Please keep me

Hidden Forces Assignment

Erosion

If you enjoyed learning about weathering, erosion, and deposition . . . You will be making a model that represents the effects of land clearing on soil erosion.

What You Need

- Six empty soft drink bottles
- Piece of plywood (30cm X 30cm X 2cm thick)
- Wood Glue
- Scissors and Stanley knife
- String
- Soil
- Seedling (grass seed or small plants)
- Mulch

How to do it!

1. Prepare three of the coke bottles by cutting a rectangular hole roughly 7cm x 25cm along the side of the bottle.

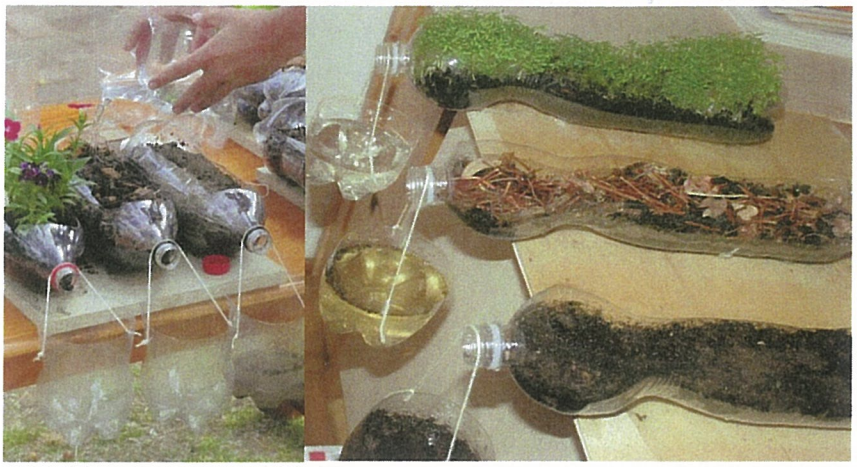
2. Stick the bottles to the wood with the wood glue making sure that the necks of the three bottles protrude a little over the edge of the board.

3. Fill the first bottle with plain garden soil and the other two with a soil and compost mixture. Press down firmly to compact it.

4. Leave the first bottle as is. Cover the top of the soil in the second bottle with your mulch (bark chips, dead leaves and sticks etc). Plant your seedlings in the third bottle. Make sure you plant them tightly together and press down firmly to compact the soil.

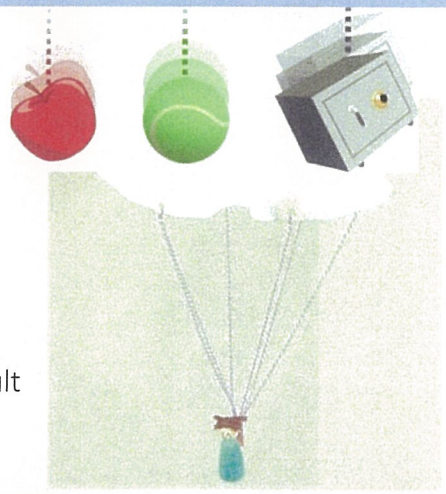
5. Cut the other three bottles in half, horizontally and keep the bottom halves. Make two small holes opposite each other, nearest the cut side of the bottle. Cut three pieces of string, roughly 25cm long and insert each end into the holes. Tie a knot on the ends to secure them. This will form a "bucket" to collect the water. Hang them over the necks of each of the three bottles on the board.

6. Slowly pour equal amounts of water into each of the bottles. Pour the water in at the end furthest from the neck of the bottle.



Take note of the colour of the water collecting in the cups! The water in the first cut is really dirty, the water from the second and third cups are much cleaner which shows that both mulch as well as the root structure of plants assist in preventing soil erosion.

GRAVITY

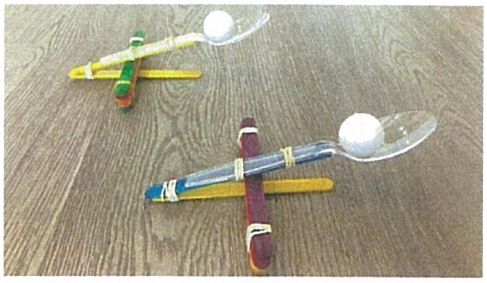


Create a model, poster, video or speech explaining how gravity works. During your investigation you may find drawings, models or examples that you would like to include.

1. Define/explain gravity
What does gravity do? What causes gravity?

2. Make a model/draw a picture/ act it out
Create a model that demonstrates gravity. A parachute or a catapult is a
great model that shows the gradual effects of gravity.

3. Inquiry
Explain the impact gravity has on everyone's lives. Describe a world without gravity. Investigate any questions you may have about gravity or anything you find interesting about the topic!



Magnetism

Create a model, poster, video, or speech explaining how magnetism works. During your investigation you may find different drawings, models or examples to the ones provided.

1. Define/explain magnetism
What are magnets? What do they do? Can you see magnetism

2. Make a model/draw a picture/ act it out
Create a model that demonstrates magnetism. A magnetic maze or water compass are great ways to demonstrate the effects of magnetism.

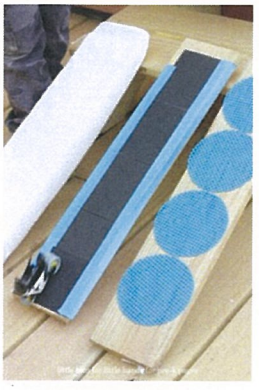
3. Inquiry
Explain the impact magnets have on everyone's lives. Are there things that would not exist if we did not have magnetism? Investigate any questions you may have about magnets or anything you find interesting about the topic!

Friction

Create a model, poster, video or speech explaining how friction works.

1. Define/explain friction
What is friction? What cause friction?

2. Make a model/draw a picture/ act it out
Create a model that demonstrates friction. A balloon hovercraft or friction ramp are great models that shows the effects of friction.



3. Inquiry
Explain the impact friction has on everyone's lives. Describe a world without friction. Investigate any questions you may have about gravity or anything you find interesting about the topic!