

# MPs are elected by a system called *first past the post.*



## General election results 1992-2001 United Kingdom

### Votes in millions

	Con	Lab	Lib	Other	Total
1992	14.09	11.56	6.00	1.96	33.61
1997	9.60	13.52	5.24	2.92	31.29
2001	8.36	10.72	4.81	2.47	26.37

based on Research paper 03/59, House of Commons library

What percentage of the **vote** did each party get?  
Draw a pie chart to show the share of the **vote** for each year.

Working in the community often requires understanding electoral systems.

## General election results 1992-2001 United Kingdom

### Parliamentary seats won

	Con	Lab	Lib	Other	Total
1992	336	271	20	24	651
1997	165	418	46	30	659
2001	166	412	52	29	659

based on Research paper 03/59, House of Commons library

What percentage of the **seats** did each party get?  
Draw a pie chart to show the share of the **seats** for each year.

# Comment?



Is it fair?

Who gets elected?

working with others

MPs are elected from **constituency** seats.

Constituency seats have roughly, but not exactly, the same number of voters.



We can model this with colours.

Use colours to represent 24 voters.  
Draw 7 **yellow**, 8 **blue** and 9 **red** dots to represent votes for three different parties.

If there was just one constituency seat, **red** would win. But the 24 voters are split between 3 constituency seats.

Working in the community often requires understanding electoral systems.

- Arrange the boundaries so that **red** has the most seats.
- Arrange the boundaries so that **blue** has the most seats.
- Arrange the boundaries so that **yellow** has the most seats.
- Try to make a similar puzzle with 4 colours.

Comment?

working with others

# Votes are counted in **different ways** **in different countries** – and in the UK a number of different systems are used.



We can model this with voting in a youth club.

The club has 11 members.  
The club has a little money to spend and is trying to choose between:

- set of disco lights
- pool table
- trampoline.

The members vote to show how the money should be spent.

**Count the votes using the three different systems.**

**What should the club buy?**

**Comment?**

**Voluntary sector organisations are often run by elected committees. Different ways of counting the votes give different results.**

### **First past the post**

Only count people's first preference.  
Which has the most votes?

### **Transferable vote**

Which has the least votes?  
Re-allocate those votes to their second preference.  
Which has the most votes now?

### **Borda points**

Give 3 points for each first choice, 2 points for each second choice and one point for each third choice.  
Add the scores.  
Which has the highest score?

working with others

Count out the voting slips and sort them by:

- first past the post
- transferable vote
- Borda points.



Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>1</b>
pool table	<b>2</b>
trampoline	<b>3</b>



Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>3</b>
pool table	<b>2</b>
trampoline	<b>1</b>



Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>2</b>
pool table	<b>1</b>
trampoline	<b>3</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>1</b>
pool table	<b>2</b>
trampoline	<b>3</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>3</b>
pool table	<b>2</b>
trampoline	<b>1</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>1</b>
pool table	<b>2</b>
trampoline	<b>3</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>2</b>
pool table	<b>1</b>
trampoline	<b>3</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>3</b>
pool table	<b>2</b>
trampoline	<b>1</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>3</b>
pool table	<b>2</b>
trampoline	<b>1</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>1</b>
pool table	<b>2</b>
trampoline	<b>3</b>

Place **1** in the box by your first choice, **2** in the box for your second choice and **3** in the box for your third choice.

set of disco lights	<b>3</b>
pool table	<b>2</b>
trampoline	<b>1</b>

## 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](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](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.