

# Discussion Problems

## Step 3: Translations

Teaching Note: For Q2, you may want to provide additional copies, for the children to repeat the exercise in a pair.

### National Curriculum Objectives:

Mathematics Year 6: (6P2) [Draw and translate simple shapes on the coordinate plane, and reflect them in the axes](#)

Mathematics Year 6: (6P3) [Describe positions on the full coordinate grid \(all four quadrants\)](#)

### About this resource:

This resource has been designed for pupils who understand the concepts within [this step](#). It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

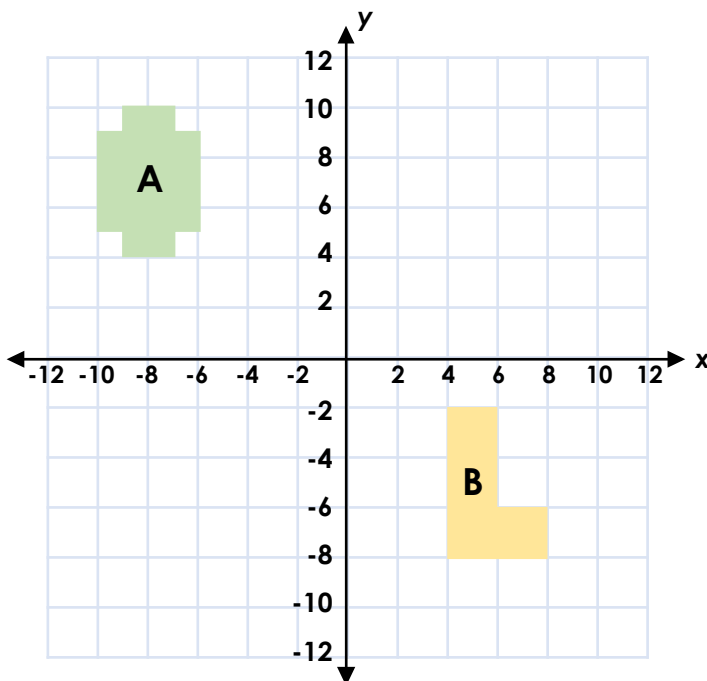
We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More [Year 6 Position and Direction](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

# Translations

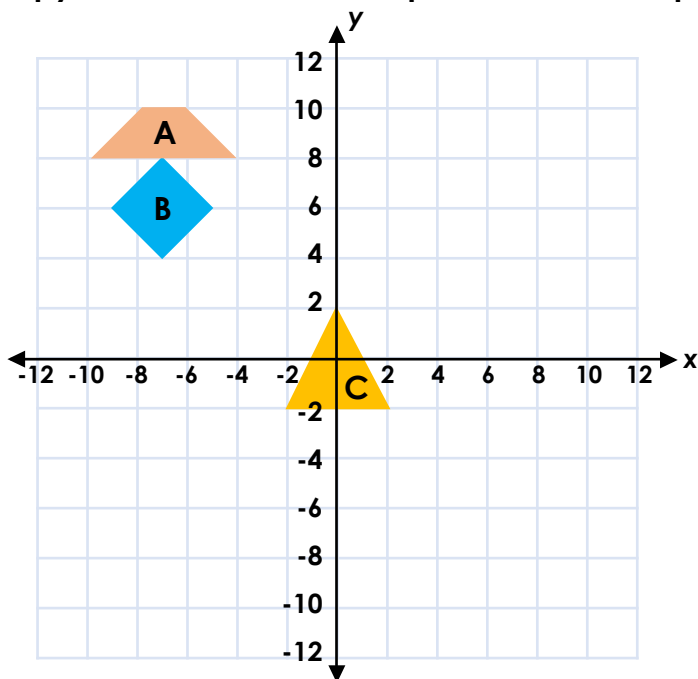
1. Translate the shapes in any direction so that they are one square apart. Each shape must have two movements in their translation and cross at least one quadrant.



Explore and describe the different ways that the shapes could be translated.

