

Make a Compass Rose

Through practical activities which include the use of technology, I have developed my understanding of the link between compass points and angles and can describe, follow and record directions, routes and journeys using appropriate vocabulary. **MTH 2-17c**

You will need: an outdoor space with hard surface, compass per group, set square or protractor, chalk

What you do:

- **Maths Trail as starter activity** - Angle hunt, finding, naming and labelling angles, use compass to find North
- **Become familiar with compass rose** – Using a compass and in small groups, draw compass rose showing the cardinal points (N,S, E, W) on tarmac. Ask pupils to identify angles in the rose.
- Point to visible features in school grounds and state ('to get to the main entrance from here we would walk towards south,' 'to walk to the tree...')
- Ask pupils to point to their homes or other familiar places beyond the grounds, 'My house is to the west of the school playground.'
- Each small group **creates a trail** (following playground markings if appropriate) and sketch on paper and clipboard in the form of a sequence of instructions telling how to walk from a starting point to a finish. Instructions to consist of direction and number of paces to walk. Groups swap trails. Can another group follow the instructions to reach the finish point.

Extension 1 Introduce *intercardinal* directions - NW SW ...

Extension 2 How to take a compass bearing

<https://blogs.glowscotland.org.uk/ea/public/learningoutdoorssupportteam/uploads/sites/11891/2020/05/19101642/compass-use-and-relocation.pdf>

Bismark Battleships

I can use my knowledge of the coordinate system to plot and describe the location of a point on a grid **MTH 2-18a** / **MTH 3-18a**

- In pairs, pupils draw 4x4 grid on tarmac with chalk. If possible use existing playground markings (empty grids).
- Place gym hurdle or similar at one edge and draw another matching grid on the other side. Objective is to have a pair of grids that cannot be seen by both players at the same time.
- On vertical edge, write numbers 1 to 4. On horizontal, letters A to D.
- Players draw battleships, subs etc on their grid.
- Play battle ships – use chalk to mark opponents plays and hits.
<https://blogs.glowscotland.org.uk/ea/learningoutdoorssupportteam/bismarck-battleships/>
Shows you how to lay out a 10x10 grid.

Extension 1 Pupil suggestions for making more challenging including using larger grid.

Extension 2 Introduce simple maps with letter/number grid system – pupils draw a map of part of the playground. Map to show 4 features. Swap maps and quiz – what is on my map at A4?
Tip for using grids – think of a person walking into a tall building – to get to their office they walk in at the entrance & walk along the corridor before going up in the lift.

<https://www.bbc.co.uk/bitesize/topics/zbt34j/articles/z6hxrj6>

Outdoor Learning

Numeracy and Mathematics

Second Level

Context – Maps & Compasses

This grid is designed for teacher use.



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Create a Map of an Imaginary Place

Having investigated where, why and how scale is used and expressed, I can apply my understanding to interpret simple models, maps and plans. **MTH 2-17d**

<https://www.bbc.co.uk/bitesize/topics/zvsfr82/articles/zdk46v4> can be used to introduce maps indoors before going outside to work on your own maps.

You will need:

Items of gym equipment: for example, hoops, cones, rope, hurdles, chalk
Outdoor space with flat surface.

What you do:

- Adult draws out a rectangle or uses existing playground markings.
- Gym equipment (the map symbols) laid out within rectangle to represent buildings or parts of landscape (cones as hills, ropes as rivers...).
- Groups asked to replicate map in their own space
- Encourage groups to talk about relative position of features.
- Adult adds further features to original map and groups amend their own
- Add map legend which explains what each symbol represents and the scale e.g. 1:1000 1 m on the map is equivalent to 1 km in the imaginary world.

Assessment:

Using the agreed scale pupils can answer questions about the modelled map and their own maps – 'How long is the river – on the map, in 'real life'? What is the distance from the mountain to the sea? How far is it from the forest to the river?...

Extension:

Measure and map school grounds..
If you are making changes to the school grounds or creating a garden involve pupils in drawing up plans to scale.
'Why is scale important when drawing up plans?'

To extend my mental map and sense of place, I can interpret information from different types of maps and am beginning to locate key features within Scotland, UK, Europe or the wider world. **SOC 2-14a**

Compass – In History

I have worked with others to explore, and present our findings on, how mathematics impacts on the world and the important part it has played in advances and inventions. **MTH 2-12a**

Why do we need compasses?

Who invented the compass?

What was it used for in earliest times and how did this influence its development?

List uses for compass – can be silly uses!

Link to explorers etc

Why is called a compass rose?

Encourage pupils to set questions for further exploration.

Local Walk with Map

Through practical activities which include the use of technology, I have developed my understanding of the link between compass points and angles and can describe, follow and record directions, routes and journeys using appropriate vocabulary. **MTH 2-17c**

You will need: local maps (available from Digimap Scotland <https://digimap.edina.ac.uk/>) or Ordnance Survey). If using mapping as part of a people, past events and societies investigation see also the Scottish National Library https://maps.nls.uk/?qclid=Ci0KQCQiAvvKBBhCXARIsACTePW-8JzhyOip4XP5j-Qa1kE9vXvBuNCL5MrYli1NliqZs3p_ULhm8p1AaAlq6EALw_wcB

What you do:

- Indoors study the map to locate the school building and trace out walk route.
- Look at scale and estimate distance to be walked and the time it will take.
- Use the key to identify landmarks such as churches, greenspaces.
- In pairs, pupils walk with map so that the map is oriented (lined up) with their direction of travel.
- Stop at intervals to ensure that maps are oriented and that pupils can answer simple questions – 'If we turn left here, what landmark should we be able to see?'...

Extension:

This walk could be used as a Heritage Walk using historic maps or locating place and street names which provide clues to the past.

It can contribute to a Heritage Hero award <https://archaeologyscotland.org.uk/learning/heritage-hero-awards/>

See an example of how this can be used to support a Heritage Hero project

<https://blogs.glowscotland.org.uk/ea/public/learningoutdoorssupportteam/uploads/sites/11891/2020/11/29224121/Archaeology-Detectives-activity-plan-A%E2%80%93using-maps-v1.pdf>

I can use primary and secondary sources selectively to research events in the past.

SOC 2-01a

Orienteering

Having investigated where, why and how scale is used and expressed, I can apply my understanding to interpret simple models, maps and plans. **MTH 2-17d**

Pupils learn to create and use maps through a sequence of 3 activities

1. Birds Eye View
2. Map Walk and
3. Orienteering Course

While working and learning with others, I improve my range of skills, demonstrate tactics and achieve identified goals. HWB 2-23a

<https://blogs.glowscotland.org.uk/ea/public/learningoutdoorssupportteam/uploads/sites/11891/2020/10/27110951/Newsletter-Orienteering-Lesson.pdf>

NB EAC schools can borrow orienteering kits from EAC LOST. Kits have a full set of instructions and resources to set up and complete a course within the school grounds.

Developed by Numeracy SAC Team and COACH

East Ayrshire Council



 East Ayrshire Council
Comhairle Siarachd Àir an Ear

 LOST
LEARNING • OUTDOORS • SUPPORT • TEAM