

One Quadrant:

4. Match the shapes drawn on the grid to the correct person using the coordinates they have given.



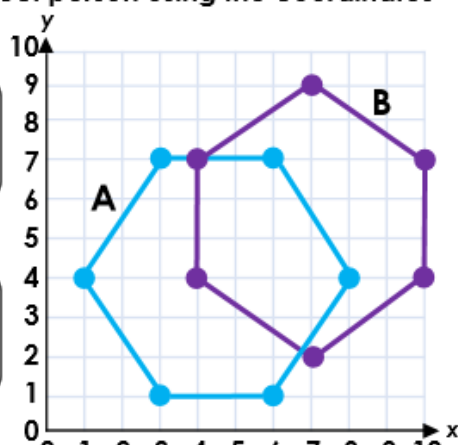
Qasim

My coordinates are: (1, 4); (3, 7); (6, 7); (8, 4); (6, 1) and (3, 1).



Atifa

My coordinates are: (4, 4); (4, 7); (7, 9); (7, 2); (10, 4) and (10, 7).



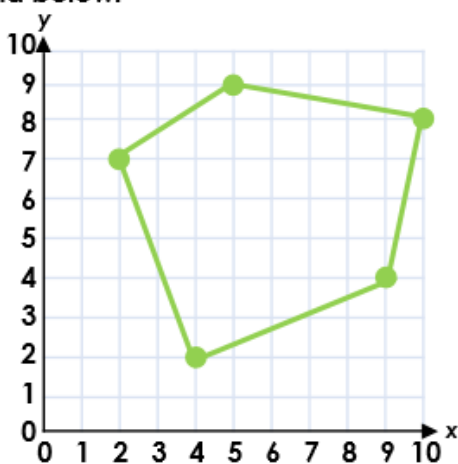
V/F
HW/Ext

5. Alan has made an irregular pentagon on the grid below.

Three of the coordinates are:

(2, 7) (10, 8) (5, 9)

What are the other two coordinates?



V/F
HW/Ext

6. Alissa and Ray have been given five coordinates to plot on the grid below.

(4, 6) (4, 10) (8, 6) (8, 10) (2, 8)



Alissa

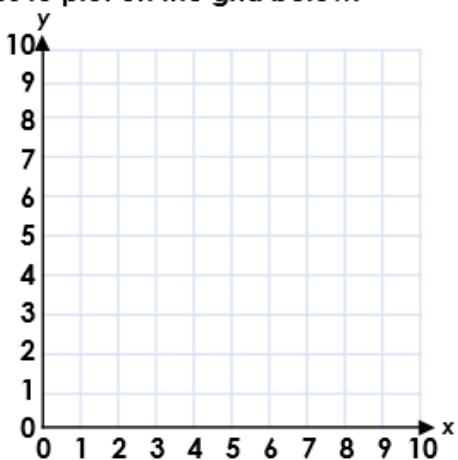
The coordinates can be joined to make a regular pentagon.

The coordinates can be joined to make an irregular pentagon.



Ray

Who do you agree with? Explain your answer.



