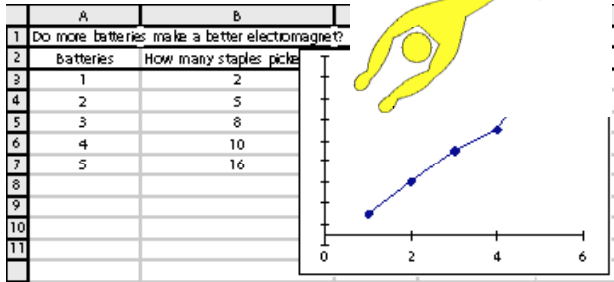# Using IT in... forces

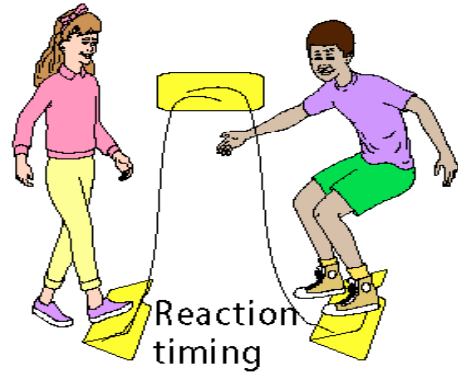## How can trapeze artists work safely?

Trapeze artists rely on split second timing - and the lengths of the ropes, just like a pendulum is important. Get the children to make a trapeze and ask them to explore its swing. They might say, count how many times it swings in 30 seconds, see if this is always the same and see if the 'artist' affects it. They can **spreadsheet** table to record results and

	A	B
1	Do more batteries make a better electromagnet?	
2	Batteries	How many staples picked
3	1	2
4	2	5
5	3	8
6	4	10
7	5	16
8		
9		
10		
11		

make a bar graph. They can go on to see what happens with a longer rope and compare the graphs. What does this tell you about the trapeze swing?

Another question, 'which will rolls further, a large cylinder or a small cylinder' provides an opportunity for children to measure, record and look for patterns. They can roll different tubes down a slope and see how far they travel along the floor. They can compare heavy and light tubes, large and small tubes and record their results in a **spreadsheet** or **database program**. They should take a few readings each time to be sure. Using the computer they can start to analyse their results: sort the results into order, which tube rolls further? Draw a bar graph for the different tubes: do larger tubes roll further? What affects how far a tube will travel?

IT: Handling information

Reaction timing

How fast are your reactions?

Children can measure their reaction times very accurately using the computer. You connect two **pressure mats** into your sensor box, and when the children jump on the mats the computer will measure the time between jumps. Other sensors called **light gates** or light switches allow you to measure reaction time too. The children will also gain some computer skills which will be useful for many other timing activities.

IT: Measuring

How fast can you karate chop?

In a way, similar to measuring reaction times above, the children can measure the time of their karate chop using **pressure mats**, **light gates** or light switches. These are sensors that respond to an event, such as a hand passing over them, while the computer measures the time it takes. The activity will provide good practice in measuring, recording and thinking about times and speeds. It may also generate too much excitement - so you might instead try 'how fast can you kick a ball?'.

IT: Measuring