

Food and drink: Going bananas

Description

Current healthy eating guidelines advise eating at least 5 fruit or vegetable portions a day. In this topic pupils work out what a portion size looks like, find out whether they are eating enough fruit and vegetables and compare the costs of making and buying smoothies.

Activity 1: How much is a portion?

Activity 2: Five-a-day

Activity 3: The smoothie challenge

How much is a portion? asks pupils to estimate the weights of a selection of fruit and vegetables and investigate how much is needed to make up a 5-a-day portion. The guideline for a portion size is 80g.

Pupils work in small groups to estimate the weights of some fruits and vegetables. Give each group a clementine, or similar sized fruit weighing about 80g, labelled with its weight.

Each group should agree and record their estimates before a "weigh in" is performed by the teacher or pupil using the digital scales. Encourage discussion of how to obtain more accurate weight measurements of small items, like peas, and items that vary in size and weight such as bananas. You may also wish to use this opportunity for discussion on *rounding*.

The pupils should record the reported weights. The differences between their estimates and the reported weights motivates the % error calculation. Which group has the best estimate? The worst estimate? The best overall performance?

Pupils also calculate how many, or what proportion, of each fruit or vegetable make up an 80g portion. Their findings can be displayed in a poster.

Five-a-day investigates how many portions of fruit and vegetables pupils have on a daily basis and uses these results to compare the class with the latest data available for adults.

Each pupil calculates and records how many portions of fruit and vegetables they ate yesterday. Use class discussion to establish the intervals used in the National Health Service Survey, 2005.

Resources

A selection of fruit and vegetables

Digital scales

A selection of 1 litre smoothie cartons



The teacher can then collate the data for the class and lead a discussion of the types of graphs that could be used to illustrate this data – a tally chart, a stem and leaf, a bar chart. Gender comparisons could also be made using a back to back or a comparative bar chart.

Invite the pupils to consider what calculations would help answer the questions: does your class eat healthily? For example, pupils can calculate the mean number of portions of fruit and vegetables eaten and the proportion of pupils in their class that had eaten **at least** the recommended amount.

The activity is extended by comparing the class results with the official statistics. Are the class more or less healthy than adults in 2005? Estimates for the mean can be obtained for the grouped data and compared to your mean number of proportions. The *Fruit and vegetable consumption, by age in 2005 table* is provided as an Excel spreadsheet.

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In **The smoothie challenge** pupils choose a smoothie and investigate whether it is good value for money. You could provide a selection of 1 litre smoothie cartons or print out the ingredients of a selection of 1litre smoothies from http://www.innocentdrinks.co.uk/our_drinks/cartons/

How much would it cost to **make** a smoothie? How does this cost compare to **buying** a smoothie? The prices of many of the individual ingredients can be found at <http://ocado.com> Some fruits are priced according to weight and information about the weight of fruit is provided.



The mathematics

In **How much is in a portion?** pupils estimate weight, work with measures and calculate percentage errors. **Five-a-day** explores the use of summary measures to describe and compare data. There are opportunities for pupils to compare data handling representations and to estimate means from grouped data. The smoothie challenge requires pupils to do calculations involving money, weight and volume and develops the skills of organising and processing information, making decisions and interpreting results.