

OUT AND ABOUT

OUTDOOR ACTIVITIES FOR KEY STAGE 2 MATHEMATICS

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SHAPE AND SPACE

Money Dig

Learning focus

- Use coordinates to locate points on a grid
Identify the coordinates of points on a grid
Record information in a table
- Enter information in a simple computer database
- Present data in graphical form
- Interpret information in tables, databases and graphs

Key vocabulary

- Coordinates
- Brackets
- Horizontal / vertical axis
- Position
- Coin
- Value
- Worth
- Sort
- Search
- Database
- Interpret

Resources

- Flower bed or wooden box (or possibly an area of grass or mud)
- String or tape
- Digging equipment (trowels, brushes, sieves)
- Cameras
- Pencil, paper and clipboards for recording



Activity

Using tape or string, mark out a coordinate grid in a flower bed or wooden box (or possibly an area of grass or mud). Bury a selection of coins. Include coins from different years and coins with different values. Take note of the precise coordinates for each coin. (Initially, the grid should focus only on the first quadrant. Later, coordinates in all four quadrants can be introduced.)

Introduce the activity to the children. Explain that they are archaeologists and they are going to go on an archaeological dig to find coins. Discuss the work of an archaeologist and what is involved in excavating a site.

What does an archaeologist do?

What tools might he/she use in the search process?

Why is it important to keep a careful record of findings?

Explain that a grid of squares has been made to accurately map exactly where each coin is located and it is their job to find the coins. Assign children to groups. Give each child a recording sheet which includes a copy of the coordinate grid as well as the coordinates of approximately five buried coins. For example:

Coin A (3, 6)

Coin B (7, 2)

Revise the notation for coordinates. Emphasize the use of brackets and a comma.

What does the first number represent?

What does the second number represent?

Why do we need to use brackets and a comma?

Teaching point

Any point can be specified by two numbers – its coordinates. Starting from the origin, the first number gives the distance moved in the x-direction, along the horizontal axis; and the second number gives the distance moved in the y-direction, in a vertical direction. The two numbers are written inside brackets with a comma between them.

Using the given coordinates, each group can then proceed to dig carefully to locate the five buried coins. Once they have found each coin, they should mark its position clearly on their own coordinate grid.

Next, explain that you think there may be some other buried coins and it is their job to try to locate these coins. Encourage them to suggest how they might go about this task and what they might record.

How will you find the buried coins?

What information might you record?

How will you record your findings?

Work with the children to devise a recording sheet. For example, they may record their findings in a table such as the one below:

Coin	Coordinates	Colour	Year	Value	Shape
A					
B					
C					

Teaching point

It is important to highlight that detailed and accurate records of what has been found can help with later research.

Ask the children to complete the table for the five coins they have already located (A-E). Each group should then search carefully for additional coins. They should record the coordinates and key characteristics of each coin in their table. They should also mark and label each coin's location on their coordinate grid. Children could take photographs of each coin found for later research.

Once the task is completed, invite the children to share and discuss their findings.

What coins did you find?

What is the same about your coins?

What is different?

Did all groups find the same coins?

The children could enter the information collected into a computer database. They could sort and search the database.

For example:

Ask questions which require the children to search for one piece of information.

In what year was Coin A issued?

What is the value of Coin B?

Which coin was issued in 1995?

How many coins have 7 sides (5p and 20p)?

How many coins were issued before 2000?

For some questions, it can be helpful to sort the coins first.

Which coin is the oldest? Which is the most recent? (Sort the coins according to year.)

Ask questions which require the children to search for two or more pieces of information.

Which coin is bronze and was issued in 1990?

Which £1 coin was issued after 2020?

The children could pose their own questions for their peers to answer.

They could also present the data in graphical form, depending on their stage of development. For example, they could use a bar chart to display the number of coins of each value or they could group the data to display the number of coins found in different time periods.

Taking ideas further

The coins could be used as a stimulus for further research. This offers great opportunities for connecting learning across the curriculum, particularly in history. The children could suggest questions that they would like to investigate. For example:

Who are the people on the coins? What direction do the heads face?

What are the different pictures on the coins?

What do the numbers on the coins mean? Are there any 4 pence coins?

Why are most coins round? Are there any square coins? What other shapes are there?

What does each coin weigh? Is the weight of a coin linked to its value?

When was the first coin ever made? What did people use before coins?

How long does a coin stay in circulation?

Who decides what goes onto a coin?

Assessment opportunities

Are the children able to:

- Use given coordinates to locate the position of buried coins on a coordinates grid
- Identify the position of buried coins using coordinates
- Record key coin facts in a table
- Interpret the information in a table
- Enter information in a simple computer database
- Sort and search a computer database to find answers to questions
- Present and interpret data in graphical form