



Treasure Island

Stage	Strand	Strand Unit
4	Shape and Space	Spatial awareness and location

Learning Outcomes	Maths Concepts
Through appropriately playful and engaging learning experiences, children should be able to describe locations on the full coordinate plane.	- An exact location on a map can be described and found using co-ordinates. - The co-ordinate plane has a horizontal x-axis and a vertical y-axis. - Co-ordinates identify the location of a point. - Coordinates consist of pairs of numbers, which indicates the distance along the x-axis and the y-axis respectively.

Learning Maths

In this learning experience, learners develop coordinate geometry using spatial reasoning and logical problem-solving abilities. The learner plays the role of a treasure hunter searching for hidden treasure on a grid-based map of an island. The treasure is buried in one square of the grid, and the learner's goal is to locate the treasure by interpreting coordinate clues. At each coordinate, they identify an object located there and take the first letter of its name, e.g. elephant (E). All the letters, when combined, spell out the coordinates in words of where the treasure is hidden. (Image courtesy of Nrich)



Understanding and Connecting	Communicating	Reasoning	Applying and Problem Solving
<i>The learner</i>			
Identifies a range of objects on the map given the coordinates. Understands how to navigate and describe the position of each object using the x and y axes.	Uses coordinates and precise spatial language to specify the position of the objects, e.g. The windmill is located at ... coordinates, e.g. (6,2). The x coordinate is ___/ the y coordinate is...	Shares their thinking and validates their logic (x coordinate always comes before y coordinate, just as x comes before y in the alphabet).	Applies knowledge of coordinates to navigate and locate objects on the island map. Uses spatial reasoning to find the location of the buried treasure.



Teaching Maths	
Fostering Productive Disposition	Encouraging Playfulness with Mathematics
Encourage exploration and autonomy as learners engage in this meaningful, purpose-driven mathematical problem.	Encourage learners to work as explorers, using coordinate clues to navigate a map and locate the treasure.

Emphasising Mathematical Modeling	
Prompt learners to interpret coordinates as locations and identify the corresponding objects, treating the grid as a mathematical map. Facilitate learners to make their own treasure map giving the coordinates of various objects to explore and to record their working (grids on whiteboards, floor grids, isometric paper etc.)	

Using Cognitively Challenging Tasks	Promoting Maths Talk
Prompt learners to choose a new location and provide a series of clues to guide others to their buried treasure.	Co-construct a 'Spatial Language' Word Wall with learners and display it in the classroom. Encourage learners to refer to it when explaining and justifying their thinking.

Assessing Maths
- Is the learner proficient when using coordinate language and spatial reasoning? - Can learners explain their strategies and revise ideas based on new insights gathered in small groups and class plenaries?

Source
Adapted from https://nrich.maths.org/problems/treasure-island

