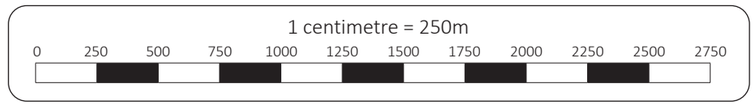
Investigating Our World

Ordnance Survey maps

Ordnance Survey are Britain's national mapping agency. People use map symbols, six-figure grid references and compass directions to analyse and compare places and features on Ordnance Survey maps.

Map scales

The scale on a map gives the relationship between the size of an object on the map and its size in real life. For example, a scale of 1:25,000 means that 1cm on a map is equal to 25,000cm, or 250m, in real life. So 4cm on the map is equal to 1km. On Ordnance Survey Explorer maps, the scale is 1:25,000, and the grid lines are 4cm apart, making each square 1km² in real life.

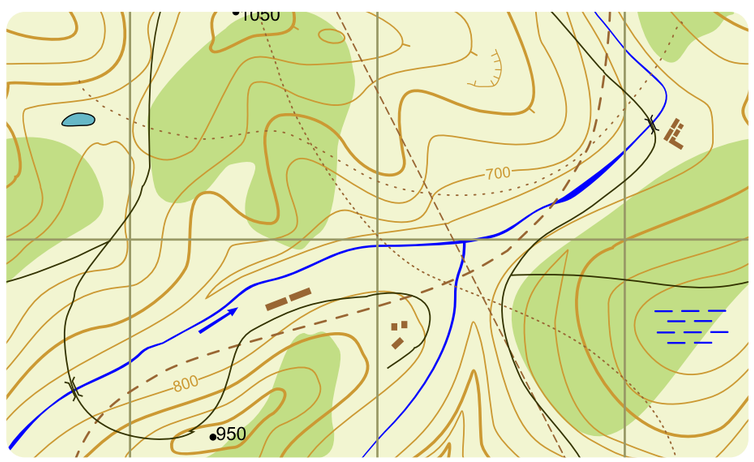


scale bar

Contour lines

Hills, slopes and mountains are represented on a map using contour lines. By studying the contour lines on a map, you can work out the topography of an area.

Contour lines are brown lines on an Ordnance Survey map. They are a two-dimensional representation of the landscape. If contour lines are close together on the map, the land is steep. If they are far apart, the land is flat or gradually sloping. They form a circle at the peak of a hill or mountain.



Comparing human geography

Data, including the population, population density, literacy levels, wealth, life expectancy and religion, is used to compare the human geography of the continents. For example, the continent of Africa has a larger population than Australia. Africa's population is 1340 million. The population of Australia is 43 million.

Lagos, the most populated city in Africa

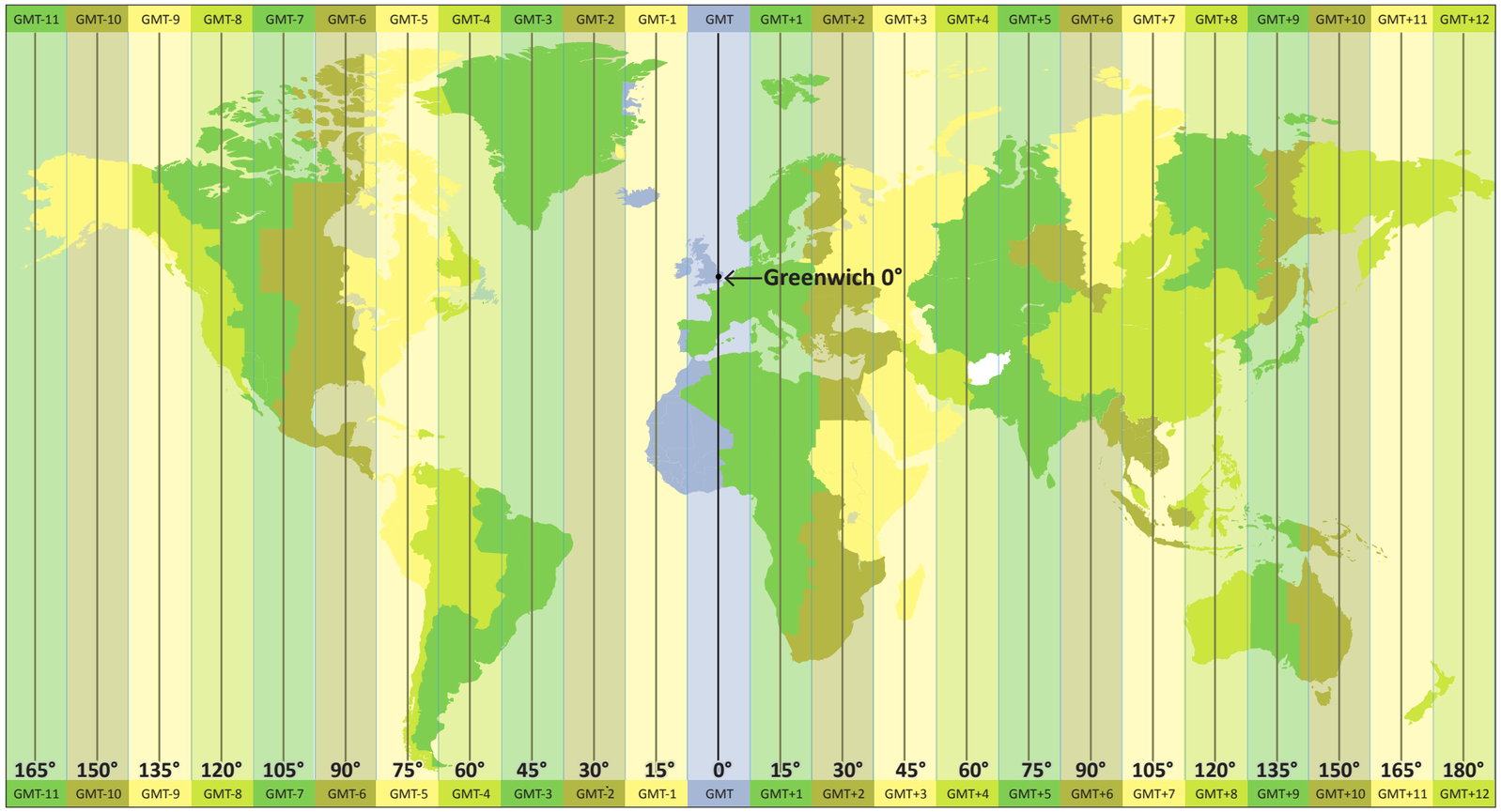
Capital cities of the world

Capital cities are usually the seat of a country's government. They are large settlements with a wide range of human features and transport links and are usually a centre for business and trade. For example, Vienna is the capital city of Austria, on the continent of Europe. It is the country's centre for industry, trade and culture. There is a range of transport links in the city, including a train and underground network, a tram system, and a road system for buses, taxis and cars.

Vienna skyline

Time zones

The time is different in different countries around the world. The world is split into 24 meridians. These are lines of longitude that run from the North Pole to the South Pole. The Prime Meridian is the starting point for all the other meridians. Its position is 0°. It runs through Greenwich, in England. All times around the world are calculated from the Prime Meridian. The time at the Prime, or Greenwich, Meridian is known as Greenwich Mean Time, abbreviated to GMT. If meridians are to the east of Greenwich on a map, hours are added to GMT. If they are to the west of Greenwich, hours are taken away from GMT. Times zones are labelled to show how many hours they are ahead of, or behind, the Prime Meridian, for example GMT+1 or GMT-1.



* this map is simplified and shows approximate time zones

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Climate zones

A climate zone is an area of the world with a distinct climate. There are five main climate zones, polar, temperate, Mediterranean, desert and tropical. The polar climate is the world's coldest climate, and the desert climate is the world's hottest. A temperate climate has warm summers and cool, snowy winters. The Mediterranean climate has hot summers and mild, wet winters. The tropical climate has a lot of rain and hot temperatures all year round. On mountains, the climate varies. As the altitude (height above sea level) increases, the temperature decreases and the climate becomes wetter and windier. Many mountain peaks are covered with snow all year round.

Vegetation belts

A vegetation belt is an area where certain species of plants grow because of the climate. Soil and the height of the land are other factors that affect the types of plants that grow in vegetation belts. There are five main vegetation belts, including desert, forest, grassland, ice sheet and tundra.

Biomes

A biome is a large ecosystem that has characteristic features, such as the climate and landscape. Plants and animals live there that are adapted to the environment. There are five main biome types, including aquatic, desert, forest, grassland and tundra.

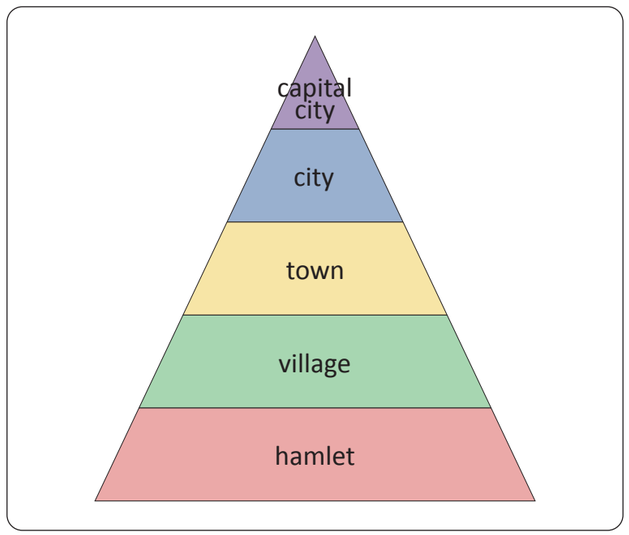
Motorway transport network

A motorway is a main road with multiple lanes built for fast travel over long distances. In the United Kingdom, they run north to south and east to west across the country. Motorways connect towns, cities and transport links, such as A roads, airports or ferry terminals. Motorways allow people and goods to move quickly around the country.

M1 motorway in Yorkshire

Settlement hierarchy

Settlement hierarchy is a way of grouping and ranking settlements according to their type, significance, number and size. The main types of settlement in the United Kingdom are capital cities, cities, towns, villages and hamlets. The most significant type of settlement is at the top of the diagram, and the least significant is at the bottom. Settlements get bigger, have a larger population and have more facilities, workplaces and transport links as they go up the settlement hierarchy. The number of each type of settlement increases as they go down the settlement hierarchy.



settlement hierarchy diagram

Characteristics of settlements

Capital cities are the largest type of settlement. Millions of people live and work in capital cities. They contain the largest number and the widest range of human features. Cities are large settlements. Millions of people can live and work in cities. Towns are smaller than cities and do not usually have a cathedral. Thousands of people live and work in towns. Villages are small settlements with a church. Usually, a few hundred people live in a village. Hamlets are small settlements without a church. Less than one hundred people live in hamlets. They contain a very small number of houses and normally have no shops, cafés or other facilities.

Glasgow, a city in Scotland

Ossett, a town in England

Beddgelert, a village in Wales

Listooder, a hamlet in Northern Ireland

Glossary

climate	The general weather conditions found in a place over a period of time.
ecosystem	An environment, including the plants and animals that live and interact within that environment.
life expectancy	The number of years that a person is likely to live.
population density	The number of people living in an area.
topography	The physical appearance of an area of land, especially relating to its shape and surface.

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Sow, Grow and Farm

Farming in the UK

Farming is the business of growing crops and rearing livestock. Up to 70% of the land in the UK is used for farming. There are three main types of farming in the UK. These are arable, pastoral and mixed.

Arable farming is growing crops, such as cereals and vegetables.

Pastoral farming is rearing animals, such as cows and sheep.

Mixed farming is both growing crops and rearing animals.

The type of farming depends on the climate, the quality of the soil and the topography of the area. For example, the flat, nutrient-rich land in the east of England is perfect for arable farming, whereas the wet and windy hills of central Wales are most suited to pastoral sheep farming.

Allotments

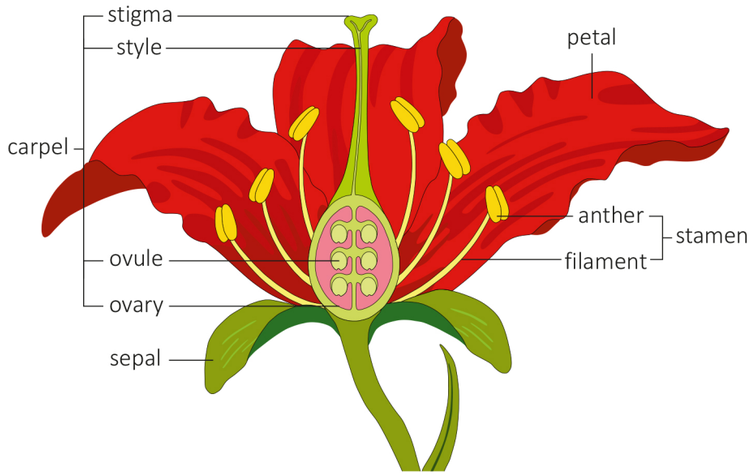
Allotments are small pieces of land that individuals can rent to use for growing fruit, vegetables and flowers. The location of allotments in the local environment depends on many factors, including soil quality, drainage, transport links, availability of water and local facilities.

During the Second World War there were food shortages and rationing. The Dig for Victory campaign encouraged people to grow fruit and vegetables on open land, increasing the number of allotments by over 70%.

Plant life cycles

Plants can reproduce in one of two ways. Firstly, by sexual reproduction where two parent plants are needed, and the offspring are genetically different to either parent. Secondly, by asexual reproduction where only one parent plant is needed, and the new plants are genetically identical to that parent. Some plants can reproduce in either way.

Flowers are needed for sexual reproduction. Flowers have both male and female parts. Pollen from the male stamen gets transferred to the female carpel in a process called pollination. Following pollination, the ovules are fertilised and seeds are produced.



Modern farming techniques

Some farmers use modern farming practices, including new machinery, technology and scientific discoveries, to produce more food. Whilst this has increased food production there have also been some negative effects on the environment.

Modern farming techniques include chemical pesticides, synthetic fertilisers and irrigation technologies.

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Climate zones

The world is divided into five main climate zones. These are areas of similar average temperature and average rainfall. Mountains have variable climates depending on altitude.

The **polar zone** is cold and dry with long, dark winters. Average temperatures are 10°C to -55°C.

The **temperate zone** has warm summers, cool winters and year-round rainfall. Average temperatures are 0°C to 20°C.

The **Mediterranean zone** has hot summers and mild, rainy winters. Average temperatures are 15°C to 30°C.

The **desert zone** is hot year-round and has very little rainfall. Average temperatures are 25°C to 40°C.

The **tropical zone** has a wet season and a dry season. It is hot and humid. The average temperature is around 31°C.

Mountains have changeable climates with colder temperatures and more rainfall as the elevation increases.

North and South America

The continents of North and South America can be divided into environmental regions based on their physical features, climate and soil types. The characteristics of these environmental regions determine which type of farming will thrive in that area.

Citrus farming in California

The climate in California, on the west coast of North America, is hot and sunny in the summer and mild in the winter. The soil is fertile and well drained. This suits the growing of citrus fruits, particularly oranges. Several different types of orange are grown and sold in the United States or transported around the world.

orange grove

Coffee growing in Peru

Peru, in South America, has a cool to warm, tropical climate with frequent rainfall and rich soil. This makes ideal growing conditions for coffee. Growing and processing coffee is a difficult and time-consuming task because most of the work is still done by hand. The Fairtrade Foundation offers training to farmers to improve how they process coffee, so they can earn a better living.

coffee plant

Food miles

Consumers in the UK have come to expect that they can buy most foods all year round, regardless of the growing season. This means that some foods are transported from where they are grown to where they are eaten. The distances food travels is known as food miles. However, this movement of goods means more energy is being used to transport the food and keep it fresh, which can add to pollution and contribute to climate change.

Glossary

carpel	The female part of a flower, consisting of the stigma, style, ovary and ovules.
climate	The general weather conditions found in a place over a period of time.
fertiliser	A natural or chemical substance that is spread on the land or given to plants to make them grow successfully.
irrigation	The practice of supplying land with water so that crops and plants will grow.
livestock	Animals and birds that are kept on a farm, such as cows, sheep or chickens.
pesticide	A chemical substance used to kill animals and plants that are harmful to crops.
stamen	The male part of a flower, consisting of a thin stem, called the filament, and the anther that is covered with pollen.

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