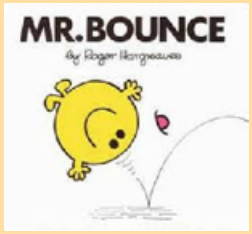
WHICH BALL IS THE BOUNCIEST?

CLASSROOM ACTIVITY PACK

J JUNIOR

Equipment:	A variety of balls, preferably of fairly similar size for fair testing, e.g. tennis, sponge, rubber, ping pong (try to avoid large balls like footballs and basketballs), tape measure. (*Children could bring in their own balls*). A hard surface on which the balls can bounce.  
Suggested Class Level:	Younger classes
Preparation:	Collection of the variety of balls
Background information:	Balls bounce because they are elastic. When a ball hits a hard surface its shape changes – the part touching the ground flattens slightly. It recovers its original shape quickly and bounces back up.
Trigger questions:	Would you use a ball of plasticine to play tennis or ping pong? Why not? Do you think the squashy ball will bounce well? What sort of balls do you think will bounce best? Does anybody watch tennis on TV? Why do you think they change the balls after every 7 games at Wimbledon?" (*The balls lose their bounce, because some of the air has been knocked out of them, i.e. they are slightly softer*).
Content:	**SCIENCE:** Materials: properties and characteristics **MATHS:** Number: Comparing and Ordering Measures: Length (*standard or non-standard*) Data: Represent data (*e.g. bar charts for different balls on same surface or same ball on different surfaces*)
Skills:	Predicting, observing, investigating and experimenting, measuring, recording.
Cross-curricular Links:	

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Activity:

Ask the children to predict which of the balls is the bounciest. Then discuss how they might do a fair test to see if their guesses were right.

e.g. "What are you going to do? What do you think will happen?"

How will you make it a fair test?" (*Drop the balls from the same height, onto the same surface. The balls should be dropped and not thrown.*)

Picture by CLEAPSS 'Teaching Forces' Guide, March 2006

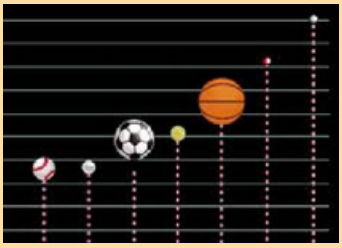
In this picture, what are the children changing? What should they keep the same?

If the heights are difficult to measure:

(i) the bounce can be recorded as 'low', 'medium' or 'high' and put in three different piles; or

(ii) Two balls could be dropped together by the same child (the easiest way to drop balls at the same time!) and their bounces compared.

(iii) A chart or coloured bands on the wall could be used to measure height.



(iv) Younger children could use a piece of cord cut to each height, and hang the pieces of cord to compare.

Children record their results, and then compare these with their predictions. They can compare their results with other groups. Can they explain their results?

Safety:

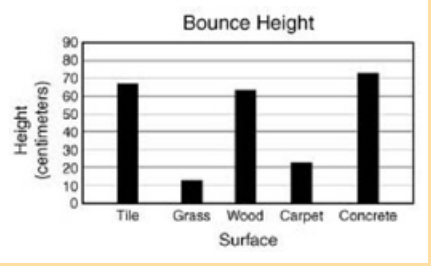
Follow-up activity:

A similar investigation could be carried out, this time to find out which surface is good for bouncing.

"Do you think balls bounce well on sand?"

"Do they bounce well on wood?"

Take just one of the balls – a fairly bouncy one – and drop it onto different surfaces, e.g. carpet, wood, tiles, and note the height of the bounce.



Keep the same: ball, height from which it is dropped
Change: surface onto which ball is dropped