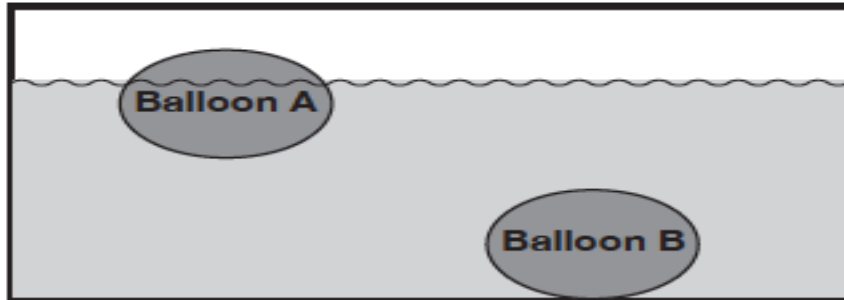


NAME: _____ **DATE:** _____

1. Which of the following statements about ocean currents is correct?
 - a. Surface ocean currents are mostly caused by wind.
 - b. Deep ocean currents are mostly caused by wind.
 - c. Surface ocean currents are caused by deep colder water rising to the surface.
 - d. Deep ocean currents are caused by warmer ocean water sinking below the surface.

2. Places that are surrounded by the ocean tend to have temperatures that do not change as much during the year compared with places that are surrounded by land. Oceans keep temperatures more stable because:
 - a. oceans have very salty water.
 - b. millions of microscopic organisms live in the ocean.
 - c. oceans absorb heat energy from the Sun and release it very slowly.
 - d. oceans absorb heat energy from the Sun and release it very quickly.

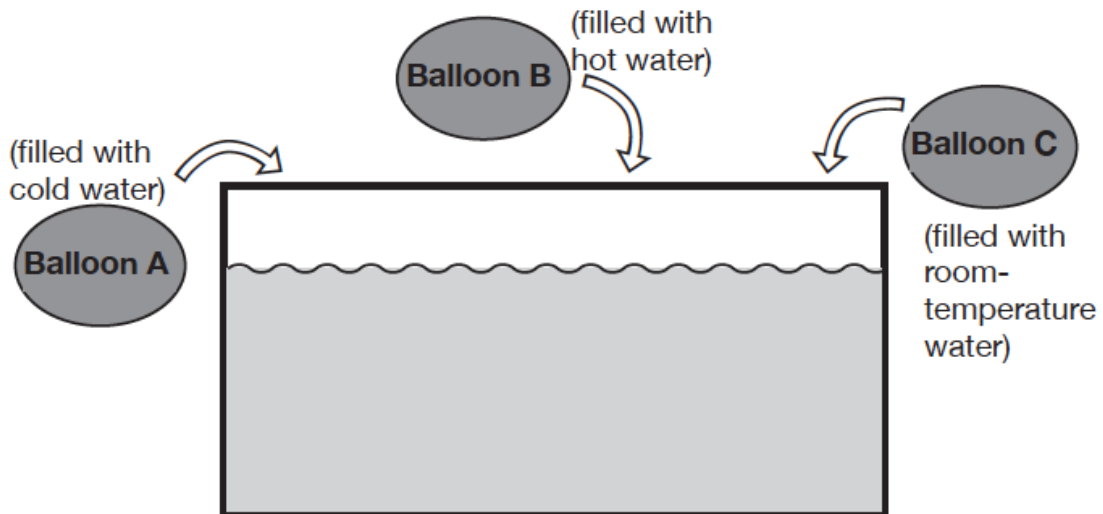
3. Which one of the following conditions most often causes clouds and precipitation to form?
 - a. Air sinking
 - b. Air rising
 - c. Air warming
 - d. Air moving east to west



4. Look at the diagram above. Two balloons filled with freshwater have been put into a tank of freshwater. Balloon A floats near the surface, and balloon B sinks to the bottom of the tank. What must be true about balloon A?
- Balloon A is denser than balloon B.
 - Balloon A is the same density as balloon B.
 - Balloon A is less dense than balloon B.
 - There is no way to tell anything about the density of balloon A.



