Dynamics and Statics

Projectiles: 1. Mouse projectile

(Ireland)

Background:

Air in a plastic milk bottle can be propelled upwards when the bottle is squashed. A mouse projectile can then be launched upwards into the air.

You will need:

- ✓ plastic milk bottle
- ✓ card
- ✓ sticky tape
- ✓ scissors
- ✓ paper and pens

Follow these steps:

1. From a circle or semi-circle make the cone shaped body of the mouse.
2. Add ears, nose, tail and a face.
3. Sit your mouse on the top of the empty plastic milk bottle.
4. Count down and then squeeze or 'clap' the milk bottle with your arms extended. (This will ensure that your face is away from the rocket mouse when it is propelled upwards.)

So what happened?

When the air from the squeezed bottle is propelled upwards so too is the mouse projectile.

What next?

Try repeating this exercise several times varying the size of the mouse, the size of the bottle and the force of the push. How will each of these changes affect the height the mouse rises? Can you direct the mouse to hit a target? What can you do to make the mouse travel further or faster? What is the heaviest mouse you can launch? Try adding measured quantities of modelling clay inside the mouse's nose cone and make a graph of weight and height/distance travelled.