

Discussion Problems

Step 2: Draw on a Grid

National Curriculum Objectives:

Mathematics Year 4: (4P3b) [Plot specified points and draw sides to complete a given polygon](#)

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.

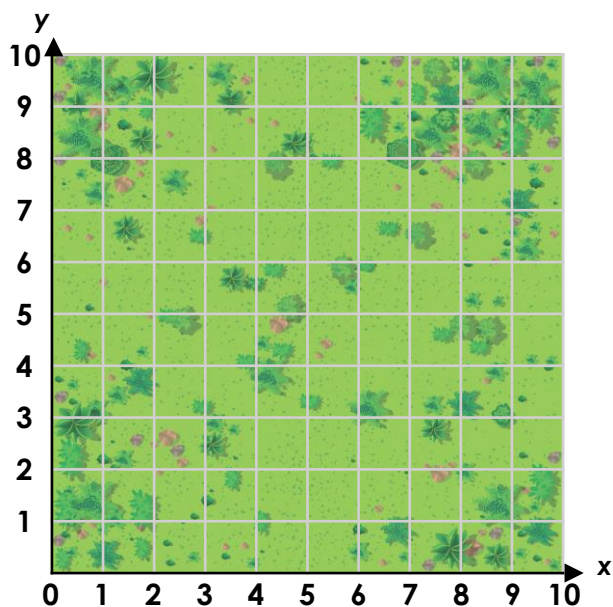
We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More [Year 4 Position and Direction](#) resources.

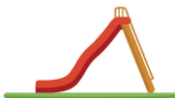
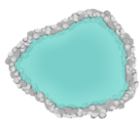
Did you like this resource? Don't forget to [review](#) it on our website.

Draw on a Grid

1. Follow the key and plan your own park by plotting the points on the grid for each object. Write each set of coordinates under the image.



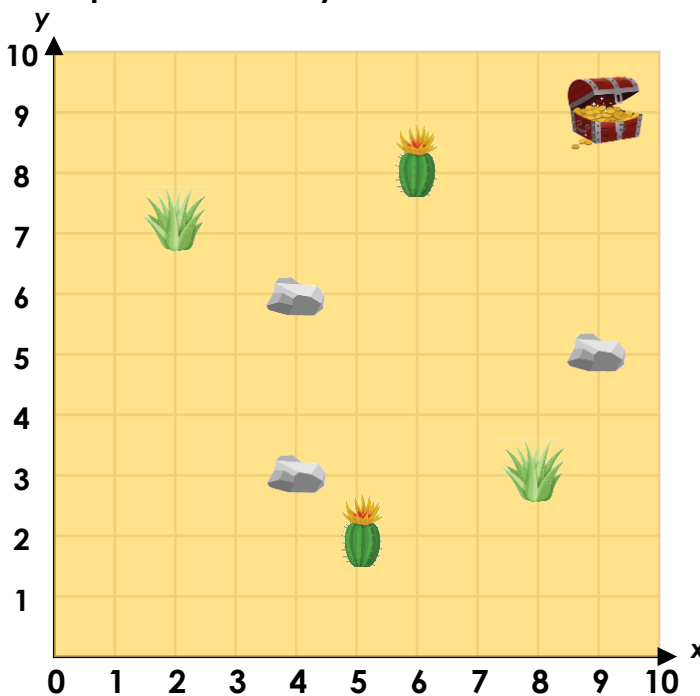
1. The tree (T) must be on the x axis at 5 and between 4 and 8 on the y axis.
2. The pond (P) must be at 8 on the x axis and between 7 and 10 on the y axis.
3. The swing (S) must be between 1 and 9 on the y axis.
4. The slide (SL) must be at 3 on the x axis and between 3 and 7 on the y axis.
5. The climbing frame (CF) must be between 3 and 5 on the x axis and between 1 and 3 on the y axis.
6. The bench (B) must be at 9 on the x axis and between 1 and 6 on the y axis.



(__ , __) (__ , __) (__ , __) (__ , __) (__ , __) (__ , __)

DP

2. Help Captain Gillyfog to reach the treasure chest by plotting a path for him to take. The Captain can start anywhere on the y axis but must start at 0. Make sure you avoid the obstacles and join the points to show your route.