RPS
HW/Ext

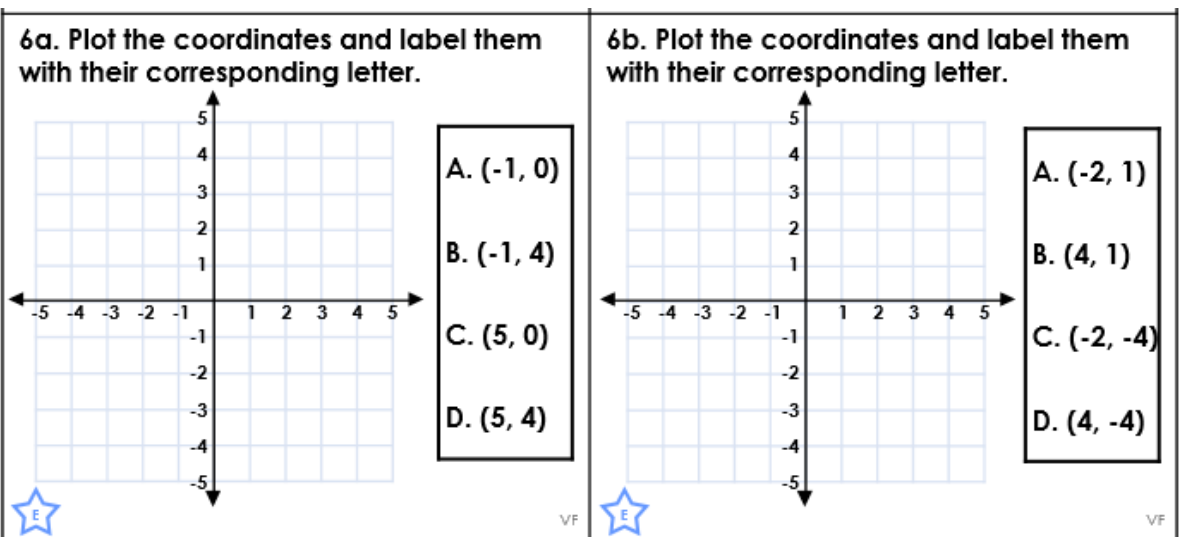
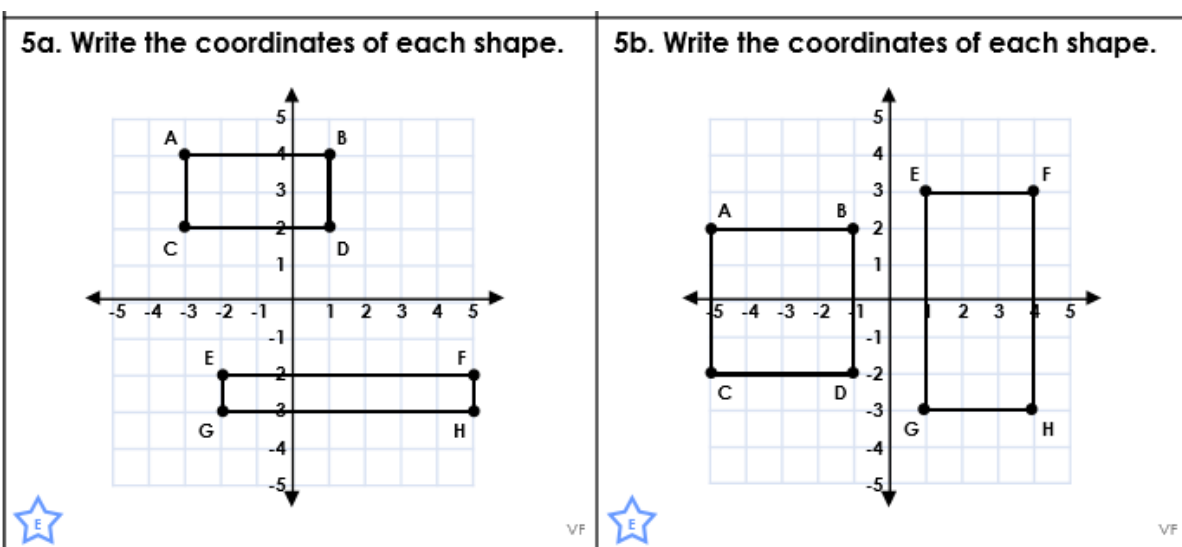
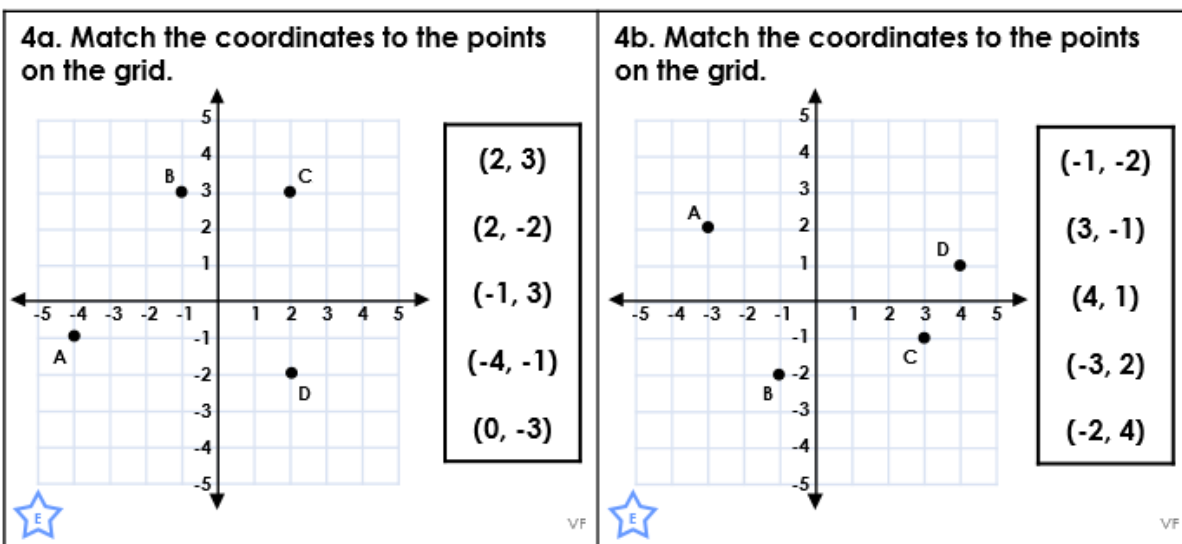
Answers:

4. Qasim = A; Atifa = B

5. (4, 2) and (9, 4)

6. Ray is correct because the coordinates create a pentagon where length of some sides and the angles are different.

Four Quadrants:

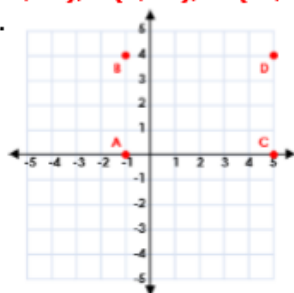


Answers:

4a. A (-4, -1), B (-1, 3), C (2, 3), D (2, -2)

5a. A (-3, 4), B (1, 4), C (-3, 2), D (1, 2),
E (-2, -2), F (5, -2), G (-2, -3), H (5, -3)

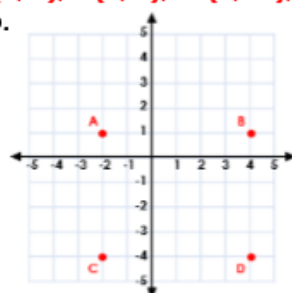
6a.



4b. A (-3, 2), B (-1, -2), C (3, -1), D (4, 1)

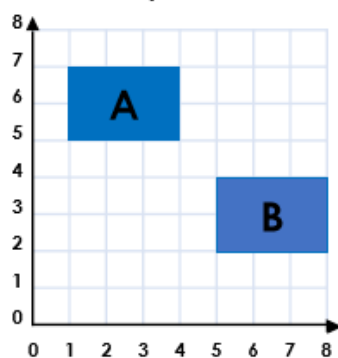
5b. A (-5, 2), B (-1, 2), C (-5, -2), D (-1, -2),
E (1, 3), F (4, 3), G (1, -3), H (4, -3)

6b.



Translation:

4a. A shape is translated from position A to position B. Complete the sentence:

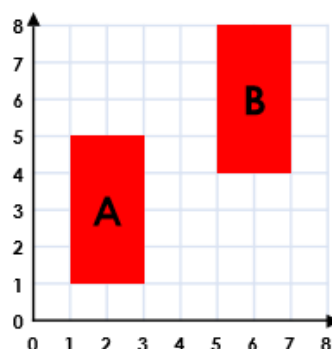


The shape has moved squares to the right and squares down.



VF

4b. A shape is translated from position A to position B. Complete the sentence:

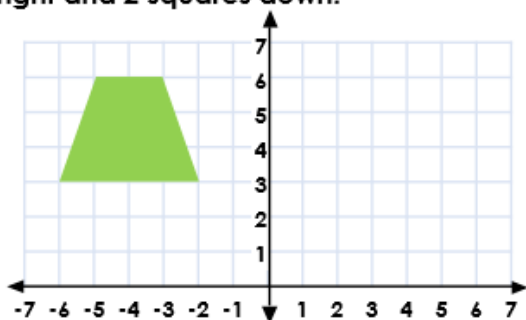


The shape has moved squares to the right and squares up.



VF

5a. Translate this shape 4 squares to the right and 2 squares down.

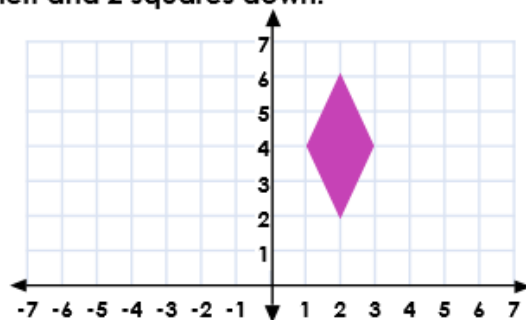


What are its new coordinates?



VF

5b. Translate this shape 3 squares to the left and 2 squares down.

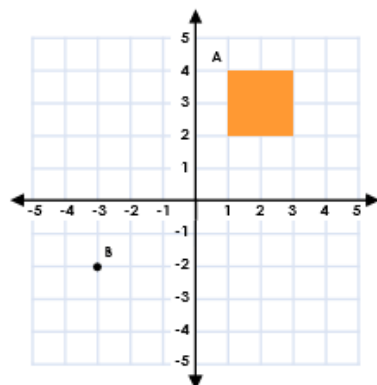


What are its new coordinates?



VF

6a. This shape is translated so that point A moves to point B.

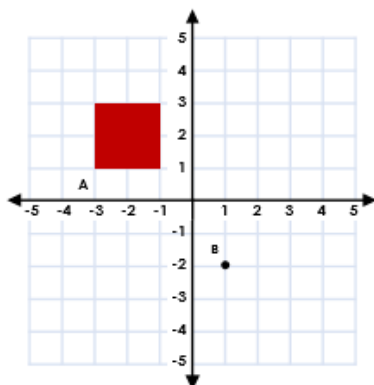


Draw the shape in its new position and write down the coordinates.



VF

6b. This shape is translated so that point A moves to point B.



Draw the shape in its new position and write down the coordinates.



VF

Answers:

4a. 4, 3

5a. (-2, 1), (-1, 4), (1, 4), (2, 1)

6a. Shape drawn in position:

(-3, -2), (-3, -4), (-1, -4), (-1, -2)

4b. 4, 3

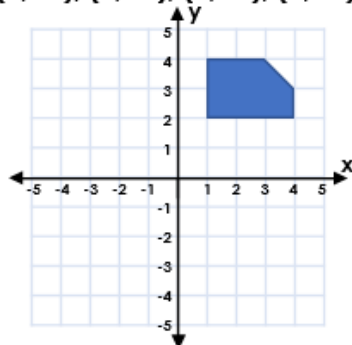
5b. (-1, 4), (0, 2), (-1, 0), (-2, 2)

6b. Shape drawn in position:

(1, -2), (3, -2), (1, 0), (3, 0)

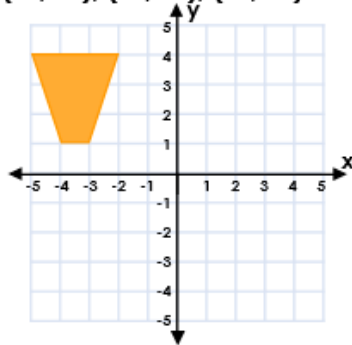
Reflection:

4a. True or false? If this shape is reflected in the y axis, the new coordinates will be (1, -2), (1, -4), (3, -4), (4, -2), (4, -3).



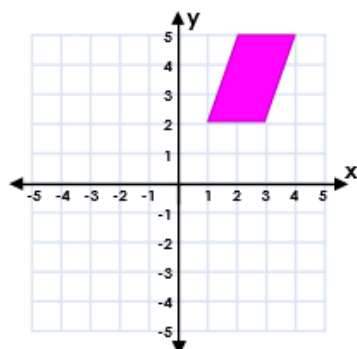
VF

4b. True or false? If this shape is reflected in the x axis, the new coordinates will be (-2, -4), (-3, -1), (-4, -1), (-5, -4).



VF

5a. Reflect the shape in the x axis and complete the coordinates of the new shape.

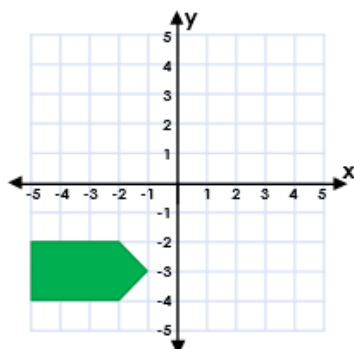


(1,-2)



VF

5b. Reflect the shape in the y axis and complete the coordinates of the new shape.

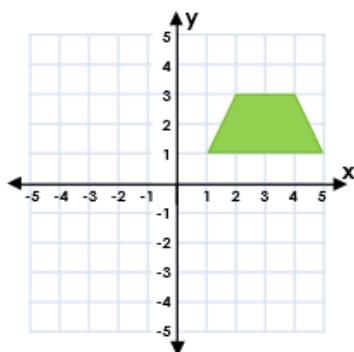


(1,-3)



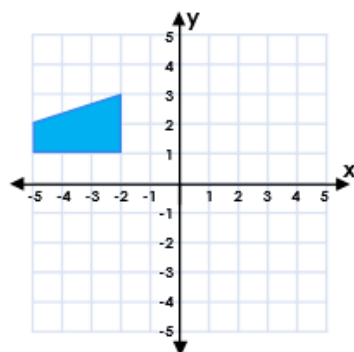
VF

6a. Reflect the shape in the y axis. Then reflect both shapes in the x axis.



VF

6b. Reflect the shape in the y axis. Then reflect both shapes in the x axis.



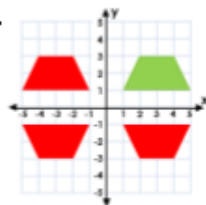
VF

Answers:

4a. **False.** The correct coordinates are (-1, 2), (-1, 4), (-3, 4), (-4, 2), (-4, 3).

5a. (2, -5), (3, -2), (4, -5)

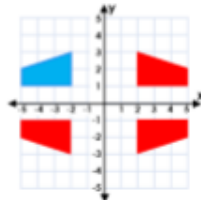
6a.



4b. **True**

5b. (2, -2), (2, -4), (5, -2), (5, -4)

6b.



Reasoning and Problem Solving

Position and Direction Consolidation – Year 6

National Curriculum Objectives

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

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

About This Resource

This resource is aimed at Year 6 Expected and has been designed to give children the opportunity to consolidate the skills they have learned in Autumn Block 4 – Geometry: Position and Direction.

The questions are based on a selection of the same ‘small steps’ that are addressed in the block, but are presented in a different way so children can work through the pack independently and demonstrate their understanding and skills.

Small Steps

Coordinates in the first quadrant

Coordinate in four quadrants

Translations

Reflections

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

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

WE'RE HIRING!

Playground Engineers



The local council are looking for children to help plan the redevelopment of a major parkland. The area has fallen into disrepair and is posing a risk to the health and safety of those using it.

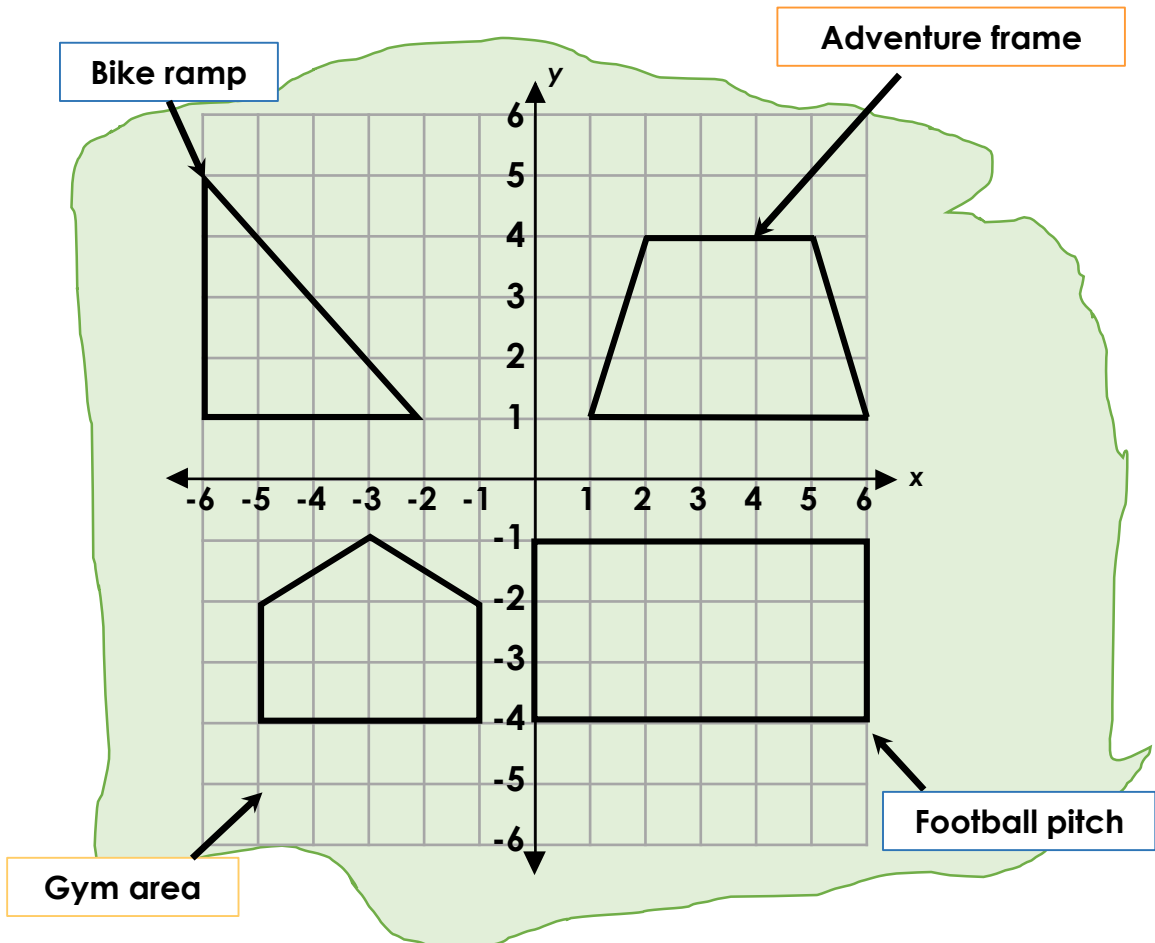
Have you got what it takes to plan and create an inspiring playground?
The council want to hear from you!

