

SEAL Maths Links - Years 5 and 6

New Beginnings

Have children work in small groups to identify a rule each about numbers. For example 'the number is odd', 'the number is less than 50', 'the number is a multiple of 3', 'the number is not...', 'twice the number is more than 50', 'the sum of the digits is even'. Using all their rules... how many numbers can the children find to fit? If they cannot find any, which rule can they change so that some numbers can be found?

Getting on and falling out

SEAL objectives

- I can learn/play in a group and evaluate how well the group learns/plays together

Mathematics objectives

- To solve a problem by representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer.
- To solve a problem using the data-handling process.

Learning activity - Investigation

What types of playground equipment encourage children to play together?

Lesson 1

Ask children, as a whole class, to generate ideas about what the answer to the above question might be. You are likely to get a wide range of answers. Explain that the answers represent their thoughts but how do they know that what they think really is the case? How would they find out whether their ideas are true?

Explain to the children that their task is to use mathematical techniques to find out the answer to the question.

Introduce them to the data-handling process.

1. Plan

In groups, come up with ideas for the sort of data that could be collected to find out the answer to the question.

Bring groups together and create a list of the data to be collected, for example:

- the time children spend playing together on the equipment;
- the number of children on the apparatus at any one time;
- children's views about the equipment, and so on.

Encourage the children to consider collecting continuous data as well as discrete data, for example measuring time spent as well as the number of children playing together or the make-up of the groups who are playing in terms of gender or age.

Discuss how the children will collect the data, how they will measure it, and any equipment needed.

Have the children work in groups to create a form for collecting the data. Bring the groups together to share their ideas and agree on a form that everyone will use. (You might use a program such as Junior Pinpoint to create the form.)

2. Collect data

The children will do this during play-time or lunch-time.

After enough data has been collected, collate the results either on a computer or in a chart compiled by hand.

Lesson 2

Remind children of the data-handling process. Ask which stage they are up to.

3. Process data

Give children the collated data. Discuss ways of presenting the data to answer the question. Ask children to work in groups to present the data, if possible using ICT. Bring the groups together to share some of the different representations. Ask children to evaluate the different representations. Discuss what can be interpreted from the different representations.

4. Interpret data

Set groups the task of writing a conclusion they can draw from the data.

Plenary

Ask children to describe the data-handling process.

Ask them to decide how they might have improved the investigation they have carried out or other questions that they might now ask, thus starting the cycle again.

Suggested related activity Children could use the results from their investigation to design a piece of playground equipment that would encourage cooperative play.

Going for Goals

To link in with Year 5 work, children could set themselves goals in the accurate measuring of angles, and their use of a protractor (perhaps having a sheet of angles to measure during a set time and seeing how much they can improve speed and accuracy).

Problem solving provides an opportunity to reiterate the need to overcome frustrations, to persist and to try out different strategies. As children work through problems, identify places during the process where children have gone up blind alleys, or have discovered that their answers are not appropriate. For example, when solving the problem 'Egg boxes hold 6 eggs. How many boxes do you need to hold 13 eggs?' The answer '2 remainder 1' is not appropriate. Why not?

Similarly, as children work through problems in pairs, ask them to identify something that their partner said or did that helped them towards the solution.

Good to be me

Survey opinions on current issues to explore the idea of majority and minority views. Analyse and present the data in a variety of ways.

Relationships

Ask children to work in pairs to list things that have embarrassed them, or that have the potential to embarrass them. They give these things a rating between 1 and 10. The data can be displayed in a variety of ways.