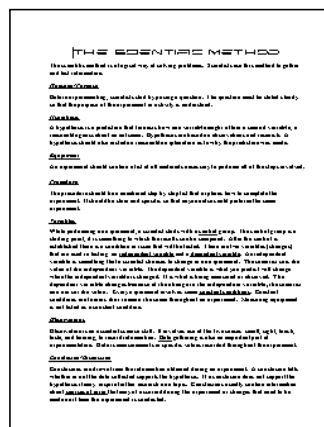


Grade 7 Science

Unit 1: Introduction and Safety

The Scientific Method

- One student please hand out the note titled "The Scientific Method," located on the filing cabinet at the front of the room.
- Please put this note in your binder.
- I will be looking for volunteers to read sections out loud.





Do you think they simply attached the fireworks and made this work?

Known: Fireworks man has a mass of about 80 kg

Fireworks man travelled approximately 150 feet

With this data, the required take-off speed can be calculated

- First they blasted one firework straight up, measuring the speed (the firework was guided by a string to insure it travelled on a straight line)
- Next they attached a metal washer to the firework and blasted it straight up, again measuring the speed
- They then add washers, one at a time, and repeated

Can you find the aspects of The Scientific Method in this experiment?

| | | |
|----------------------|---------------------------------------|---------------------------------|
| Independent Variable | What the scientist chooses to change. | The mass added on the firework. |
| Dependant Variable | What changes when the IV changes. | The speed of the firework. |
| Constant Conditions | What stays the same. | The type of firework. |

Hmmmm, I wonder where you could use this information?

Please get a copy of the "Bouncing a Ball" sheet.

Note that all of the sections from The Scientific Method are there.

After we have read through the page together, your job for today is to complete your hypothesis and determine what you feel the variables are. **(this part is homework if not complete - only do these sections).**

Note that this is a diagnostic task, meaning it will not be graded. Please do the write-up alone so that you can see where you are individually.

When you are done filling in your hypothesis and variables, please choose a partner with whom you will work next class to complete the experiment.

Next class you will complete the experiment. It will be the only period you have to work on it, so be sure you are on task.

Bouncing a Ball

Question: How does the height from which a ball is dropped affect its bounce?

Hypothesis: _____

Materials: rubber ball, meter stick, graph paper, tape

Equipment: _____

Control: _____

Independent Variable: _____

Dependent Variable: _____

Constant Conditions: _____

Procedure:

1. Tape meter stick to wall. Hold a rubber ball at a height of 10 cm, then drop it.
2. Measure the height to which the ball bounces.
3. Continue increasing the height of the drop by 10 cm. Perform the final drop at 90 cm. Record all the bounce measurements.
4. Make a graph. The horizontal axis should show the height of the drop (cm), and the vertical axis should show the height of the bounce (cm). Number each axis from 0 to 90 by 10s. Plot your data in the chart below.

Data Chart

| Height of Drop | Height of Bounce |
|----------------|------------------|
| 10 cm | |
| 20 cm | |
| 30 cm | |
| 40 cm | |
| 50 cm | |
| 60 cm | |
| 70 cm | |
| 80 cm | |
| 90 cm | |

Conclusion: _____

Reflection: What energy changes occur each time the ball is dropped and bounced? (Answer in terms of potential and kinetic energy.)

Attachments

1-2 Scientific Method.pdf

1-2 Bouncing a Ball Experiment Sheet.pdf