



## Rotations Lesson Plan

### Main focus of activity:

- To introduce the idea of Rotations using the arrangement of a stage

### Learning objectives:

- To be able to interpret co-ordinates
- To be able to describe a rotation in words
- To be able to fully describe a rotation using amount of turn in degrees, the centre of rotation, and direction of turn. (clockwise, anti-clockwise)

### Links to curriculum: Links to the maths curriculum are as follows

- Co-ordinates
- Rotations

### Activity outline:

The idea here is that we make a real world link with the use of Rotations. Pupils are asked to describe the rotations that would be required for each shape to make the desired stage layout. These instructions can be communicated via the use of a fictional email which the pupils are writing to the stage manager.

### Introduction

- Students should work in pairs for this task.
- The problem is brought in to a real life context as the stage blocks have been prepared and delivered to the arena but have just been unloaded and put anywhere.
- Lower ability pupils can describe their rotations in words if needed, e.g. "The yellow triangle needs to be turned clockwise a quarter turn".
- The fact that is going into an email which will be sent places an emphasis on clear communication of the maths. Something that is a pillar within the new curriculum.

### Starter

The starter allows pupils to showcase their understanding of angle and direction of rotation. You should use this opportunity to highlight any misconceptions and bring in key vocabulary instead of quarter or half turns. Prompt more able pupils to describe each rotation in 2 ways.

### Main Activity

The main activity is in the prepared resource pack and covers some different assortments of stage layouts. The crane on the images is effectively the centre of rotation. The cross on each shape represents where the shape would be lifted by the crane. Each stage layout needs to be communicated in the form of an email. There is a link to literacy at this point.

Teachers may feel it prudent to start more able pupils off on harder stage layouts as they will be more challenging. Some of the rotations involve rotating more difficult shapes.



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More able pupils are expected to describe the rotations fully. In some cases teachers may want pupils to create their own stage layout from shapes that have been designated. A blank template has been uploaded for this purpose.

There are 'cheat' sheets included which may be useful to guide pupils to the location of the final layout.

### **Plenary**

Challenge each other to create their own problems using two blank stage layouts. Pupils need to check each other's instructions for clarity and accuracy.