



## Puzzles Year 3 Blocks

### Introduction:

In this activity children have to remove all the blocks from a grid by moving them adjacent to an identical block. Blocks can slide horizontally or drop vertically, but they cannot be moved up the grid. Completion of one grid moves the user to the next level.

There are 10 levels of difficulty.

Children can work in pairs or alone to solve the problem.

### Resources

- A computer with Internet access.
- An interactive whiteboard is useful for demonstration, but is not essential, as children will quickly understand what to do.
- You will need to download the Imagine logo plug-in from <http://www.logo.com/downloads/plugin-ins.html>
- Paper and pencils to note down strategies and problems – this is useful in any final discussion.

### Previous learning

The children need to have some concept of problem solving by trial and error.

### Learning Objectives

To be able to try out different strategies and observe the effects.

To realise that there may be more than one solution to a problem.

### What to do

Load [http://www.logo.com/imagine/project\\_gallery/blocks.HTM](http://www.logo.com/imagine/project_gallery/blocks.HTM)

Explain that the task is to clear all the blocks from the grid.

Tell the children that the blocks can slide horizontally (remind children what horizontally means) or they can fall, but they cannot be moved up the screen.

If possible demonstrate Level 1 asking children what moves should be made.

Does it matter which block is moved first? Why?

Where should we move the orange block?

What would happen if...?

If a level is completed successfully the user is automatically advanced to the next level.

Show the Level 2 screen and ask for suggestions as to which block to move first. There are several ways to do it and children should be encouraged to understand this.

Explain to the children that they should try to get through as many levels as they can. They may wish to jot down the main problems they encounter and the strategies for overcoming these.



In discussion ask the children to highlight the problems that they encountered. For example at what point is the order of moving blocks important? So it is important to plan ahead here and to think what will happen if... From Level 5, when there are an odd number of blocks these must all be eliminated simultaneously. How can this be achieved?

At Level 7 it appears that one block must be moved up the screen. What must you do to overcome this?

If children were able to work in twos how did this help?

### Differentiation

Encourage discussion and the sharing of ideas.

### The role of ICT

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ICT simulates a problem that could not be solved in the classroom by conventional means.

**Follow-up suggestions**

Children could then try to devise a simple grid and use coloured squares of paper to set their own challenges. How easy is it to create one that is challenging, but can still be solved?

**Assessment**

What levels did the children reach?

**Weblinks**

Logotron's Blocks Game

[http://www.logo.com/imagine/project\\_gallery/blocks.HTM](http://www.logo.com/imagine/project_gallery/blocks.HTM)

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