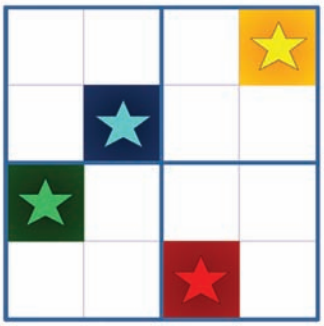
Shape Sudoku

Learning objectives

- **Using and applying:** Follow a line of enquiry; answer questions by selecting and organising information in tables and simple diagrams
- **Understanding shape:** Follow and give instructions involving position

Problem-solving strategy

Trial and improvement



Setting the scene

This activity is suitable for groups or paired workers, but it also works well as a whole-class exercise.

This is a simplified version of the usual number-based Sudoku. For a correct solution, each row, column and 2 × 2 square must contain only one star of each colour. If players submit a result and it is incorrect, the problem starts all over again; however, as with any Sudoku puzzle, this is often easier than trying to adapt a wrong solution. Some children show unexpected ability in solving this kind of problem.

Solving the problem

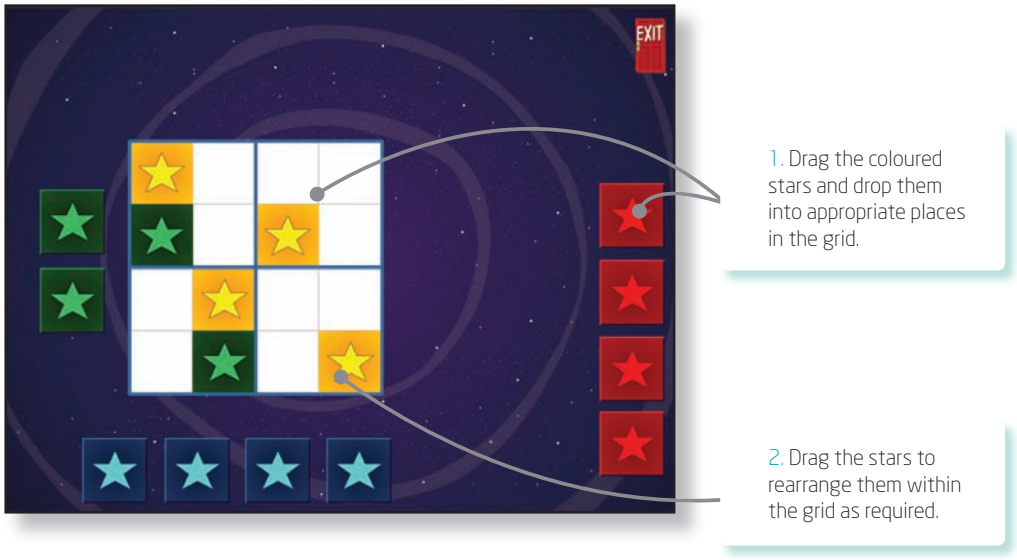
This activity provides an excellent opportunity for using the language to describe position, particularly if using the activity with the whiteboard, because the children will need to tell you where they want to place a colour. You may wish to label each square to make identification easier, for example: rows A, B, C, D and columns 1, 2, 3, 4. There are, of course, many solutions but for a systematic approach there is one easier way to solve the problem. Start by putting the first colour, such as yellow, in different rows and columns, making sure that it only appears once in each small square. Continue this strategy with the next colour, then the third and the fourth. This systematic approach takes away some of the intrigue of guessing and checking, but at the same time it removes some of the frustration of continually getting it wrong.

Key questions

Enquiring: *Have you checked that the position you have chosen for the yellow star is suitable? Why can't the yellow star be placed where suggested? Have you checked that the complete solution you are going to finish with is correct?*
Communicating: *Can you describe the square where you want to place the red star? What is wrong with this suggestion? / Why do you claim it is correct?*

Differentiation

Less confident: Use the follow-up worksheet on page 21 before carrying out the on-screen activity as this is an easier problem. Keep encouraging the children to check their solutions as they work through the on-screen problem to avoid them getting too frustrated by only finding their errors at the end.
More confident: Challenge the children to think of any other systematic approaches they can use to help them to solve the problem.



Follow up

Ask the children to solve the follow-up problem on page 21.

Problems bank

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