5. A student put some hot water in a cup and then covered the cup with plastic and put an ice cube on top. Why did droplets of water collect on the bottom side of the plastic cover?
- The hot liquid water pushed upward in the cup.
 - The water melted out of the plastic lid.
 - The plastic lid attracted the water.
 - The water vapor cooled and condensed.

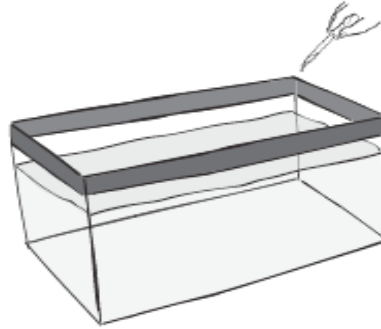


6. Look at the diagram above. What will happen when these three water balloons are dropped into the tank of room-temperature water?

- a. Balloon A will float the highest.
- b. Balloon B will float the highest.
- c. Balloon C will float the highest.
- d. All the balloons will float at the same depth.

7. Which of these gases is not a greenhouse gas?

- a. Nitrogen
- b. Methane
- c. Water vapor
- d. Carbon dioxide



	Temperature	Salinity
Water in tank	Cold (10°C)	Very salty
Drops of green-colored water	Very hot (38°C)	Fresh

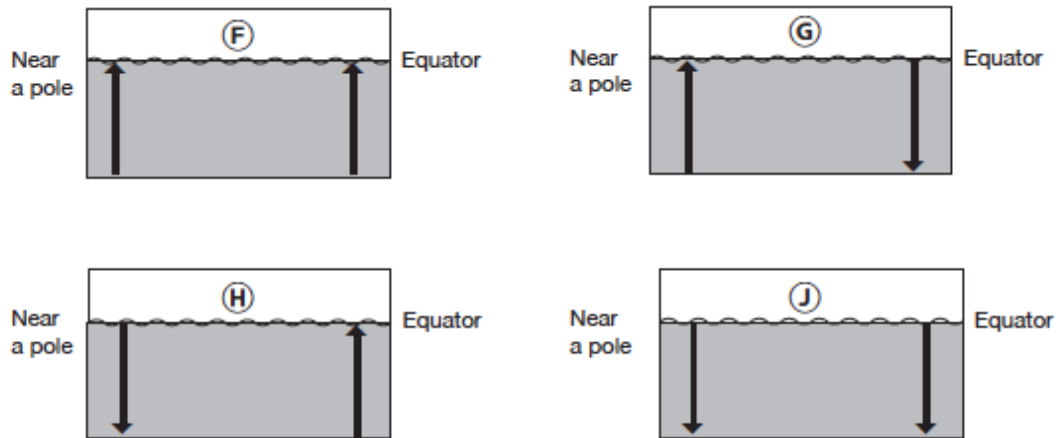
8. Look closely at the chart and drawing above. Many drops of green-colored water are carefully added to the tank of clear water so the water in the tank is not disturbed. What will happen to drops of green-colored water when they are added to the tank?

- a. They will sink to the bottom of the tank.
- b. They will stay on the surface of the water.
- c. They will mix with the water in the tank right away.
- d. They will move to the middle of the tank.

9. Greenhouse gases are making Planet Earth warmer because

- a. these gases cause more sunlight to enter into the Earth system.
- b. these gases cause more sunlight to reflect away from the Earth system.
- c. these gases cause less infrared energy to radiate from the Earth system.
- d. these gases cause more infrared energy to radiate from the Earth system.

