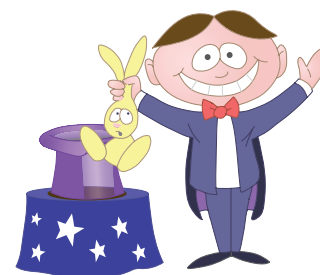


Magic boy: blocks



Learning objectives

- **Using and applying:** Represent the information in a puzzle using diagrams; use these to find a solution
- **Counting and understanding number:** Read, write and order whole numbers to at least 1000

Problem-solving strategies

Act it out
Trial and improvement

Setting the scene

This activity is aimed at groups or paired workers, although it is also suitable for whole-class work. Magic boy will perform a hat trick if the children are able to solve a puzzle from his bag at three levels.

The aim of the problem is to build three columns or 'piles' of blocks so that the conditions given in the problem are satisfied (for example: 'The first pile has one less block than the third'). Blocks can be dragged and dropped from the bag onto the table to create the piles - but players should make sure that they position the piles far enough away from the bag as the blocks cannot be stacked over it. Tell the children that for each problem they should check their solution carefully before clicking 'OK'.

Solving the problem

The problem may be solved just by trial and improvement, but there are other strategies that can also be used. Suggest to the children that they first set out all the blocks they are asked to use into three equal piles, leaving any 'remainder' blocks on the side. Next, follow the instructions focusing on two piles at a time. For example, if the instructions specify 'The first pile should have one less than the third', move a block from the first to the third pile. Then remove or add blocks from one pile at a time until the conditions for all three piles are satisfied.

Key questions

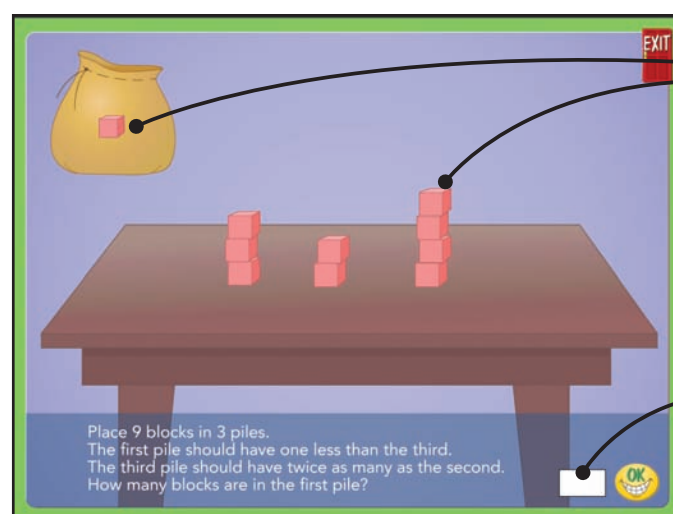
Reasoning: *If the third pile has six blocks and the first has one less, how many should the first pile have? If the third pile has six blocks, which is twice as many as the second pile, how many should the second pile have?*

Communicating: *Can you explain why you are sure that your solution is correct? Do your blocks correspond to the instructions?*

Differentiation

Less confident: There are three levels in this activity, with level A being the least difficult. Ensure that the children start with level A before moving on to levels B and C. If necessary, provide them with practical classroom resources (such as cubes or blocks) that they can use to help them solve the problem.

More confident: Challenge the children to devise their own strategy to solve the problem. Use a timer to add the additional element of speed to the activity.



1. Drag blocks from the bag onto the table.

2. Type answer in box and click 'OK'.

Follow up

Ask the children to solve the follow-up problems on page 19.

Problems bank

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