









Investigation: Strength test

Answers may vary. This is a sample response.

What will happen if we pull the material?

Material	Prediction: Is it strong enough to be pulled without breaking?		Results: Was it strong enough?	Consider changes: How could the material be changed to make it stronger?
 aluminium foil	yes no	Test	yes no	fold the aluminium
 drinking straw	yes no	Test	yes no	tie a knot in the plastic straw
 crepe paper	yes no	Test	yes no	twist the crepe paper and tie a knot
 wool	yes no	Test	yes no	braid the wool

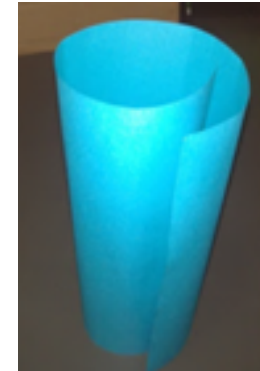
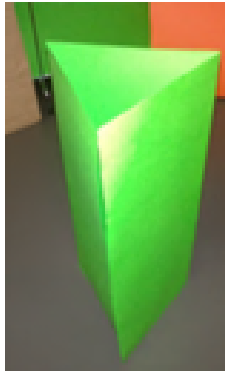
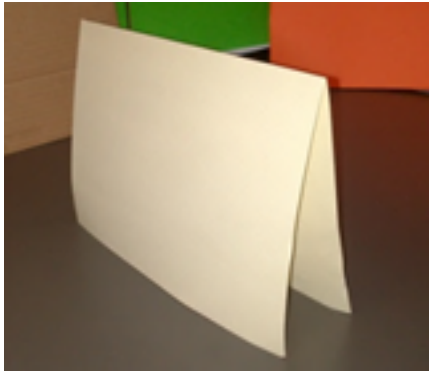
Material	Prediction: Is it strong enough to be pulled without breaking?		Results: Was it strong enough?	Consider changes: How could the material be changed to make it stronger?
 wood	<input checked="" type="radio"/> yes no	Test	<input checked="" type="radio"/> yes no	make it shorter
 plastic bag	<input checked="" type="radio"/> yes no	Test	yes <input checked="" type="radio"/> no	twist the bag into a long, thinner shape and then tie in a knot
 paper	<input checked="" type="radio"/> yes no	Test	yes <input checked="" type="radio"/> no	fold the paper
 waterproof modelling clay	yes <input checked="" type="radio"/> no	Test	yes <input checked="" type="radio"/> no	make the modelling clay in to a shape as thick as possible

Paper challenge: How strong is a piece of paper?

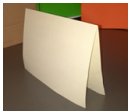
Can you physically change a piece of paper to make it strong enough to hold a large book?

Answers may vary. This is a sample response.

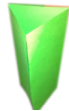
Change the paper to make the shapes below.



Prediction: I predict that the paper is strong enough to hold a large book.



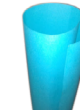
Yes No



Yes No



Yes No



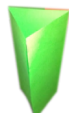
Yes No

Test the shapes

What happened? Did the paper hold the large book?



Yes No



Yes No



Yes No




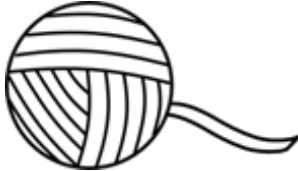

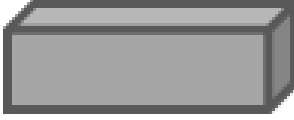



Yes No

Investigation: Holding


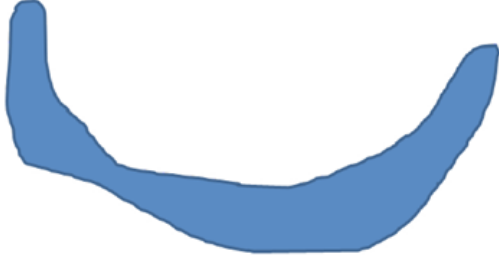
Choose a material **you** can physically change to contain marbles without any support.



No scissors, sticky tape, glue or staples are allowed.

Answers may vary. This is a sample response.

<p>Circle the material you will use:</p>		
 <p>paper</p>	 <p>wool</p>	 <p>fabric</p>
 <p>block of wood</p>	 <p>aluminium foil</p>	 <p>dough or modelling clay</p>
<p>Predict (think about properties)</p>		
<p>I predict the material is suitable to make a container to hold marbles. This is because ...</p> <p> it is flexible and able to change shape easily.</p>		

 Physically change your material to make your container. 

<p> List action words to describe the changes you make.</p>	<p>Describe and draw your container.</p>
<p>pulled flattened shaped cupped</p>	 <p>I pulled the modelling clay to first flatten it and then shaped it to make a cup with sides</p>

 Test your container to see if it holds marbles. 

Did it hold marbles?	
Yes	No
↓	↓
<p>Why?</p> <p>The material has been shaped to have sides to hold the marbles.</p>	<p>Why not?</p>
<p>What material would you try next time? Aluminium foil</p> <p>Why? Aluminium foil can also change and hold a new shape easily.</p>	