DP

2. Copy and translate the shapes into different positions to create a face.



## Rules

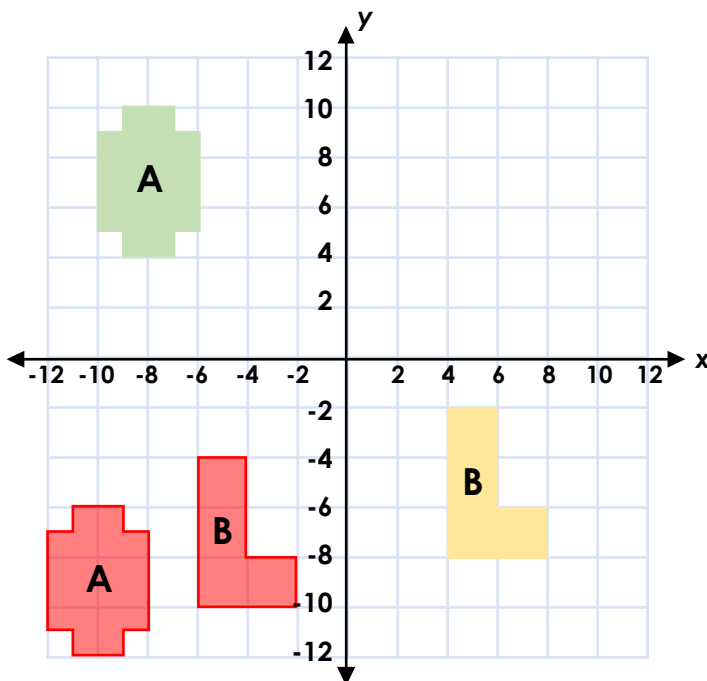
1. You can copy and translate each shape up to 4 times.
2. Your face must be symmetrical.
3. You cannot show your design to your partner until you have described all the translations you completed.

Now look at your partner's translated face. Have you created the same face? Can you describe your partner's translations?

DP

# Translations

1. Translate the shapes in any direction so that they are one square apart. Each shape must have two movements in their translation and cross at least one quadrant.

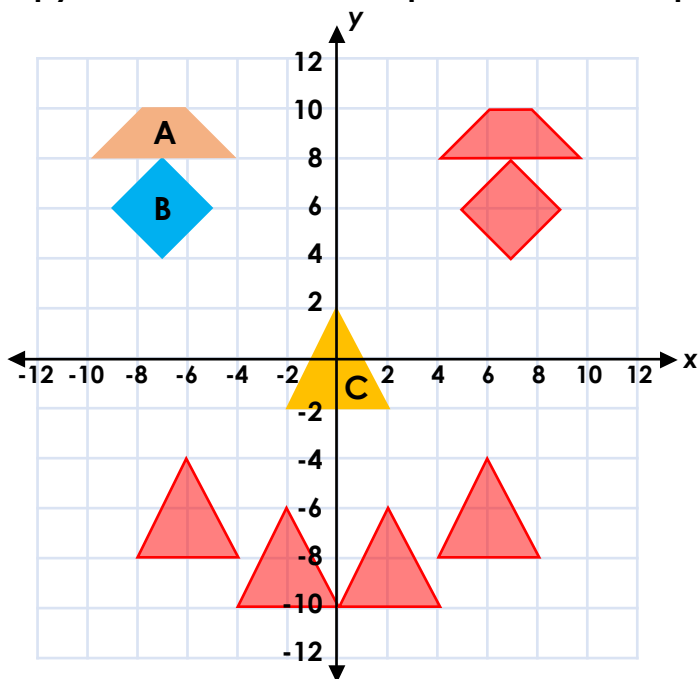


Explore and describe the different ways that the shapes could be translated.

**Various answers, for example: Translate shape A 16 down and 2 to the left and translate shape B 2 down and 10 to the left.**

DP

2. Copy and translate the shapes into different positions to create a face.



### Rules

1. You can copy and translate each shape up to 4 times.
2. Your face must be symmetrical.
3. You cannot show your design to your partner until you have described all the translations you completed.

Now look at your partner's translated face. Have you created the same face? Can you describe your partner's translations? **Various answers, for example: A – translated 14 to the right. B – translated 14 to the right. C – translated four times: 6 down and 6 to the right; 6 down and 6 to the left; 8 down and 2 to the right; 8 down and 2 to the left.**

DP