10. Look at the diagram below.

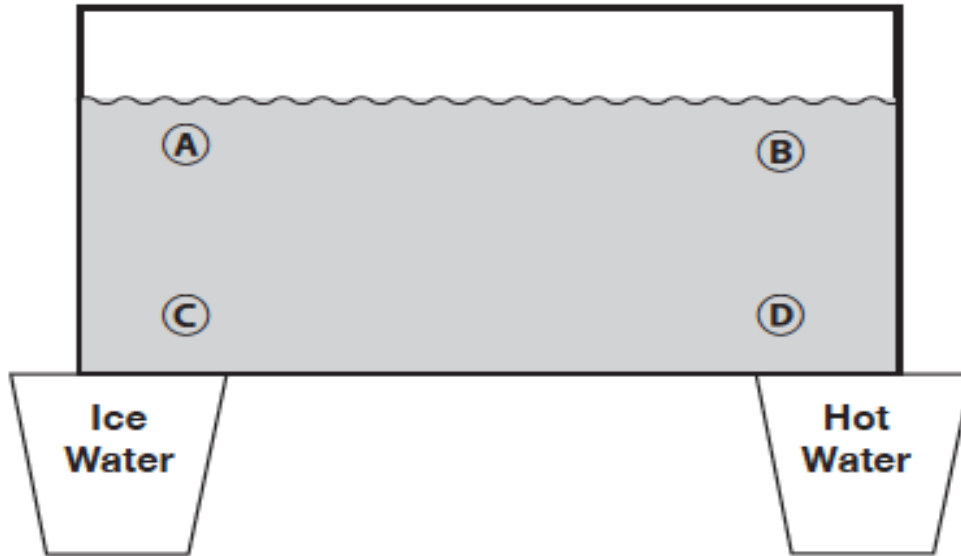


Which of the tanks best shows where water usually rises and sinks in the ocean?

- a. Tank F
- b. Tank G
- c. Tank H
- d. Tank J

11. The temperature of an object increased when light shined on it. This increase in temperature indicates that:

- a. absorption of the light occurred.
- b. reflection of the light occurred.
- c. transmission of the light occurred.
- d. absorption, reflection and transmission occurred.

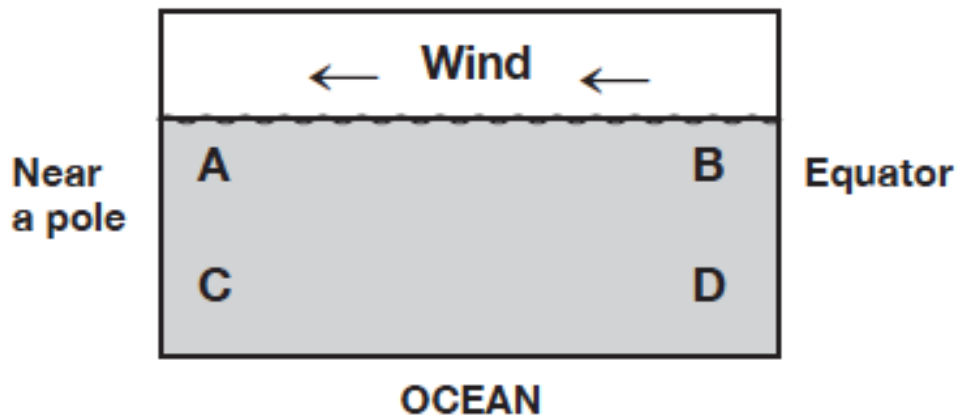


12. Look closely at the diagram above. A bucket of ice water and a bucket of hot water are placed underneath a tank of room temperature water.

Use arrows to draw in the tank the path that the water will move within the tank.

13. Which of these statements is correct?

- a. The ozone hole is a major cause of global warming.
- b. Global warming is a major cause of the ozone hole.
- c. The ozone hole and global warming cause and reinforce each other.
- d. The ozone hole is not a major cause of global warming, and global warming is not a major cause of the ozone hole.

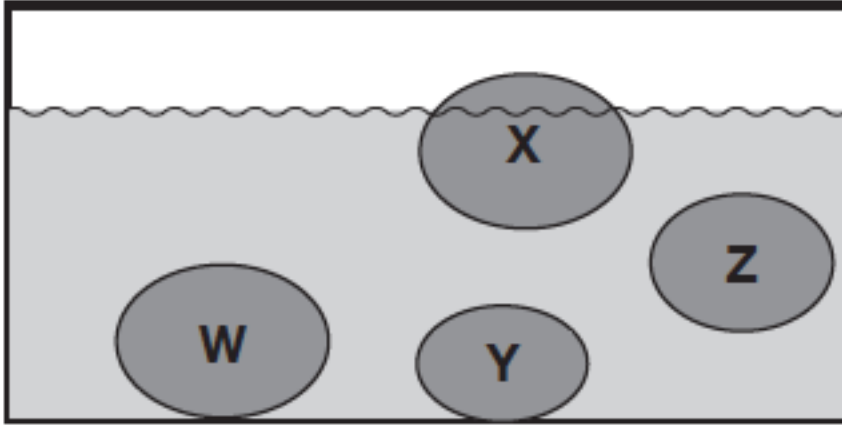


14. Which of the following is most likely to happen as a result of wind and temperature differences in the parts of the ocean pictured above?

