

Activity

What Is Science?

Discovering Science**Background Information**

What makes scientists different from other people? Your first reaction might be to say a high I.Q. or an advanced college degree. But these things do not really make a scientist. The thing that makes scientists different is the way they look at the world. Scientists observe the world around them. Then they ask questions about what they see. Why do things happen? How do they happen? Scientists use a systematic method to find answers to their questions.

In this activity you will learn to look at things the way scientists do. In the process you may discover that you are more of a scientist than you thought.

Materials

sheet of paper (student provides)
coin
glass of water (Graduated cylinder)
small rock
~~glass marking pencil~~
stack of six books (text books)
piece of ~~wood~~ cardboard
Ping-Pong ball

Procedure**Part A**

1. Take the piece of paper in one hand and the coin in the other hand.
2. Hold both items about 2 m above the floor.
3. At the same time, let go of both items. Observe what happens. Write your observations here.

4. Write down at least two questions that come to mind based on what you have observed.

a. _____

b. _____

5. Can you think of a possible explanation for at least one of your questions? Write your idea here.

Part B

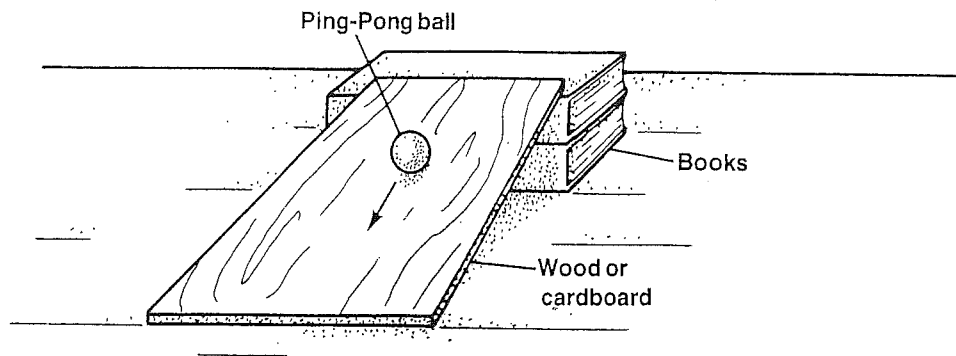
1. Fill a ~~glass~~ ^{beaker} about half full with water. Use ~~the glass marking pencil~~ ^{a pencil} to mark the level of the water.
2. Place the rock in the glass. What happens to the water?

3. Write at least two questions that come to mind as a result of your observation.

4. Can you think of a way to find the answer to at least one of your questions? Write your idea here.

Part C

1. Arrange two books one on top of the other. Place the wooden board or cardboard so that it forms a slope against the books.



2. Roll the Ping-Pong ball down the slope. Observe the movement of the ball.
3. Add two more books to the stack. Repeat step 2.
4. Add two more books to the stack so that you have six books. Repeat step 2.
5. What factors remained the same in each of the three trials?

6. What factor was different in the setup for each of the three trials?

7. What was different about the movement of the ball in the three trials?

8. What kind of question might be answered by an investigation such as this one?

Critical Thinking

1. When scientists make observations and ask questions, they recognize scientific problems. State two scientific problems that you recognized in this activity.

2. A proposed solution to a scientific problem is called a hypothesis. In which step of this activity did you form a hypothesis? What was your hypothesis?

3. A scientist seeks to find answers to questions by performing experiments. In which part of this activity did you perform an experiment?

4. What did you find out as a result of this experiment?

5. Walk outside and look around. Based on your observations, state a scientific problem that interests you.

6. State a hypothesis that suggests a possible solution to this problem.
