



Find your way around the world

Living

time

50 minutes

learning outcomes

To:

- know the concepts latitude and longitude
- know what latitudes and longitudes are used for
- know that the prime meridian passes through Greenwich (London)
- know what the Eastern Hemisphere and Western Hemisphere are
- know where the Equator, the Tropic of Capricorn, and the Tropic of Cancer are situated
- learn how to use an atlas

end product

- a globe showing various meridians

materials needed

- 24 polystyrene spheres
- 24 red felt-tip pens
- 24 green felt-tip pens
- 24 yellow felt-tip pens
- 24 blue felt-tip pens
- 12 atlases

Preparation

Check the definition of the Prime Meridian, if necessary, and the positions of the , the Tropic of Cancer, and the Tropic of Capricorn.



A place on Earth 10 min.

Organise the children into pairs. Give each pair an atlas, two polystyrene spheres (globes), and two felt-tips pens in each colour. The children complete Task 1 on the worksheet. One child draws a red dot on the globe and attempts to explain to the other child where the spot is exactly. Ask how they managed. Was it difficult? Why was it difficult? The children discover that it is difficult to describe the position of a place on Earth using only the two poles as reference points.



The children investigate how you can determine the position of a place on Earth.



Two places on Earth 5 min.

Explain to the children that they are now going to repeat the experiment with the globes, but in a different way. The pairs of children then complete Task 2 on the worksheet. This time they try to locate two other dots (green) using the existing red dot. They discover that you can use three points to determine the position of a place. Explain that this is called a three-point measurement.

Latitude and longitude 25 min.

The worksheet shows a map of the world. The Prime Meridian and the Equator are shown, as well as the Tropics of Cancer and Capricorn. Explain to the children that the most important circle of latitude on Earth is the Equator. The Equator divides the Earth into the Northern Hemisphere and the Southern Hemisphere. All the other lines of latitude run parallel to the Equator. The most important circle of longitude is the Prime Meridian. This passes through Greenwich (London, England). Draw the world on the board, showing the Prime Meridian and the Equator.

The children complete Task 3 on the worksheet. The children draw the Prime Meridian, the Equator, the Tropic of Capricorn, and the Tropic of Cancer on their globe. England and New Zealand are in the Eastern Hemisphere, Peru is in the Western Hemisphere. England is in the Northern Hemisphere, Peru, and New Zealand are in the Southern Hemisphere.

The answers to Question 3e are: Brisbane, Australia: 27 S, 153 E, Quebec, Canada: 46 N, 71 W, Aswan, Egypt: 23 N, 30 E.



Another place on Earth 10 min.

The children complete Task 4 on the worksheet. One of the children explains to their partner where he/she has drawn a yellow dot. This time they can use the latitude and longitude lines they have drawn. The children come to the conclusion that latitude and longitude lines on Earth are very useful for determining location.



Encourage several pairs of children to explain whether or not they succeeded in drawing the yellow dot in the same location on their globes. Then discuss the entire worksheet in the class. Why are latitude and longitude useful?



Find your way around the world



In this experiment you will be answering the research question:

Why have we agreed on the best method to determine location?

1 A place on Earth



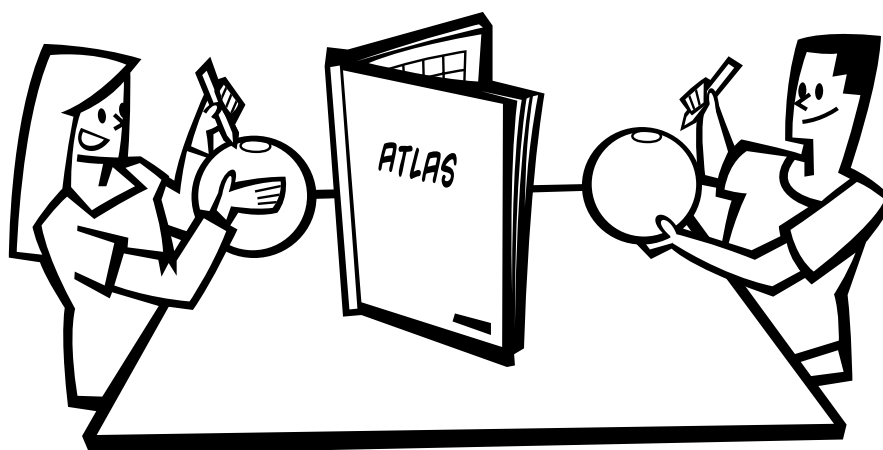
What do you need?

- 2 polystyrene globes
- blue, red, green, and yellow felt-tip pens
- an atlas


What do you need to do?

Carry out this task in pairs. One of you is Child 1 and the other is Child 2.

- 1 Open the atlas upright on the table in between you so you cannot see each other's globe.
- 2 Each take your globe and a red felt-tip pen. Imagine your globe is the Earth. Now draw a North Pole and a South Pole on it.



	3 <i>Child 1</i>
	Using the red felt-tip pen, draw a dot somewhere on the globe
	(it doesn't matter where).
	Describe to Child 2 as accurately as possible where your red dot is.
	<i>Child 2</i>
	Listen carefully and try to draw a dot in exactly the same place on
	your globe using your red felt-tip pen.
	4 Now compare your globes.
a	Is the red dot in the same place on both globes?
b	Could you draw a dot anywhere else on Child 2's globe that would also fit
	the description given by Child 1?
c	Did Child 1 use any of the following words? If so, circle the words used.
	over / under / left / right /
	North / South / East / West /
	millimetres / centimetres
	something else (write down any other words used)

 write any
other words
used HERE

2 Two places on Earth



1 Each takes a green felt-tip pen.

2 *Child 2*

Draw two green dots on your globe. Describe to Child 1 as accurately as possible where you have drawn the green dots on your globe.

Child 1

Listen carefully and try to draw two green dots in exactly the same place on your globe.

3 Now compare your globes.

a Are the green dots in the same place on both globes?

b Did Child 2 use any of the following words? If so, circle the words used.

over / under / left / right /

North / South / East / West /

millimetres / centimetres

something else(write down any other words used)

Tip. If the red dot is in the same position on both your globes, you can use this as a reference point in your description.

write any other words used
HERE

3 Latitude and longitude

In order to describe their location on Earth, people long ago decided to divide the Earth into sections. They called the dividing lines latitude and longitude.

The line of longitude dividing the Earth into the Eastern and Western Hemispheres is called the Prime Meridian. This meridian passes through Greenwich in London. Look closely at the illustration on the next page.

a Use the atlas to look up the following countries. Are they in the Eastern or West-

ern Hemisphere? Put a tick in the correct box.

Country	Eastern Hemisphere	Western Hemisphere
UK		
Peru		
New Zealand		

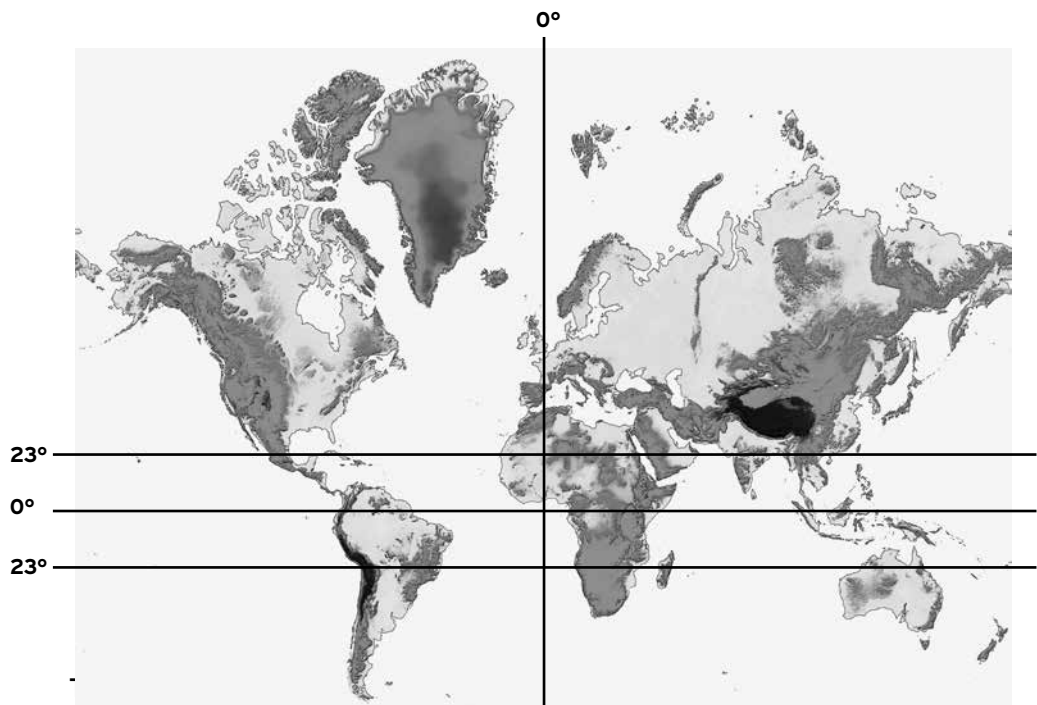
TICK
the correct
hemisphere

We call the line of latitude dividing the Earth into the Northern and Southern

Hemispheres the Equator. The Equator passes through central Africa. We call

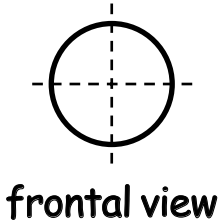
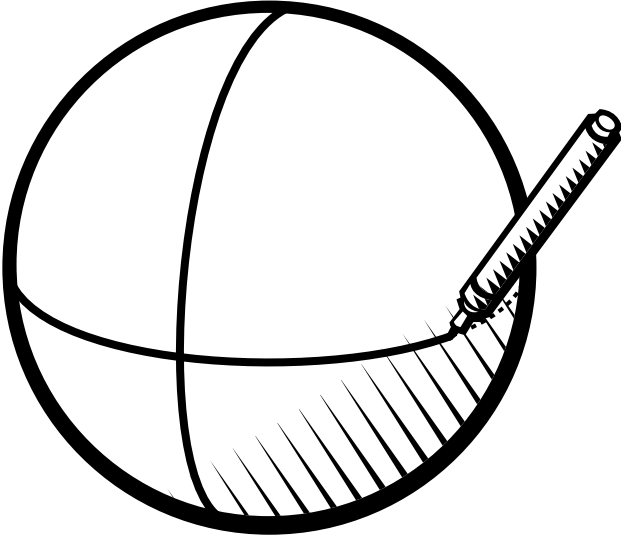
everywhere North of this line the Northern Hemisphere and everything South of

this line the Southern Hemisphere.



(horizontal). Both of these lines are marked with a U (because they are where we begin measuring). The Tropic of Capricorn is at 23 degrees South of the Equator, the Tropic of Cancer is at 23 degrees North of the Equator. These lines are also shown on the map.

b Again, look up the countries in Question 3a in the atlas.

	Are they in the Northern or the Southern Hemisphere?												
	Put a tick in the correct box.												
	<table><thead><tr><th>Country</th><th>Northern Hemisphere</th><th>Southern Hemisphere</th></tr></thead><tbody><tr><td>UK</td><td></td><td></td></tr><tr><td>Peru</td><td></td><td></td></tr><tr><td>New Zealand</td><td></td><td></td></tr></tbody></table> <div>TICK the correct hemisphere</div>	Country	Northern Hemisphere	Southern Hemisphere	UK			Peru			New Zealand		
Country	Northern Hemisphere	Southern Hemisphere											
UK													
Peru													
New Zealand													
c	<p>On your globe, use the blue felt-tip pen to draw the Prime Meridian as a vertical line from the North Pole to the South Pole. Draw the line as a complete circle on your globe. Now draw another line to show the Equator, so your globe is divided into four quarters. Look carefully at the example below.</p>												
	<div><div><p>frontal view</p></div><div></div></div>												
d	<p>There are two other well-known lines of latitude:</p> <p>the Tropic of Capricorn and the Tropic of Cancer. The Tropic of Capricorn lies just South of the Equator and the Tropic of Cancer is North of the Equator.</p> <p>Look in the atlas and on the map on the previous page to see where these lines are. Draw them on your globe using the blue felt-tip pen.</p>												

e

We can use the degrees of latitude and longitude to describe the position of a city. When we do this, we state the degree of latitude first, followed by the degree of longitude. For example, Manchester is at approximately 53 degrees North and 2 degrees West. You write this as Manchester, UK: 53 N, 2 W. Look up the following cities in the atlas. What are their locations?

Brisbane, Australia: _____

Quebec, Canada _____

Aswan, Egypt _____

write the
latitude and
longitude
HERE

4 Another place on Earth



1 Open the atlas upright on the table between you again.

2 Take your globe. Using the blue felt-tip pen, draw a cross on the prime meridian midway between the Tropic of Cancer and the North Pole. This is Greenwich in London.

3 You are now going to have another go at explaining to each other where you have drawn a dot.

Child 1

Using the yellow felt-tip pen, draw a dot somewhere on the globe (it doesn't matter where).


Describe to Child 2 as accurately as possible where your yellow dot is. Use the position of Greenwich, the Tropics, and the red and green dots in your explanation.

Child 2

Listen carefully and try to draw a yellow dot in exactly the same place on your globe.

4 Now compare your globes.

Tip. Use Greenwich and the red and green dots in your description if they are in the same place on both your globes.

a	Is the yellow dot in the same place on both globes?
c	Did Child 2 use any of the following words? If so, circle the words used.
	above / below / left / right / north /
	south / east / west / millimetres / centimetres
	something else (write down any other words used)
	Write your answer in the space provided.
	All the countries east of the prime meridian are in the
	_____ Hemisphere.
	All the countries south of the Equator are in the
	_____ Hemisphere.
d	In which task were you able to copy your partner's dot most accurately?
e	Why is it useful to divide the world into degrees of latitude and longitude?

write any
other words
used HERE