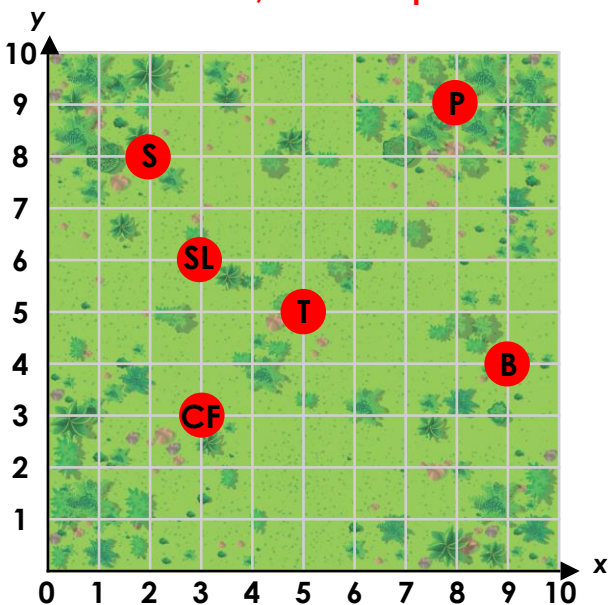
Investigate the shortest route Captain Gillyfog could take.

DP

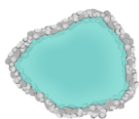
Draw on a Grid

1. Follow the key and plan your own park by plotting the points on the grid for each object. Write each set of coordinates under the image.

Various answers, for example:



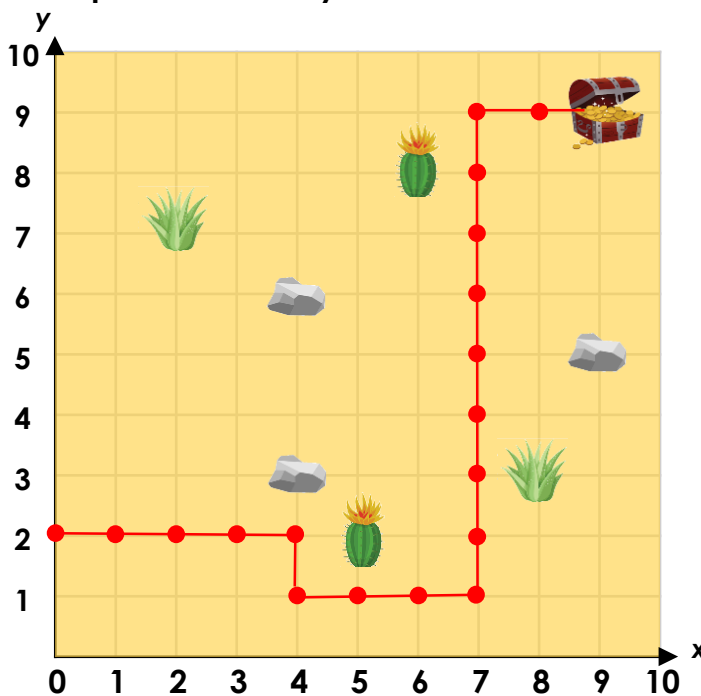
1. The tree (T) must be on the x axis at 5 and between 4 and 8 on the y axis.
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6. The bench (B) must be at 9 on the x axis and between 1 and 6 on the y axis.



(5 , 5) (8 , 9) (2 , 8) (3 , 6) (3 , 3) (9 , 4)

DP

2. Help Captain Gillyfog to reach the treasure chest by plotting a path for him to take. The Captain can start anywhere on the y axis but must start at 0. Make sure you avoid the obstacles and join the points to show your route.



Various answers, for example:

(0, 2), (1, 2), (2, 2),
 (3, 2), (4, 2), (4, 1),
 (5, 1), (6, 1), (7, 1),
 (7, 2), (7, 3), (7, 4),
 (7, 5), (7, 6), (7, 7),
 (7, 8), (7, 9), (8, 9),
 (9, 9)

The shortest route Captain Gillyfog can take is: (0, 4), (1, 4), (2, 4), (3, 4), (4, 4), (5, 4), (6, 4), (7, 4), (8, 4), (8, 5), (8, 6), (8, 7), (8, 9), (9, 9)

DP