

ameworks Code)

Text Pages 4 - 9*Read the following statements and then answer the questions that follow:*

- a. You and a friend are walking along a beach in Maine on January 15, at 8:00 AM.
- b. You notice a thermometer on a nearby building reads - 1 °C.
- c. You also notice that there is snow on the roof of a nearby building and icicles hanging from the roof.
- d. You further notice a pool of sea water in the sand near the ocean shore.
- e. Your friend looks at the icicles and the pool and says, "How come the water on the roof is frozen and the sea water is not?"
- f. You answer, "I think that the salt in the sea water keeps it from freezing at - 1 °C."
- g. You go on to say, "And I think under the same conditions, the same thing will happen tomorrow."
- h. Your friend asks, "How can you be sure?" You answer, "I'm going to get some fresh water and some salt water and expose them to a temperature of - 1 °C and see what happens."

◇ Questions1. In which statement is a **prediction** being made? _____2. Which statement identifies a **problem**? _____3. In which statement is an **experiment** described? _____4. Which statement contains a **hypothesis**? _____5. Which statements contains **data**? _____6. Which statements describe **observations**? _____

Worksheet: Performing an Experiment

ameworks Code)

Text Pages 4 - 9

Read the following statements and then answer the questions.

- a. A scientist wants to find out why sea water freezes at a lower temperature than salt water.
- b. The scientist goes to the library and reads a number of articles about the physical properties of solutions.
- c. The scientist also reads about the composition of sea water.
- d. The scientist travels to a nearby beach and observes the conditions there. The scientist notes the taste of sea water and other factors such as waves, wind, air pressure, temperature, and humidity.
- e. After considering all this information, the scientist sits at a desk and writes, "If sea water has salt in it, it will freeze at a lower temperature than fresh water."
- f. The scientist goes back to the laboratory and does the following:
 1. Fills each of two beakers with 1 liter of fresh water.
 2. Dissolves 35 g of table salt in one of the beakers.
 3. Places both beakers in the freezer at a temperature of -1°C and leaves them for 24 hours.
- g. After 24 hours, the scientist finds the fresh water to be frozen. The salt water is still a liquid.
- h. The scientist writes in a notebook, "It appears that the salt water will freeze at a lower temperature than fresh water does."
- i. The scientist continues, "I suggest that the reason sea water freezes at a lower temperature is that sea water contains dissolved salts, while fresh water does not."

◇ Questions

1. Which statement(s) contain **conclusions**?
2. Which statement(s) contain a **hypothesis**?
3. Which statement(s) contain **observations**?
4. Which statement(s) describe an **experiment**?
5. In which statement is the **problem** described?
6. Which statement(s) contain **data**?
7. What is the **manipulated variable** in the experiment?
8. What is the **responding variable** in the experiment?
