

Mathematics Year 1: Mittens

Introduction

Pupils use a computer program to sort mittens according to the shape patterns on the back of the mitten.

Skills involved

What will the children learn?

Pupils will use mathematical names for shapes and classify objects in simple ways. They will also learn how to frame questions that can be answered 'yes' or 'no'.

What prior experience do the children need?

- Familiarity with sorting activities and the appropriate language
- Vocabulary for basic shapes and colours.

Equipment

- A computer with sorting game mittens loaded
- If you are using this activity with the whole class, a data projector and whiteboard is useful, or you could connect your computer to a large-screen TV monitor
- Plane shapes
- Mitten activity sheets (included in this file)
- Pencils and crayons or pre-cut sticky shapes.

The Lesson

- Explain to the pupils that they are going to teach the computer how to recognise a mitten
- Go to http://www.mape.org.uk/activities/sorting_games/index.htm. Click on mittens
- Ask a pupil to come and point to one of the mittens
- Before clicking on it, ask the pupils to describe it using colours and mathematical names for shapes
- As you play the game, read out the questions and discuss why the criteria do or do not fit the chosen mitten. Repeat as necessary
- If using this activity as a teacher-led group activity, select 'Make a game'. Pupils pose their own questions, using their knowledge of shape, to sort the mittens
- Give each pupil a mitten activity sheet and ask them to design a mitten using different shapes. You can specify colours and numbers, or the total number of shapes. Pupils could draw round and colour shapes, or use pre-cut sticky shapes.

Why are we using ICT?

The program provides an immediate response to the child's question. The objects are clear and their differences easily visible. ICT makes it easy to demonstrate to the whole class.

References

QCA Schemes of Work ICT Unit 1A: An introduction to modelling; Unit 1D: Labelling and classifying

<http://www.standards.dfes.gov.uk/schemes2/it/?view=get>

National Numeracy Strategy Year 1: Organising and using data, Measures, shape and space

http://www.standards.dfes.gov.uk/numeracy/teaching_resources/

Where do we go next?

- If you have 'Made a game', play this with the whole class during the plenary session
- Stick a large 'Yes' label to one side of the board and a large 'No' label to the other side of the board
- Choose two children to hold their mittens up. Can the class suggest a question that would differentiate between the two mittens? Remind the children that the answer must be 'Yes' or 'No'
- The pupils holding the mittens listen to the question and stand by the appropriate label
- Is there another question pupils could ask?
- 'What question could we ask to make ... sit under the yes (no) label instead?'
- Repeat until all pupils have had a go
- Sort collections of other objects – shoes, books, hair slides, buttons etc.

Differentiating the activity

Use other 'sort files' on the same site for new sorting activities of varying difficulty. Ask children to collect pictures or draw objects to sort where the differences are not so obvious.

Reflecting on their work

During the plenary, discuss the questions asked – were they all sensible? Was there a better way to ask a particular question? Choose a mitten and talk through the questions needed to single out that particular one. Ask the children how the computer could find the 'right' answer... is the computer really clever? How did you help it?