

2. Asking more specific questions about the graph can help children to see patterns. Enlarging graphs or using an O.H.P. allows more children to contribute to the discussion. Examples are shown below.

Which things decay?

Results in a table (words/words)

Type of food	How rotten it is after 4 weeks
Orange	Blue/grey mould on one side
Dry Biscuit	No change
Bread	Lots of greyish mould
Apple	Brown patches and wrinkled skin
Stock cube	No change

Which things didn't go rotten? What is the same about them? Which things went mouldy? What is the same about them? Which of these do you think would go mouldy, sugar cube, banana, tea bag, cheese? What helped you to decide?

How does the length of the elastic band affect the pitch of the note?

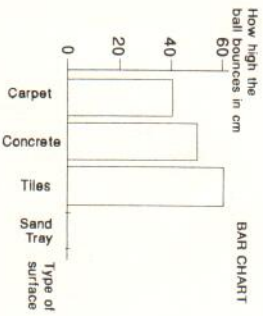
Results in a table (numbers/words)

Length of elastic band	Pitch of note
10cm	Low
8cm	Fairly low
6cm	Medium
4cm	High

What length of band made the lowest note and what length made the highest note? If you plucked a band that was 12cm long what sort of note would you expect to hear? What makes you say that? What happens to the pitch of the note as the elastic band gets shorter?

How does the type of surface affect how high the ball bounces?

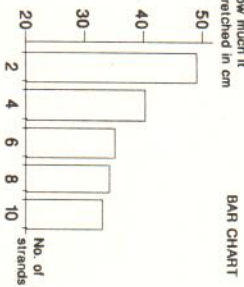
Results in a bar chart (words/numbers)



Can you order the columns from smallest to biggest? Which one gives the biggest bounce? What is it about these surfaces that makes the ball bounce to different heights?

How does the no. of strands of elastic affect the stretch?

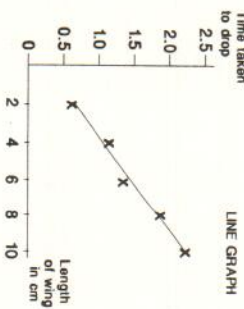
How much it stretched in cm



Did the number of strands affect the stretch? What in the bar chart tells you that? What could you say about the size of the steps between one column and the next? What do you think the size of the next step (to the stretch for 12 strands) would be?

How does the length of the wing of the paper spinner affect the time taken to drop?

Time taken to drop



Which way does the line slope? What happens to the time as the length of the wing gets longer? If you made the wings these lengths 1cm, 2cm, 5cm, 12cm how long do you think each one would take to drop? How did you know what it would be?

3. Give the children challenges which ask them to use their results.

Can you make the elastic stretch to 44cm? How many strands will you need?

Can you make the ball bounce 20cm high (when dropped from 1m)? Find (or make) a surface which gives a bounce of 20cm.

Can you make a paper spinner that will take 1.5 seconds to fall from a height of 2m? How long will you make the wings?

Progression in developing tables

These examples show how tables can be adapted to suit the different abilities of children in the primary school. In every case children are investigating how the height from which you drop a ball makes a difference to the height of the bounce.



This child has observed and recorded what happens when she dropped the ball from two different heights.

Where we rolled it off	How high it bounced
1m	1m
1.5m	1.5m

This child has completed a table which has been constructed mainly by the teacher. She has carried out three tests and has put the picture record of her results in the correct place.

Where did you drop it	How high it bounced
Top of door	5 boxes
bookshelf	4 boxes
bottom of window	2 boxes
table	2 boxes

This child has completed a table where the headings were given by the teacher. She knew she had to do four tests but she had to decide what to write in the first column and what to record in the second column.

Height that we dropped it	How high it bounced
1m	0.38m
1.25m	0.59m
1.5m	0.68m
1.75m	0.76m

This child constructed her own table choosing her own headings. The number of tests to carry out and the heights from which she would drop the ball. The teacher had suggested that she should drop the ball from heights between 1m and 2m.

Height of drop	Height of bounce			
	1st go	2nd go	3rd go	Average
1m	0.39	0.40	0.35	0.38m
1.25m	0.58	0.64	0.55	0.59m
1.50m	0.68	0.79	0.80	0.76m
1.75m	0.85	0.80	0.81	0.82m
2.00m	0.82	0.93	0.89	0.88m

This child constructed this table on her own choosing the headings, the number of tests, the range of heights she would use and the intervals between them. She also chose to repeat her tests and take an average. She knew the type of table she should use to show all her results.

What I change	What I judge or measure	Type of Table I should use	Type of Graph I should use	
WORDS e.g. Type of food (in sealed container)	WORDS e.g. How rotten it is after 4 weeks	Type of food Orange Dry Biscuit Bread Apple Stock cube	How rotten it is after 4 weeks Blue/grey mould on one side No change Lots of greyish mould Brown patches and wrinkled skin No change	No graph
WORDS e.g. Type of surface	NUMBERS e.g. How high the ball bounces	Type of surface Carpet Concrete Tiles Sand Tray	How high the ball bounces 41cm 53cm 64cm 0cm	BAR CHART How high the ball bounces in cm Carpet Concrete Tiles Sand Tray
NUMBERS e.g. Length of elastic band	WORDS e.g. Pitch of note	Length of elastic band 10cm 8cm 6cm 4cm	Pitch of note Low Fairly low Medium High	No graph
WHOLE NUMBERS ONLY e.g. Number of strands of elastic	NUMBERS e.g. How much it stretched	No. of strands of elastic 2 4 6 8 10	How much it stretched 48cm 40cm 35cm 34cm 33cm	BAR CHART How much it stretched in cm No. of strands
NUMBERS e.g. Length of wing (on paper helicopter)	NUMBERS e.g. Time taken to drop from 2m	Length of wing 10cm 8cm 6cm 4cm 2cm	Time taken to drop 2.21sec 1.83sec 1.37sec 1.13sec 0.66sec	LINE GRAPH Time taken to drop Length of wing in cm