Australian Government
Department of Industry
Innovation, Science, Research and Tertiary Education

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Transcription of the Questacon Science Squad Activity Video – Model of a Lung

The video for this transcript can be found on the Questacon Science Squad website at:

http://sciencesquad.questacon.edu.au/activities

Transcription from video:

(Sound of bubbles popping)

Steve: Ever felt out of breath? Ever wanted to go that extra mile? Well now you can, with a little help from us.

Hi, my name's Steve and I'm from the Questacon Science Squad and today I'm going to show you how to make a model of a lung.

You need:

- a pair of scissors
- two balloons about 30 centimeters in diameter
- a straw
- a rubber band
- a piece of plasticine about two centimetres across
- a pencil and,
- a plastic bottle about 600mL large

First what you'll need to do is get your balloon and cut off the neck, like that.

(Steve snips off the neck of one balloon)

This is now going to act as our diaphragm. Next you want to get the plastic bottle and cut the base off, like I have done here.

(Steve removes the top half of the plastic bottle and disregards the bottom section)

Now get your diaphragm and stretch it very, very tightly over the end of your bottle. Now, this can be a little bit fiddley, so I prepared one earlier.

(Steve picks up his completed example)

Now get your other balloon and put the straw in through the neck and tie it off tightly using your rubber band. The balloon is going to act as our lung and the straw is going to act as our wind pipe.

(Steve is tying the rubber band around the balloon and straw)

Great.

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Now what we're going to do is we are going to get the pencil and put it through the centre of our ball of plasticine. Then we get our straw and we put it through the hole we've just made and pinch it off at the ends so that no air can escape.

(Steve is securing the ball of plasticine around the pencil)

Now you want to get the balloon, squeeze out all the air and feed it into the top of your bottle. Push it all the way down and then once you've done that, squeeze off the sides of the plasticine so that once again, no air can come through.

Now we're going to see if our lung can breathe. So, watch the inside balloon as I gently pull on the bottom balloon.

(Steve picks up the completed model and the camera zooms in)

And we breathe in... and... out. In... and... out.

(Steve is pulling the balloon secured around the base of the bottle in and out as he says the words. As he does this the balloon inside the bottle inflates and deflates slightly with each movement)

And if we're running really fast we breathe, in-and-out and in-and-out and in-and-out and in-and-out!

(Steven demonstrates again but this time pulls the balloon secured around the base of the bottle in and out faster. The balloon inside the bottle inflates and deflates faster, too)

To find out how this works or to find out how you breathe using your diaphragm, visit the Questacon Science Squad website. See you next time.