WORKSHEET 9

Activity - Pushy Air

Print and copy this worksheet for use in the classroom.

Purpose
To investigate air and its properties.

Equipment

- sheet of newspaper
- ruler

Safety

Keep back from the table and well away from the path of a catapulted ruler.

Procedure

1. Place a wooden ruler or flat stick on a bench top with about a quarter of its length overhanging.
2. Give the overhanging part of the ruler a quick "karate chop" from above.
3. Rescue the ruler and replace it in the same position on the bench top, this time with a sheet of newspaper covering the non-overhanging part of the ruler.
4. Again, apply a quick "karate chop" from above.

Questions

Answer the following questions in the spaces provided.

1. What do you expect to observe before each part of the experiment?

2. Why do you think the ruler snaps during the second experiment?

3. Is it the weight of the newspaper that makes it break?

Explanation

Air is all around us pushing on everything. It pushes on our skin and on the bench top. The ruler has a relatively small surface area, so the air pushing down on top of it is not enough to hold it in place when you hit it.

The newspaper has a large surface area. The force of the air acts over the whole area. The result: the air holds down the paper, which holds the ruler in place. Unable to lift quickly enough when you strike the overhanging part of the ruler, it has no option but to..... snap!

Fact File

Air pushes down on a folded sheet of tabloid newspaper with a force greater than a one tonne weight!

This activity is courtesy of
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