- a. Water at *A* will sink and move across the bottom toward the equator.
- b. Water at *B* will sink and move across the bottom toward the pole.
- c. Water at *C* will rise and move across the surface toward the equator.
- d. Water at *D* will move across the bottom toward the pole and rise.

15. Heat energy flows away from rocks that have been heated by the sunlight. This movement of heat energy is an example of:

- a. conduction
- b. convection
- c. absorption
- d. radiation



16. Look closely at the picture above. Balloons filled with water are put in a tank of water. Which balloon or balloons are the least dense?

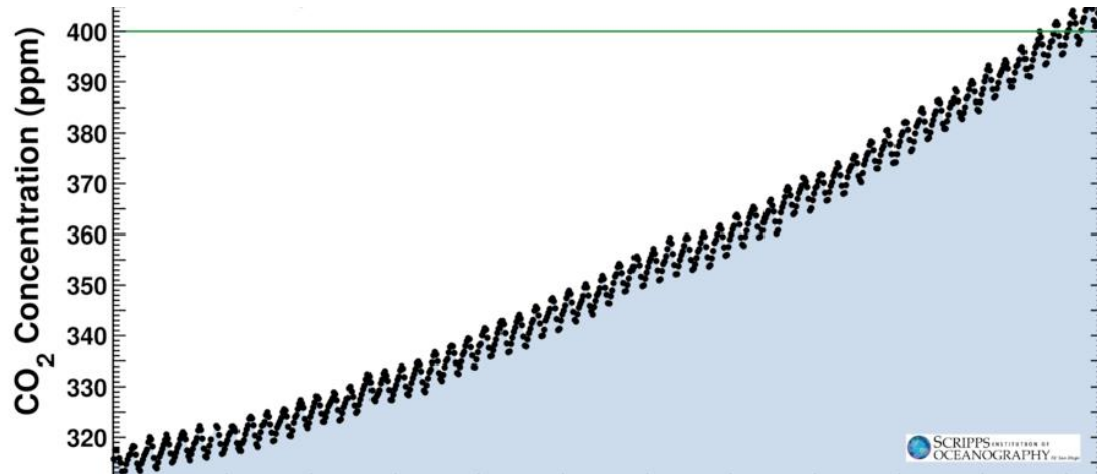
- a. balloons W and Y
- b. balloon X
- c. balloon Y
- d. balloon Z

17. Look at the following data about the Earth and an imaginary planet, Zoran. Earth and Zoran are similar in most ways but their atmospheres are very different.

	EARTH	ZORAN
Nitrogen in atmosphere	80% nitrogen	94% nitrogen
Oxygen in atmosphere	20% oxygen	5% oxygen
Ozone Layer	Has an ozone layer	No ozone layer
CO₂ in atmosphere	0.04% CO ₂	1.2% CO ₂

Zoran is likely to have a much warmer global climate than Earth because

- a. Zoran has more nitrogen in its atmosphere.
- b. Zoran has less oxygen in its atmosphere.
- c. Zoran does not have an ozone layer in its atmosphere.
- d. Zoran has more carbon dioxide in its atmosphere.



18. The graph above shows how carbon dioxide concentration in Earth's atmosphere has changed over time. The time period shown in the graph probably represents about

- a. 70 years
- b. 700 years
- c. 70,000 years
- d. 7,000,000 years

19. Draw three lines to connect each phrase in Column A with a phrase in Column B:

Column A

Energy

Matter

Life

Column B

Cycles

Webs

Flows

20. Describe and explain two factors that cause tropical Pacific islands to have a warm and humid climate.

21. Draw and label a model of Earth's current carbon cycle showing the main carbon reservoirs and the flows of carbon into and out of the atmosphere.

22. Draw and label a model showing the flows of energy into and out of the Earth system. Refer to the model to explain the main cause or causes of global warming.