

Student's Name _____

THINKING WITH SCIENCE

Observation Quiz

Lesson 14 (The Collapsing Can)

1. The manipulated variable in this experiment was:
 - A. pressure
 - B. water
 - C. the cans
 - D. density

2. If there is more than 1 manipulated variable in an experiment, then you can't tell:
 - A. What caused the result.
 - B. What the controlled variables are.
 - C. How to set it up.
 - D. All of the above.

3. A condition that tells you whether a conclusion is reliable and valid is:
 - A. Whether it is supported by the data.
 - B. Whether it is refuted by the data.
 - C. Neither of the above.
 - D. Both of the above.

4. After steam was seen coming out of can B, the next step was to:
 - A. Put the cap on.
 - B. Take it off the hotplate.
 - C. Let it cool.
 - D. None of the above.

5. What is the reason for wearing goggles during this experiment:
 - A. The light is blinding.
 - B. Steam could scald your hands.
 - C. You could be blinded if it exploded.
 - D. None of the above.

6. How long should you cool the cans?
 - A. Until they are not warm.
 - B. Until B is dented.
 - C. Until A expands.
 - D. Until no steam is coming out.

7. When air is heated, it:

- A. collapses.
- B. turns into steam.
- C. contracts.
- D. expands.

8. Air pressure at sea level is:

- A. 14 ppsi
- B. 12 ppsi
- C. 0 ppsi
- D. none of the above.

9. A space with nothing in it is:

- A. a vacuum
- B. empty
- C. found to have 0 ppsi
- D. All of the above.

10. When you cool steam, it:

- A. condenses.
- B. turns into liquid water.
- C. contracts.
- D. All of the above.

11. The primary cause of can B collapsing was:

- A. pressure
- B. density
- C. sucking
- D. expanding

12. How much does a column of air weigh if it is 63 miles deep and one square inch across?

- A. 0 pounds.
- B. 63 pounds.
- C. 14 pounds.
- D. nothing.

13. The thick suits that the astronauts wear on space walks are mainly for the purpose of:

- A. keeping warm.
- B. keeping dry.
- C. keeping the right air pressure.
- D. keeping them from floating into space.

14. The main reason why everyone in a plane flying at 35,000 feet would die if a bullet puncture the cabin would be:

- A. The cabin pressure would go down.
- B. They would freeze to death.
- C. They couldn't get enough oxygen.
- D. All of the above.

15. Why are terrorists so dangerous?

- A. They don't care whether they die.
- B. They are religious fanatics.
- C. They are determined.
- D. All of the above.

16. The Eustachian tube connects:

- A. the outer ear with the middle ear.
- B. the inner ear with the middle ear.
- C. the middle ear with the throat.
- D. the inner ear with the throat.

17. You don't hear very well if;

- A. the eardrum is tight.
- B. the pressure on the eardrum is unequal on the inside and outside.
- C. your Eustachian tube is plugged with mucus.
- D. All of the above.

18. If you put the cap on a plastic water bottle, and then take it high in the mountains, it will:

- A. collapse.
- B. expand.
- C. break.
- D. get smaller.

19. The "tennis shoe bomber" had enough plastic explosives in his shoe to:

- A. blow up the plane.
- B. cause a hole in the side of the plane.
- C. kill everyone seated around him.
- D. kill himself.

20. Why were cans A and B heated for the same amount of time?

- A. so there wouldn't be 2 manipulated variables.
- B. because it had to be a controlled variable.
- C. both of the above.
- D. neither of the above.

Students's Name ANSWER Key

OBSERVATION QUIZ FOR "THINKING WITH SCIENCE"

Quiz for Lesson 14

Quiz Number _____

1. A ☒ B C D E
2. ☒ A B C D E
3. A B C ☒ D E
4. ☒ A B C D E
5. A B ☒ C D E
6. A ☒ B C D E
7. A B C ☒ D E
8. ☒ A B C D E
9. A B C ☒ D E
10. A B C ☒ D E
11. A ☒ B C D E
12. A B ☒ C D E
13. A B ☒ C D E
14. ☒ A B C D E
15. ☒ A B C D E
16. A B ☒ C D E
17. A B C ☒ D E
18. A ☒ B C D E
19. A ☒ B C D E
20. A B ☒ C D E