

Safely smelling chemicals

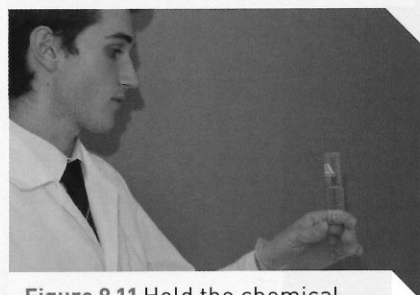


Figure 9.11 Hold the chemical slightly away from your face.

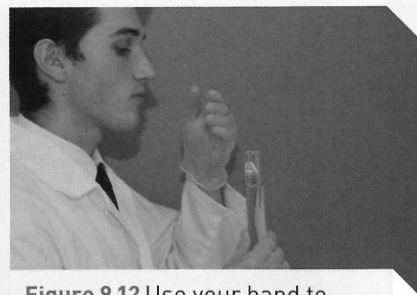


Figure 9.12 Use your hand to gently waft a small amount of air above the container towards your face.



CHECK WITH YOUR TEACHER
IF IT IS SAFE TO SMELL THE CHEMICAL, AND ONLY PROCEED IF IT IS.

How to light a Bunsen burner

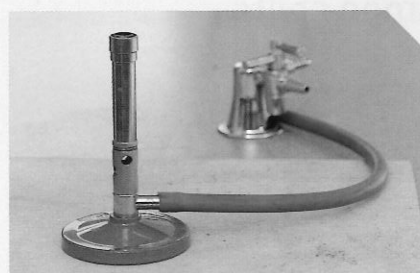


Figure 9.13 Place the Bunsen burner on a heating mat.



Figure 9.14 Connect the rubber hose firmly to the gas tap.



Figure 9.15 Close the air hole by turning the collar.



Figure 9.16 Light a match and place it above the barrel, with your hand below the flame.



Figure 9.17 Open the gas tap fully.

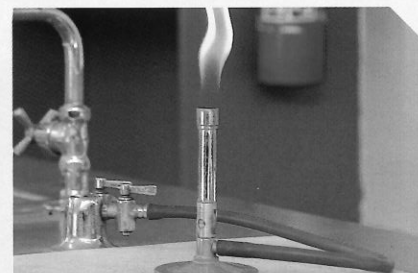


Figure 9.18 The Bunsen burner will now have a yellow (safety) flame.



REMEMBER TO KEEP YOUR HAND BELOW THE FLAME.



1.4

EXPERIMENT

Aim

To determine the relationship between the distance elastic is pulled back and the distance a marshmallow moves after it is released.

Materials

- > Rubber bands
- > Plastic ring or pipe cleaners
- > Marshmallows
- > Chair

Marshmallow slingshots

Method

- 1 Make a chain of rubber bands by threading the end of one band through and over the end of the second band, then pulling tight.
- 2 Place a plastic ring in the centre of the rubber band chain.
- 3 Secure the rubber bands to the legs of an upside down chair, as shown.
- 4 Insert a marshmallow into the ring.
- 5 Pull back the marshmallow the measured amount, ensuring the elastic is horizontal to the ground.
- 6 Wait until everyone is out of the flight path, and then release the elastic bands.
- 7 Measure the distance the marshmallow travelled.

- > What (independent) variable will you change from the first method?
- > What (dependent) variable will you measure and observe?
- > Name three variables you will keep the same/control.
- > Record your method, observations and results in your logbook.

Results

Record your results and observations in a table.

Discussion

- 1 What was your independent variable? What was your dependent variable?
- 2 What variables were difficult to control? Explain how you overcame this difficulty.
- 3 Was your hypothesis supported? Use evidence from your results to support your answer.

Conclusion

What is the relationship between the distance elastic is pulled back and the distance a marshmallow moves?

Inquiry: Choose one of the following questions to investigate.

- > What if the elastic bands were not horizontal?
 - > What if the rubber bands were tied tighter?
 - > What if a smaller marshmallow was used?
- Answer the following questions in relation to your inquiry.
- > Write a hypothesis for your question.

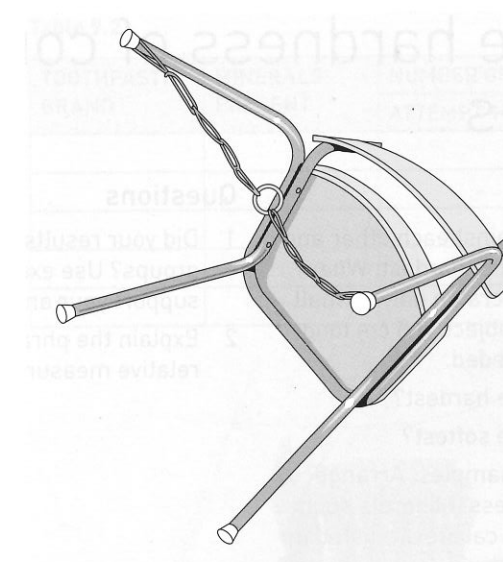


Figure 9.19 Secure the chain to the legs of a chair.

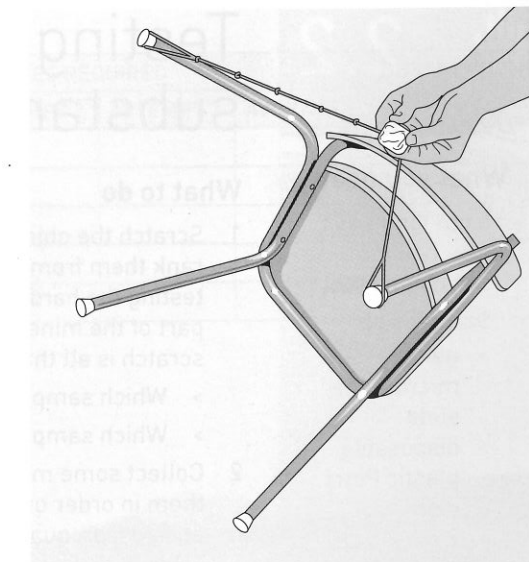


Figure 9.20 Pull back the marshmallow the measured amount.