Sorting plastic

This task is about identifying and describing physical properties of plastic objects.

a)i) In your group read the information in the box below. Check that everyone understands what a physical property is.

> A property of a material is a natural part of the material and can be used to identify it. Physical properties can be observed (you can describe by looking at them) and/or measured in some way. All materials have more that one property. There are lots of different sorts of plastics. One way we can group plastic objects is by the physical properties of the plastic they are made from. Some physical properties are hardness, smoothness, transparency (how much light it lets through), flexibility (how much it bends), strength, and stretch-ability.

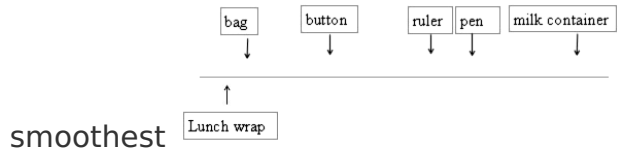
ii) Fill in the table below by writing the name of something in your classroom that has the property described. The first row is done for you.

Hard	Desk top	Soft	Cushion
Smooth		Rough	
Lets light through		Blocks light	
Bendy		Stiff	
Strong		Easily broken	
Stretchy		Not stretchy	

STOP: Ask your teacher or another group to check your answers.

b)Your teacher will give you 6 things made of plastic. In your group decide where each of these objects will fit for each property. The first one is done for you. It shows the property of smoothness of some objects, from smoothest to roughest. (Your objects might be different from the example.)

i)



ii) hardest _____ softest

iii) lets light through _____ blocks light

iv) bendy _____ stiff

v) most stretchy ——————————————— least stretchy

c)Here are 4 tests students used to test a property. Try each test before you answer the questions.

Test 1: One end of each plastic object was held at 0 on the ruler, and then the other end pulled as far along the ruler as it could go.

i) Circle the property that was being investigated.

smoothness bendiness let light through stretchiness hardness

ii)How could you measure this property?

Test 2: A student tried to make one end of each plastic object touch its other end.

i) Circle the property that was being investigated.

smoothness bendiness let light through stretchiness hardness

ii)How could you measure this property?

Test 3: A nail was scraped across each plastic object.

i) Circle the property that was being investigated.

smoothness bendiness let light through stretchiness hardness

ii)How could you measure this property?

Test 4: Each plastic object was held up to the light.

i) Circle the property that was being investigated.

smoothness bendiness let light through stretchiness hardness

ii)How could you measure this property?

---

d)The teacher recorded the students' rules for sorting their plastic in one of the two columns below.

Column A	**Column B**
• by the shape; • by where it is found in the home; • by whether it was used for cooking or drinking	• whether it was hard or not; • whether they are very flexible or not; • whether they can be scratched or not; • whether light can pass through or not

i) In your group, decide which properties you think scientists would use to group plastic objects *(circle one).*

Those in Column A or **Those in Column B**

ii)Give your group's reason for your answer.

_____

_____

_____

_____

Published on *Assessment Resource Banks* (https://arbs.nzcer.org.nz)