

The Scientific Method Extra Practice

Directions: For each scenario:

1. **Underline** the **independent variable** (what is changed).
2. **Circle** the **dependent variable** (what is measured).
3. List **3 constants** (things kept the same).
4. Describe the **control** (if there is one). *Not every experiment has a control!*
5. Write a **hypothesis** using the format:
If...then...

1. Plant Growth

Maria wants to know if different amounts of sunlight affect how tall bean plants grow after four weeks. She places identical bean plants in **2 hours, 6 hours, and 10 hours of sunlight** each day and measures their height after four weeks.

Constants:

Control:

Hypothesis:

2. Paper Airplanes

Jacob wonders whether the **type of paper** used affects how far a paper airplane flies. He makes airplanes using printer paper, construction paper, and cardstock. Each plane is folded the same way and thrown by the same person.

Constants:

Control:

Hypothesis:

3. Candy Dissolving

Emma wants to find out whether the **temperature of water** changes how quickly a piece of hard candy dissolves. She places identical candies in cold, room-temperature, and hot water and records how long each takes to dissolve.

Constants:

Control:

Hypothesis:

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4. Running Shoes

A PE teacher wants to determine whether **wearing running shoes or sandals** affects how fast students complete a 100-meter run. Students run the same distance on the same track.

Constants:

Control:

Hypothesis:

5. Memory Test

A teacher wants to know whether the **amount of time spent studying** affects students' quiz scores. Students choose to study for 10, 20, or 30 minutes before taking the same quiz.

Constants:

Control:

Hypothesis: