

Diving into Mastery

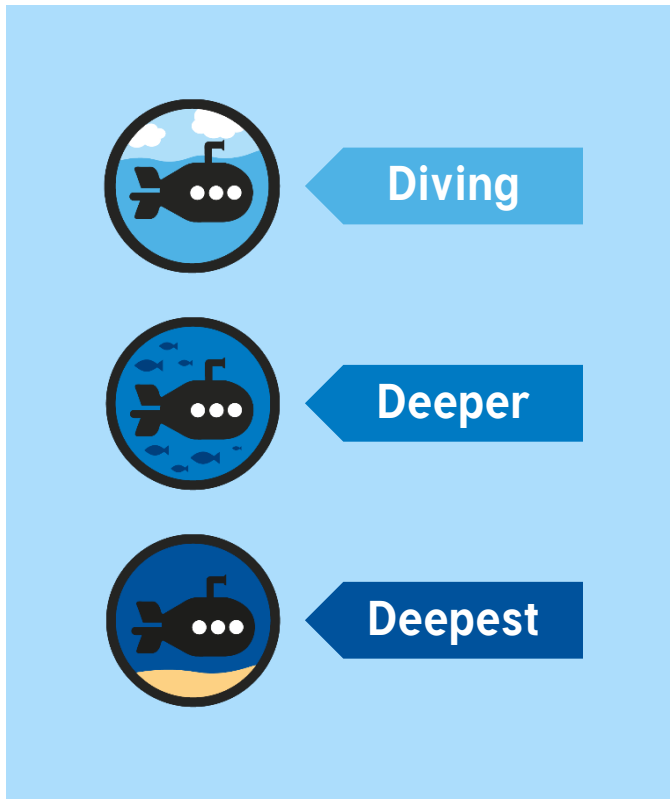


Translation with Coordinates

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Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

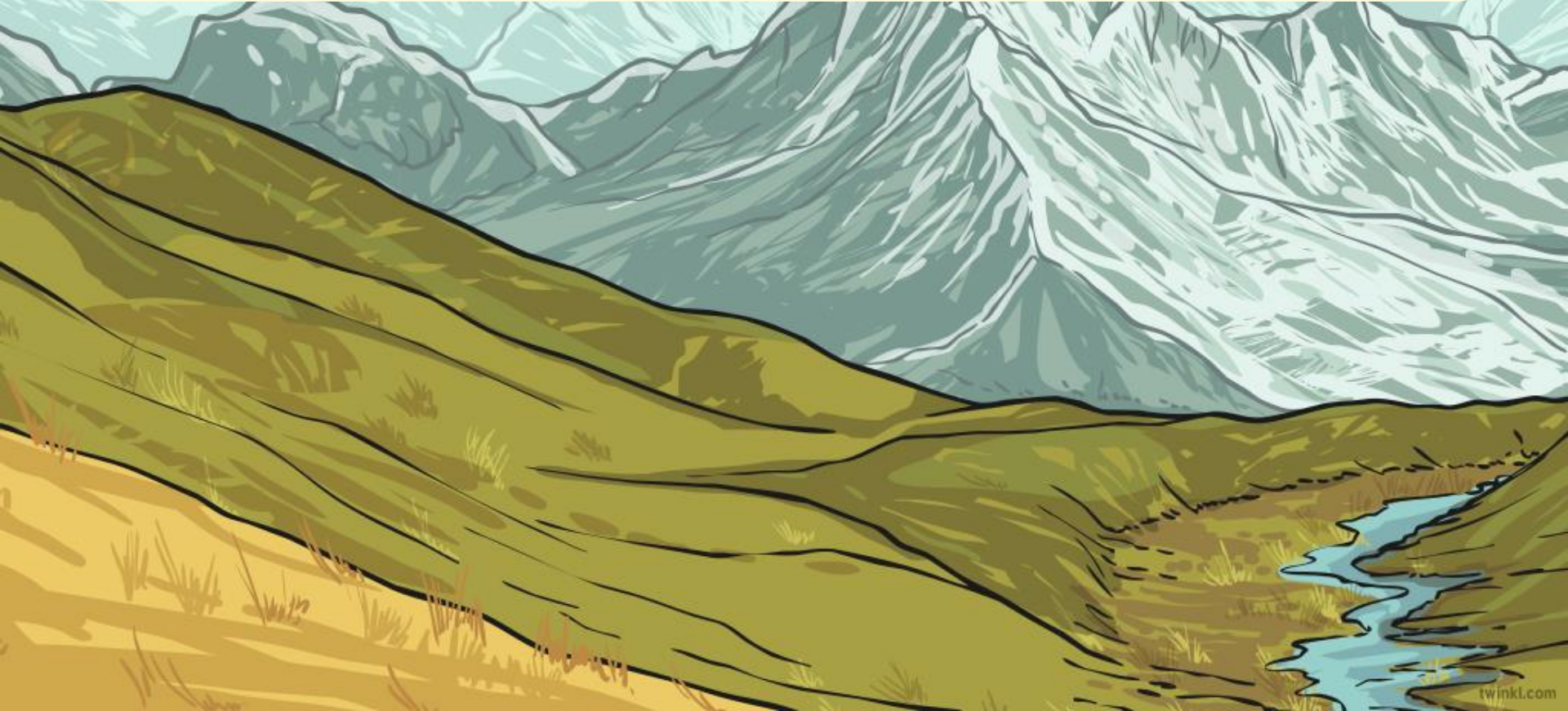


These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

National Curriculum Objective

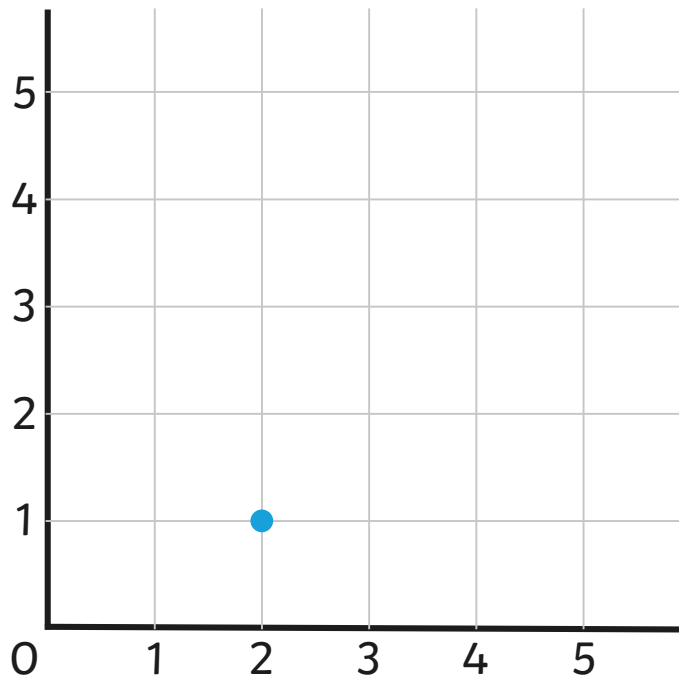
- Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.





The second digit would change: the y coordinate.

If it were to move upwards, which digit would change?

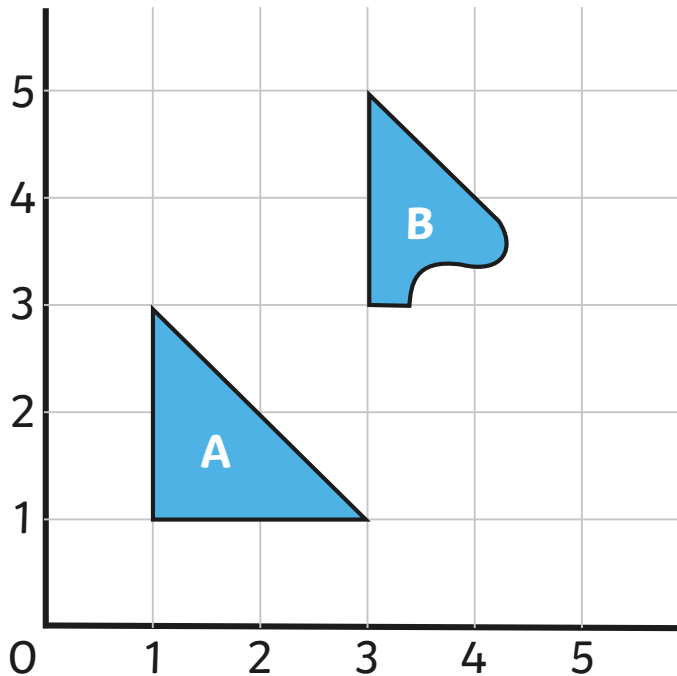




James has translated triangle A to its new position, B.

Describe the translation to your learning partner. 2 right, 2 up.

What are the coordinates of the missing vertex? (5,3)

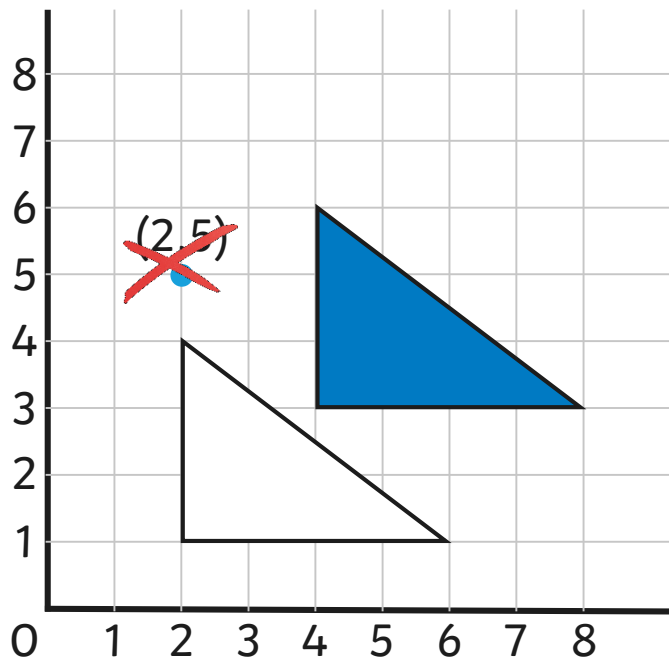




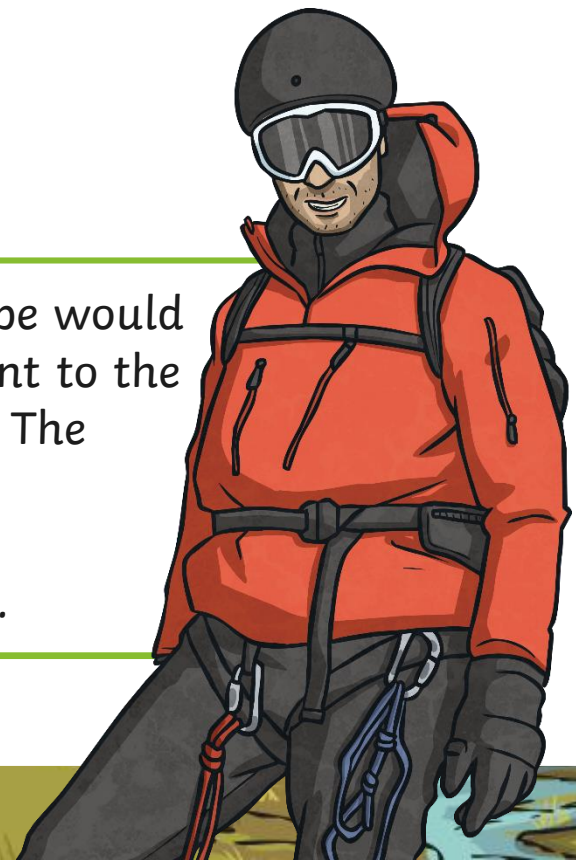
Are these statements true or false?

If the triangle was translated down, the y coordinate would change.

The coordinates of the translated shape could be (2,1) (6,1) (2,5).



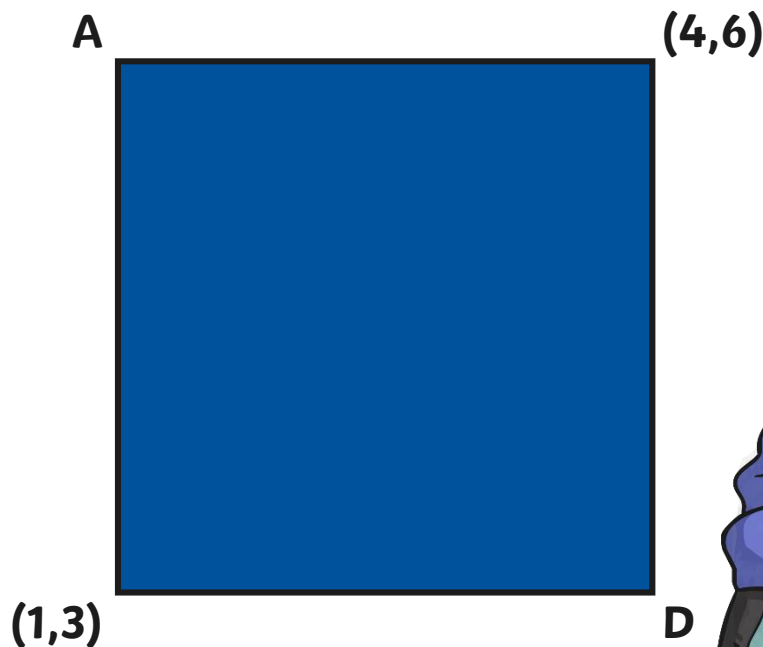
False. This shape would not be congruent to the original shape. The final pair of coordinates should be (2,4).





Sienna has translated a square in the first quadrant (1 left, 2 up). Here is the translated square. What were the original coordinates of vertices A and D?

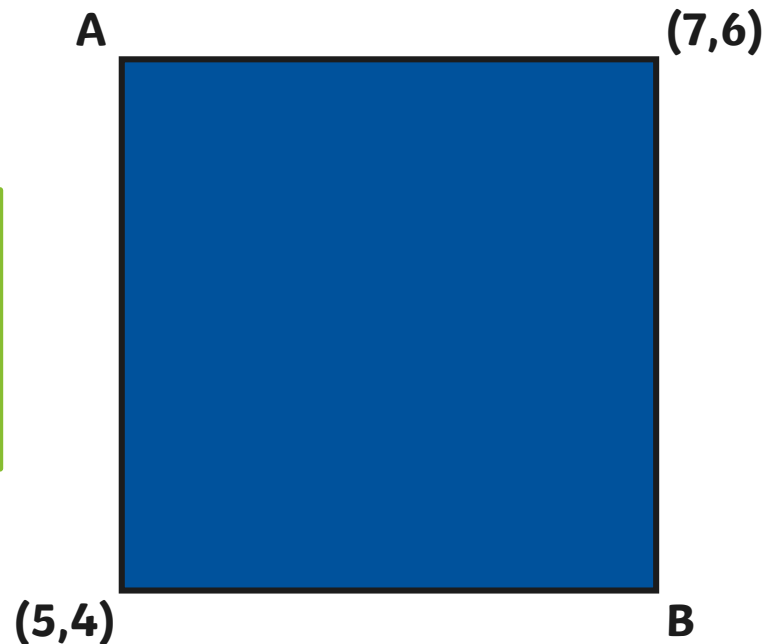
Vertex A (2,4)
Vertex D (5,1)





Celia has drawn a square in the first quadrant but has hidden the grid. She reveals the coordinates of two vertices.

When Celia translates the square, one of the coordinates is $(6,5)$. What are the possible ways the square has been translated?

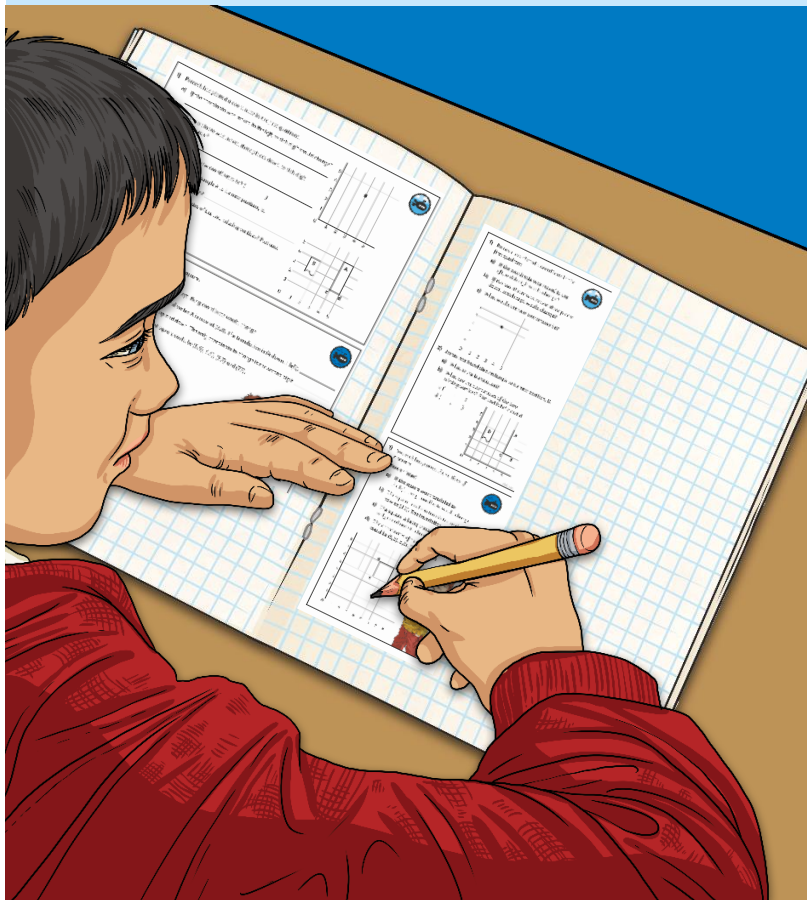


(left 1, up 1)
(left 1, down 1)
(right 1, up 1)
(right 1, down 1)



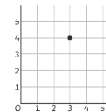
Translation with Coordinates

Dive in by completing your own activity!



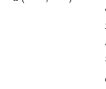
1) Ramesh has plotted a coordinate in the first quadrant.

- If the coordinate was moved to the left, which digit would change?
- If the coordinate was moved 1 down, which digit would change?
- What would the new coordinates be?



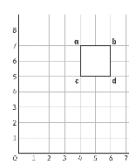
2) James has translated rectangle A to its new position, B.

- What is the translation?
- What are the coordinates of the two missing vertices? Plot and label c and d.



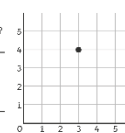
3) Svarvek has plotted the vertices of a square.

- True or False? If the square was translated to the left, the y coordinate would change.
- The square has been translated and vertex A is now at (3,3). The translation is (4 down, 1 left).
- The square is being translated up and down. The only coordinate to change is the second digit.
- The coordinates of the translated square could be (5,6), (6,6), (5,7) and (6,7).



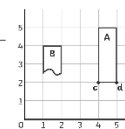
1) Ramesh has plotted a coordinate in the first quadrant.

- If the coordinate was moved to the left, which digit would change?
- If the coordinate was moved three places down, which digit would change?
- What would the new coordinates be? (.)



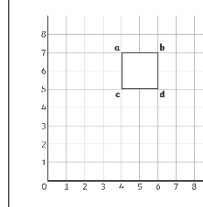
2) James has translated rectangle A to its new position, B.

- What is the translation?
- What are the coordinates of the two missing vertices? Plot and label c and d.



1) Svarvek has plotted the vertices of a square.

- True or False? If the square was translated to the left, the y coordinate would change.
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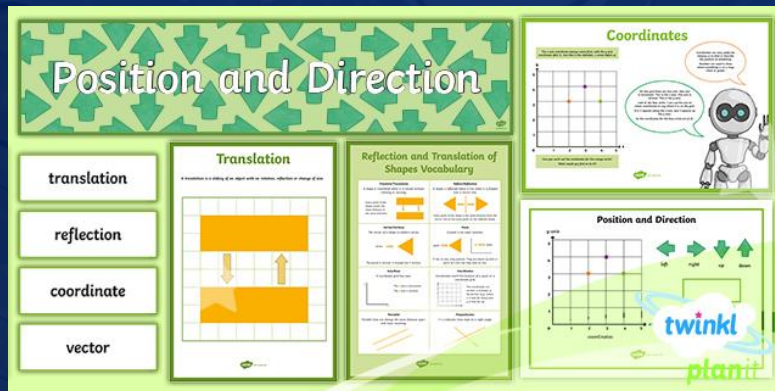
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Need Planning to Complement this Resource?

National Curriculum Aim

Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

For more planning resources to support this aim, [click here](#).



Position and Direction

- translation
- reflection
- coordinate
- vector

Translation

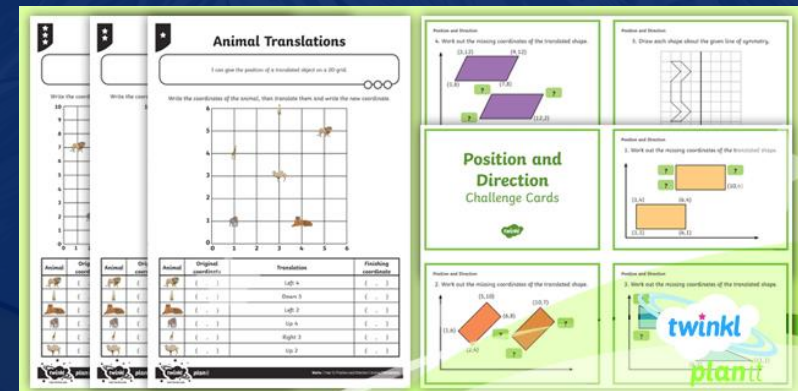
A translation is sliding the shape onto a new position without changing its size.

Reflection and Translation of Shapes Vocabulary

Coordinates

Position and Direction

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Animal Translations

I can give the position of a translated object on a 20x20 grid.

Write the coordinates of the animal, then translate them and write the new coordinates.

Animal	Original coordinates	Translation	Finalising coordinates
1	(1, 2)	Left 4	(-3, 2)
2	(1, 1)	Down 3	(1, -2)
3	(1, 3)	Left 2	(-1, 3)
4	(1, 4)	Up 4	(1, 8)
5	(1, 5)	Right 3	(4, 5)
6	(1, 6)	Up 2	(1, 8)

Position and Direction Challenge Cards

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