

Local geography

Ages 7-11



Curriculum links – Geography objectives:

Ages 7-11

Map skills using the MCZ map

Geography

Use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world.

Electricity and gas and the MCZ

Geography

Describe and understand key aspects of:

human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water

Use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied.

Electricity and gas and the MCZ (continued)

Citizenship

That resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment.

Activity 1

Gus the Gull

Compass directions

Using the [MCZ map](#) pdf resource and [Gus the Gull](#) children can practise using compass directions. Example questions:

- Gus is flying above Cromer. If he flies north what will he see? Use this opportunity to reinforce the name of this sea: *North Sea*.
- Gus is in Weybourne. If he flies east, what is the first town he will come to?
- If Gus flew from Mundesley to Cromer, which direction would he be travelling?
- What direction should Gus fly to get from Mundesley to Haisborough Sands?

The children could work together to come up with other questions for the class.

Map key

Using the [MCZ map](#) and [Gus the Gull](#), children can practise using the key. Example questions:

- What direction should Gus fly to get from Mundesley to Haisborough Sands? What else travels along a lot of this route?

- How deep is the sea where the word 'Cromer' is written?
- How many wrecks can they find within the Marine Conservation Zone?
- How shallow does the sea get at Haisborough Sands?
- What is laid under the sea from West Runton?
- What two things travel under the sea from Weybourne? *The telephone cable goes to Denmark and was laid in 1950.*

The children could then work together to come up with other questions to challenge the class.

Activity 2

Grid references

Four-figure grid references

Use the pale blue grid lines on the map with the National Grid Eastings (along the bottom) and National Grid Northings (along the left-hand side) to introduce grid references. To do this we will ignore the zeros to begin with, so 610000 will be 61.

See this [Bitesize guide](#) for a step-by-step guide to grid references.

Recap using coordinates in maths – along the bottom (x axis), then up the side (y axis). Note that when giving Ordnance Survey Grid references there are no brackets or commas.

Give the children four-figure grid references. Can they put their finger on it/point to it on the board?

Can the children find the grid references for particular locations? E.g. Cromer = 6234.

Can the children find the four-figure grid references for:

Happisburgh 6333
Haisborough Sands 6434
Weybourne 6134 and Sheringham 6134?
(These last two are the same).

Six-figure grid references

When the children are secure finding four-figure grid references they can move onto six-figure grid references. To do this they will need to estimate where the tenths are in each square.

Hopefully, they noticed that Weybourne and Sheringham were in the same square 6134. Six-figure grid references are more accurate for stating the position of a place.

Activity 2

Grid references (continued)

Model using the grid reference for Weybourne 612343 (the village not the name label). Can they see the four-figure grid reference for the square inside it? **612343**

The children could have a go finding 616343. Which part of Sheringham does it locate? *The centre.*

Can the children find the locations for the six-figure grid references below?

612344 Weybourne beach
638332 Happisburgh beach
634335 Bacton Gas Site
622342 the centre of Cromer.

As an extension children could choose their own locations to write the grid reference for.

Activity 3

Energy sources

Power from wind and gas

The distribution of electricity and gas through the MCZ provides an opportunity to cover some geography and citizenship National Curriculum objectives.

This topic provides an opportunity to make links with English. Children could look at the pros and cons of wind farms, have a debate and write persuasive texts or balanced arguments.

All development out at sea must be approved by the Marine Management Organisation.

Fossil fuels, renewable energy and climate change

The comparison of the wind farms in the North Sea with the gas site at Bacton provide a good opportunity to discuss energy sources and their impact on climate change.

This [Bitesize video and article](#) on fossil fuels introduces the topic.

A PowerPoint and further teaching resources are available under [Energy Resources](#) from the Geological Society.

Lesson 5 in our Protect the Ocean lesson series, [Climate, the sea and me](#), develops understanding of the importance of the sea in relation to climate change.

Energy from gas

Children could explore the Marine Conservation Zone map, using the key to see what the various lines are through the sea. They will notice that there are a lot of lines – cables and pipelines – that join the coastline here. Many terminate at Bacton gas site bring oil and gas from rigs out at sea.

Ask the children questions: Once the oil and gas is processed, how does it get to our homes? Pipelines are laid underground to distribute it around the country – this is called ‘mains gas.’ Despite having the gas site at Bacton, the houses in Bacton and surrounding villages are not connected to mains gas!

Gas is used to generate electricity in Norfolk. Great Yarmouth and King’s Lynn have gas fuelled power stations. To compare the amount of electricity produced Great Yarmouth produces 420 MW, King’s Lynn produces 325 MW and Sheringham Shoal’s 88 wind turbines can produce up to 316.8 MW.

This [YouTube video](#) discusses oil and gas extraction from the North Sea.

Activity 3

Energy sources (continued)

Energy from wind

Children can explore the online maps of offshore wind farms here:

4coffshore.com/offshorewind/

They can see where the wind farms are and their state of development using the key. By clicking on each windfarm they can find out the number of wind turbines and the capacity (MW).

Ask the children questions:

Once the power is generated how does it get to our homes and school? Cables need to be laid to bring it onshore and underground to be distributed around the country, including relay stations and electrical substations. Watch the video [How offshore wind farms work](#) for more information.

The proposed Norfolk Vanguard wind farm plans to lay cables under the sea near the Marine Conservation Zone coming ashore at Happisburgh. The route avoids the MCZ.

This video on the [Impact on Norfolk of offshore wind farms](#) gives an idea of some of the issues.

This video briefly explains some of the ecological impacts of wind farms:
[Ecological impact of wind farms.](#)

Do the children think wind farms are a good thing? How do they compare to gas?

Meet Gus the gull!



Photo: Rob Coleman



Longitude (Degrees & minutes)

1°10'E

1°20'E

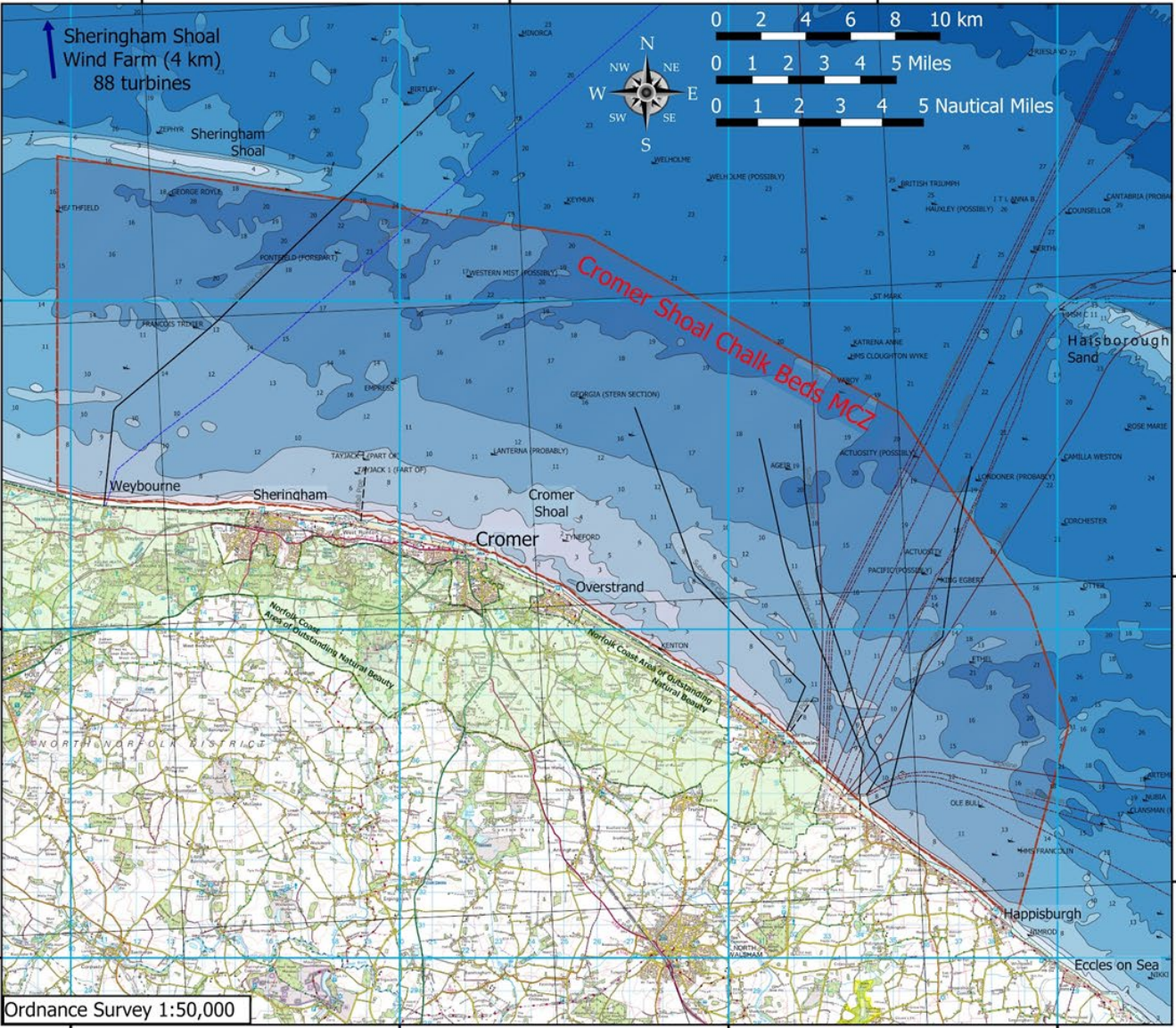
1°30'E

National Grid - Northings

350000

340000

330000



Ordnance Survey 1:50,000

61000

62000

63000

64000

National Grid - Eastings



0 2 4 6 8 10 km

0 1 2 3 4 5 Miles

0 1 2 3 4 5 Nautical Miles

Latitude (Degrees and minutes)

53°0'N

52°55'N

52°50'N

Cromer and the Cromer Shoal Chalk Beds Marine Conservation Zone



Key

Cromer Shoal MCZ	Navigation markers
North Coast AONB	N cardinal mark
Bathymetry (m)	E cardinal mark
0	W cardinal mark
2	Port lateral mark
5	Pipelines and Cables
10	Gas Pipeline
15	Outfall Pipe
20	Pipeline
30	Submarine Cable
50	Telephone Cable
Spot depths	
Obstructions	
Wreck	

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 Designated areas: © Natural England, 8 October 2019. These boundaries are licensed under the Open Government Licence 3.0 **OGL**
 Map Projection is OSGB1936 / British National Grid.