Teacher notes

create maths

Working with others: Is it fair?

Description

Working in the community often requires understanding how people are represented nationally, locally and within voluntary organisations. This topic explores electoral systems and their complexity and asks pupils to reflect on their fairness. It provides useful opportunities for cross curricular work.

Activity 1: Who gets elected?

Activity 2: Constituency seats

Activity 3: Electoral systems

Resources

Pie chart scales, available from Tarquin Publications, packs of 10, at http://www.tarquin-books.demon.co.uk/

Red, blue, yellow and green counters, about 10 of each for each pupil. Scissors and cut up sheets or sets of ready prepared laminated cards.

Who gets elected? draws on the most recent published election data and asks the pupils to draw two different pie charts – one showing the percentage of the vote and the other showing the percentage of seats won. For most classes completing the task will take two lessons. You will need to begin with a whole class discussion about the meaning of the data presented. They need first to convert the data to percentages – working in groups of four, deciding how to share out the work and comparing results and checking that the percentages add to 100. They then use this to construct the pie charts. A pie chart scale will support this aspect of the work. A class discussion or group posters will draw out the discrepancy. This discrepancy motivates the next two activities.

Colours are used to model how voters are divided up into **Constituency seats**. Use mini-whiteboards or slip the sheet with coloured dots into a transparent plastic wallet. Both of these allow for changes to be made easily. You may prefer to use coloured counters. **Red** and **blue** can both win with arrangements producing identically sized constituency seats; **yellow** requires the sizes of the seats to be slightly different. Mathematical thinking is deepened if the pupils try to create a similar puzzle but with four different colours.

Electoral systems investigates different ways of counting votes. Each pupil needs a cut-up sheet or a set of ready prepared laminated cards. The pupils will be surprised to find that each of the options comes first in one of the systems. They can compare the three systems described with others – for example, the system for selecting the sites for Olympic can be found at:

http://www.olympic.org/uk/games/athens/election_uk.asp

and the voting patterns that led to the selection of London for 2012 can be found at:

http://www.olympic.org/uk/games/london/election_uk.asp

The mathematics

The topic provides an opportunity for work on inverse proportion, conversion calculations, compound percentage change and information handling skills.