

Name _____

Period _____

Date _____

HYPOTHESIZING

Forming Hypotheses

While an inference is a tentative explanation based on observations and prior knowledge, a **hypothesis** is a tentative explanation for an observation or scientific problem written in a special way that leads to further investigation. You can write a hypothesis in the form of an “If . . . , then . . . , because . . .” statement. Keep in mind these important points about hypotheses:

- The results of an experiment cannot prove that a hypothesis is correct. Rather, the results either support or do not support the hypothesis.
- You can gain valuable information even when your results do not support your hypothesis.
- In science, a hypothesis is supported only after many scientists have conducted many experiments and produced consistent results.

1. Some eighth graders investigated the following hypothesis:

If you compare hand brakes and coaster brakes on the same bicycles, then the hand brakes will be more effective at stopping the bikes quickly, because they apply pressure directly to wheel hubs.

They tested four bicycles that each had both types of brakes, riding them at exactly 15 km/h before applying the brakes. The students collected the following results:

Table 1. Stopping Distance

Bike	Hand Brake Stopping Distance (m)	Coaster Brake Stopping Distance (m)
A	1.89	2.10
B	0.93	1.05
C	1.32	1.29
D	0.76	0.64

a. Did their results support or refute their hypothesis. Explain.

Full Sentences

Name _____

Period _____

Date _____

1. What do you conclude from the student's experiment?

2. Write three inferences and three hypotheses from the following observation. Remember to use the "If . . . , then . . . , because . . ." format when writing each hypothesis.

Observation: The printer on a computer suddenly stopped working.

Inference 1: _____

Hypothesis 1: _____

Inference 2: _____

Hypothesis 2: _____

Inference 3: _____

Hypothesis 3: _____

Challenge Compare and contrast inferences and hypotheses. *Write at least 3 sentences.*
