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DARLINGTON COLLEGE OF TECHNOLOGY

Smarties Investigation

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

Objectives:
- to estimate and count objects
- to sort and classify objects
- to add and subtract one and two digit whole numbers
- to record information in a tally chart
- to represent information in a pictogram or a bar chart
- to extract and interpret information from graphs and charts
- to find mean and range for a set of data

Main criteria covered: Whole Numbers, Handling Data, Measures, Calculator use.
- Whole numbers (counting, addition, problem solving, etc.):
  N1/E1.1, E1.2, E1.4, E1.5, E1.6.
  N1/E2.1, E2.2, E2.3, E2.7.
  N1/E3.3, E3.9.
  N1/L1.3.
- Calculator use: N1/E1.7, N1/E2.8, N2/E3.4, N2/L1.11.
- Everyday measures (estimating capacity): MSS1/E2.7, E3.7, L1.4.
- Handling Data: extract and interpret numerical information; sort and classify; construct diagrams, representations, graphs and charts; use tallies; find mean and range for a set of data, etc.
  HD1/E1.1, E1.2, E1.3
  HD1/E2.1, E2.2, E2.3, E2.4, E2.5.
  HD1/E3.1, E3.2, E3.3, E3.4.
  HD1/L1.1, L1.2, L1.3, L1.4.

This resource was kindly contributed by Di Mellor, basic skills tutor at Darlington College. DMellor@darlington.ac.uk
The investigation is ideal for mixed level classes and covers many curriculum elements from E1 – L1. Further details on page 1.
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Things to do:

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, <u>estimate</u>:

    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. <u>Sort</u> 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. <u>Count</u> the number of Smarties in each colour
    a. Write down the numbers in the table below.
    <u>Count</u> 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.   _____

Record

4. <u>Complete</u> the tally chart below.

Tally Chart/Table of Results

Colour	Tally	Number
Total number of sweets		

Now eat the Smarties ☺

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Representing data

- Using the information you collected about the Smarties, draw a pictogram or a bar chart coloured correctly, with labels and a title, to show the number of colours and the total number of Smarties in your tube.

Extracting information

- From your graph, 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.

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

You may use a calculator for this, but if you add up the total by hand, use a calculator to check.

- Who had the most sweets in the class?   _____

- Who had the least sweets?   _____

For Level 1 students: Draw a bar chart to show your information.

- What was the range in the number of sweets for the whole class?   _____

- And what is the mean (average) number of sweets in a tube?   _____

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