Name . . . . . Date . . . . . .

Smarties Investigation

Do all tubes of Smarties contain the same number and colours of Smarties?

Estimating/Predicting

1. First of all, before opening the tube, look at it carefully and estimate the number of colours, and the total number of Smarties.

   Before you open your tube, estimate:

   a. How many Smarties are there altogether? _____

   b. How many colours are there? _____

   c. Will the same colours be found in each tube? Y/N

   d. Will the same number of Smarties be in each tube? Y/N

Sorting/Classifying

2. Sort the Smarties out into colours.

   a. How many colours are there? _____

   b. Write down the colours in the table below.

   c. Does everyone else have the same colours? Y/N

Counting

3. Count the number of Smarties in each colour

   a. Write down the numbers in the table below.

   Count the total number of Smarties.

   b. Add up all the colours, but check your total by adding up all the Smarties without sorting into colours. _____

Recording

4. Complete the tally chart below.

Tally Chart / Table of Results

Colour	Tally	Number
Total number of sweets		

Kindly contributed by **Judith White, Somerset Adult Learning and Leisure**, who adapted it (for Level 1&2 learners) from a resource from **Di Mellor (Feb 2004), Darlington College** (the original resource for E1-L1 learners is still available on site). HD1/L1.1 L2.1 Extract and interpret information. HD1/L1.2 L2.2 Collect, organise and represent data. HD1/L1.3 (L2.3) Find mean (mode, median). HD1/L1.4 L2.4 Find range.

Extracting information

- From your tally chart, which colour has the highest number of sweets? _____
- Which colour has the lowest number of sweets? _____
- What is the difference between the highest number and the lowest number of sweets? This is the RANGE. _____
- In the table below, write in everyone's name, the total number of colours they had and the total number of sweets. (You may use a calculator for this, but if you add up the total by hand, use a calculator to check.)

Name	Number of colours	Total number of sweets
Total sweets for the whole class		

- Who had the most sweets in the class? _____
- Who had the least sweets? _____
- What was the range in the number of sweets for the whole class? _____
- What is the mean (average) number of sweets in a tube? _____
- What is the median number of sweets in a tube? _____
- Is there a mode and if so, what is it? _____

Was the question at the beginning true?
Do all tubes of Smarties contain the same colours and the same number of sweets?
Why?
Is it fair?

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Thinking about averages

Suppose the tube with the most Smarties contained an extra 100.

- What would happen to the mean? Would it get higher, lower or not change?

  _____

- What would happen to the median? Would it get higher, lower or not change?

  _____

Representing data

- Eat some of the Smarties so that you have exactly 30 left.
- A circle has 360 degrees. How many degrees will represent one Smartie?
- Work out how many degrees are needed for each colour and record in the table.

Colour	Number of degrees

- Check that the total number of degrees is 360.
- Use a protractor to draw a pie chart to show your information. Make sure that it is coloured correctly, with a key and a title, to show the proportions of colours of Smarties in your tube.
- Add numbers to the pie chart, to show how many of each colour of Smarties in your tube.

Now eat the rest of the Smarties ☺

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