

## Problems Year 4: Jugs

### Introduction

This activity can be found via the Interactive Fun Puzzles site – scroll down Level 2 activities to Unmarked Jugs <http://www.vtaide.com/png/puzzles.htm>

From the Puzzles submenu choose Capacity.

### What will the children learn?

Problem solving activities help children to develop a strategic approach and a spirit of perseverance. While these problems can be tackled by trial and error, general algorithms can be used to help speed up the process.

### Equipment

- A computer with Internet access
- An interactive whiteboard is useful for demonstration
- The activity available from <http://www.vtaide.com/png/puzzles.htm>

### The activity

Versions of this activity have been around on computers since they first came into schools. The program provides an environment for trial and error exploration but also allows children to work out strategic approaches.

The player has two unmarked jugs of given capacities and must accurately measure out a third amount. The task is performed by pouring liquid from one jug to another and discarding some of it. As the jug sizes and the target vary each time the game is loaded it can be played repeatedly.

You could introduce the activity to the whole class using an interactive whiteboard.

Working on the problems in pairs allows children to pool ideas and talk mathematically.

### Why are we using ICT?

ICT simulates a series of challenges that could not be solved in the classroom by conventional means. Using the actual jugs with water is impractical and pencil and paper methods would be very tedious. The on-screen version allows for endless experimentation until the solution is found.

### Where do we go next?

When one Jugs problem is completed satisfactorily a number of other challenges are presented. However, to get to another Jugs puzzle it is necessary to go back to the main menu and select Solve the Puzzles then Jugs again.