Show your planning credentials by completing the job application pack below.

Here is the map of the playground space.

The areas have been labelled and a grid has been placed over to help with planning.

You will need this to answer questions in the pack below.



Reasoning and Problem Solving
Position and Direction Consolidation – Year 6

1. Write the co-ordinates for the vertices of each piece of large equipment.



Bike ramp

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Adventure frame

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Gym area

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Football pitch

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The council have now reviewed the waterworks and electric services to the area and have realised the bike ramp will run across a large water main. The bike ramp will need to move to avoid crossing the pipe.

The section of pipe which crosses the area runs from $(0, 6)$ to $(-6, 6)$, so you will need to move the bike ramp.

Translate the ramp so that the pipe is free from the ramp and easy to access. The ramp must be 2 squares away from the pipe.

2. Write the new coordinates for the ramp.

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Your email is down, you can't send the new plan and the builder needs to get to work. Can you write instructions to describe the translation of the bike ramp? Your assistant will read these to the builder on the phone.

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Reasoning and Problem Solving
Position and Direction Consolidation – Year 6

3. The council have had a change of plans and would like to swap the football pitch and the adventure frame to avoid balls hitting people in the park. Reflect the two pieces of equipment and write their new co ordinates below.



Adventure frame

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Football pitch

--	--	--	--

What do you notice about your new coordinates? Compare them to your previous answers:

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The council have had a complaint about the plans from a local resident, they feel the bike ramps are too close to their garden and create an eyesore. They would be happier if they were further away.

4. The ramps will need to be moved further away, and so will be swapped with the gym area. Using the new coordinates of the bike ramp from Q2, reflect them across the x axis. What are the new coordinates for the two structures?



Bike ramp

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Gym area

--	--	--	--	--

Will the gym area interfere with the pipe mentioned earlier?

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Congratulations! YOU GOT THE JOB!

Reasoning and Problem Solving
Position and Direction Consolidation – Year 6

The coordinates for each question can be written in any order.

1. Bike ramp

$(-6, 5)$

$(-2, 1)$

$(-6, 1)$

Adventure frame

$(1, 1)$

$(2, 4)$

$(5, 4)$

$(6, 1)$

Gym area

$(-5, -4)$

$(-5, -2)$

$(-3, -1)$

$(-1, -2)$

$(-1, -4)$

Football pitch

$(0, -1)$

$(6, -1)$

$(6, -4)$

$(0, -4)$

2. $(-6, 4)$ $(-6, 0)$ $(-2, 0)$

Translate the bike ramp 1 square down.

3. Adventure frame

$(-1, 1)$

$(6, -1)$

$(5, -4)$

$(2, -4)$

Football pitch

$(0, 1)$

$(0, 4)$

$(6, 1)$

$(6, 4)$

Only the y axis coordinates change. The negative values become positive, the positive values become negative.

4. Bike ramp

$(-6, -4)$

$(-6, 0)$

$(-2, 0)$

Gym area

$(-5, 4)$

$(-1, 4)$

$(-1, 2)$

$(-3, 1)$

$(-5, 2)$

No, the gym area will not interfere with the pipe as it is two squares away, and this was the required distance stated in question 2.