

Building Scientific Knowledge—Additional Practice

- Classify each of the following statements as primarily empirical knowledge (E) or primarily theoretical knowledge (T).
 - A yellow solid forms when two solutions are mixed. _____
 - When 3 g of calcium chloride is added to water, the temperature of the water increases by 5°C. _____
 - For a chemical reaction to take place, molecules must bump into each other under optimum conditions. Chemical reactions occur faster at higher temperatures because molecules possess more kinetic energy and move faster. Since they move faster, they are more likely to bump into each other, which may result in a reaction. _____
 - In winter, as the temperature decreases, the molecules in the air in a tire move more slowly. Therefore, they do not bump into the inside wall of the tire as often as they would if they were in a hot environment. _____
 - Atoms rearrange themselves during a chemical reaction in order to form new products. _____
 - Ice melts at 0°C. _____
- Write a statement of observation and a statement of inference for each of the following situations:
 - A forensic investigator probes the possibility of arson at a burned building.

Observation:

Inference:
 - A cashier is short of funds at the end of a shift.

Observation:

Inference:
 - A student receives a high grade on the last unit test.

Observation:

Inference: