

Key Question: Why do so many people in the world live in megacities?

Learning objectives

During the enquiry pupils will have opportunities through the application and analysis of a wide range of geographical skills and resources to:

- **Observe** and **describe** the key features of cities and suggest **reasons** for why people live in cities of such high density;
- **Describe** and begin to **explain** the distribution of megacities across the continents of the world;
- **Explain** some of the **reasons** why Baghdad was the first city in the world with a million inhabitants;
- **Identify** and **locate** the top 10 cities in the United Kingdom with the largest populations and **compare and contrast** these with the top 10 fastest-growing cities in the country;
- **Understand** the main **reasons** why the population of any city can increase and **explain** why Milton Keynes in particular is the fastest-growing city in the United Kingdom;
- **Recognise** and **locate** the largest cities in South America;
- **Describe** and offer **reasons** for the features of the city of Brasília, capital of Brazil;
- **Explain** and **conclude** why the Brazilian government built a new capital city in 1960;

Purpose of the enquiry

This investigation supports pupils to develop their understanding of the important geographical concepts of *settlement* and *urbanisation* through the study of the world's *megacities* (cities with a population of over 10 million). This is very important because globally over half of the world's population now live in towns and cities – in the United Kingdom this figure has reached 80 per cent.

During the lifetime of the pupils urban populations will continue to grow very rapidly around the world and particularly amongst the poorest countries as they develop economically. Through the ancillary enquiries pupils are able to explore some of the economic and social reasons why the population of cities increase. They also compare and contrast the benefits and problems that can arise in urban areas as a result of housing people at such high densities. Through their enquiries pupils are able to apply, in relevant contexts, a wide range of geographical skills; and as is appropriate to Lower Key Stage 2, the emphasis is on supporting them to explain things through the synthesis of information from different sources.

Context

At Key Stage 1 pupils are introduced to the concept of *settlement* through an investigation of the geography of the local area in which they live and compare and contrast this location with a similarly small area of a settlement in a non-European country. At Lower Key Stage 2 the scale of study is extended and pupils are now able to work in a national and global context as they investigate *megacities*. Within the United Kingdom pupils not only identify the largest cities in the country but also the most rapidly expanding settlements. They explore some of the reasons for this growth through a focus on one city – Milton Keynes.

Historically, pupils also have the opportunity to investigate the historic city of Baghdad (the first city in the world with one million inhabitants in AD 900) and to compare the reasons for its growth with the causes of urbanisation today. Pupils also spend time studying the very modern city of Brasília in Brazil and come to understand that some cities grow because governments around the world decide that they should – in this case constructing a brand new capital city towards the centre of the country.

National Curriculum coverage Geography

Pupils should be taught to:

Locational knowledge

- Locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries and major cities.
- Name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time.
- Identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night).

Place knowledge

- Understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America.

Human and physical geography

Describe and understand key aspects of:

- Physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle.
- 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.

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- **Compare and contrast** the benefits and disadvantages of city life and reach a **judgement** as to which is most significant;
- **Identify, describe and explain** some of the main geographical features of one of the top 40 megacities in the world.

Key Subject Vocabulary

Map; City; Megacity; Village; Town; Settlement; Urban; Rural; Distribution; Capital; Population; Population density; Human geography; Physical geography; High-rise; Continent; Key; Scale; Isodemographic; Islam; Civilisation; River; Trade; Bridge; District; Canal; Mountain; Employment; Economy; Migration; Housing; Services; Industry; Transport; Business; Accessibility; Communication; Political map; Capital city; Government; Parliament; Stock Exchange; Coast; Shanty; Favela; Pampas Grassland; Tropical rain forest; Culture; Historic; Architecture; Cost of living; Smog; Pollution; Homelessness; Crime; Congestion; Urbanisation.

Geographical skills

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

Connections to the subject content of other curriculum areas

Language and literacy

Teachers should develop pupils' spoken language, reading, writing and vocabulary as integral aspects of the teaching of every subject. English is both a subject in its own right and the medium for teaching; for pupils, understanding the language provides access to the whole curriculum. Fluency in the English language is an essential foundation for success in all subjects.

Spoken language

Pupils should be taught to speak clearly and convey ideas confidently using Standard English. They should learn to justify ideas with reasons; ask questions to check understanding; develop vocabulary and build knowledge; negotiate; evaluate and build on the ideas of others; and select the appropriate register for effective communication. They should be taught to give well-structured descriptions and explanations and develop their understanding through speculating, hypothesising and exploring ideas. This will enable them to clarify their thinking as well as organise their ideas for writing.

Reading and writing

Teachers should develop pupils' reading and writing in all subjects to support their acquisition of knowledge. Pupils should be taught to read fluently, understand extended prose (both fiction and non-fiction) and be encouraged to read for pleasure. Schools should do everything to promote wider reading. They should provide library facilities and set ambitious expectations for reading at home.

Pupils should develop the stamina and skills to write at length, with accurate spelling and punctuation. They should be taught the correct use of grammar. They should build on what they have been taught to expand the range of their writing and the variety of the grammar they use. The writing they do should include narratives, explanations, descriptions, comparisons, summaries and evaluations: such writing supports them in rehearsing, understanding and consolidating what they have heard or read.

Vocabulary development

Pupils' acquisition and command of vocabulary are key to their learning and progress across the whole curriculum. Teachers should therefore develop vocabulary actively, building systematically on pupils' current knowledge. They should increase pupils' store of words in general; simultaneously, they should also make links between known and new vocabulary and discuss the shades of meaning in similar words. In this way, pupils expand the vocabulary choices that are available to them when they write.

In addition, it is vital for pupils' comprehension that they understand the meanings of words they meet in their reading across all subjects, and older pupils should be taught the meaning of instruction verbs that they may meet in examination questions. It is particularly important to induct pupils into the language which defines each subject in its own right, such as accurate mathematical and scientific language.

Numeracy and Mathematics

Teachers should use every relevant subject to develop pupils' mathematical fluency. Confidence in numeracy and other mathematical skills is a precondition of success across the national curriculum. Teachers should develop pupils' numeracy and mathematical reasoning in all subjects so that they understand and appreciate the importance of mathematics. Pupils should be taught to apply arithmetic fluently to problems, understand and use measures, make estimates and sense check their work.

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Pupils should apply their geometric and algebraic understanding, and relate their understanding of probability to the notions of risk and uncertainty. They should also understand the cycle of collecting, presenting and analysing data. They should be taught to apply their mathematics to both routine and non-routine problems, including breaking down more complex problems into a series of simpler steps.

History

- A non-European society that provides contrasts with British history – one study chosen from: early Islamic civilisation, including a study of Baghdad c. AD 900; Mayan civilisation c. AD 900; Benin (West Africa) c. AD 900–1300.

Computing

Pupils should be taught to:

- Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration.
- Use search technologies effectively; appreciate how results are selected and ranked; and be discerning in evaluating digital content.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

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Ancillary Question 1: What are megacities and where are they located?

Ask the pupils to look very carefully at the 10 images in **Resource 1**. What can they identify and recognise in each photograph? What features do they all have in common? What do we call places such as this? Spend time encouraging the pupils to describe what they can see. Make a list on the board of all the features of *human geography* (created by people) and *physical geography* (largely natural or semi natural) that they can identify. It is likely that at some point a pupil will identify all of the places as *cities*. Spend time discussing what the pupils think a city is? What things do we find in cities that we don't in other places? Do they live in a city? If not then what kind of place is it? (*village* or *town*?) and how do we know? Where is the city closest to where they live? Explain to the pupils that all of the images in **Resource 1** are of the top 10 largest cities in the world – referred to as *megacities* as they each have more than 10 million residents.

Resource 2 is a table containing information about the top 10 megacities in the world. Can the pupils identify which photograph matches the city in the table? This task is a very difficult one as the pupils will quickly realise that all large cities in the world, wherever they are, all look very much the same. Why is this, do they think? For reference the numbers of the images 1–10 in **Resource 1** correspond to the cities 1–10 in the table in **Resource 2**.

Using the maps in **Resource 3** and **Resource 4** the pupils can fill in the second column in the table (country). Having completed this exercise, discuss with the pupils what they notice about the distribution of the top 10 cities? All but one is in the continent of Asia. The final column in the table shows the *population density* of each city (the average number of people living in each sq km). The first figure for Tokyo has been completed by dividing the population total by the land area of the city. The pupils can now complete the calculation (using calculators) for the remaining nine cities. Then they can compile their own rank order 1–10 (highest to lowest) of the cities in terms of population density. How does this change the ranking? Why do cities have such high population densities? How is it that so many people are able to live in such small areas? Encourage the pupils to look again at the images in **Resource 1** and think particularly about the high-rise buildings of apartments and flats, which are very high but are built on very small plots of land. The pupils can then complete the final sentence in **Resource 2**.

The map in **Resource 5** shows data about the distribution of megacities in the six inhabited continents for the pupils to study. Using the key, the pupils can complete the table in **Resource 6** and then write below the table three bullet points describing what they have observed from the map. For example, *Asia has the most megacities; Oceania has no megacities; After Asia, North America has the next largest number of megacities*.

Resource 5 is a map where the population density is shown. Crowded areas have over 100 people per square km, quite crowded has 10–100 people per square km. Ask the pupils to consider how the information in this map helps to explain why there are more megacities in Asia than in any other continent and none in Oceania. This is because Asia has a much larger population (65 per cent of the world's population) than any other continent and relatively few people live in Oceania (just 0.005 per cent of the world's population). As two out of every three people on Earth live in Asia then it will be more likely that most megacities will be found here – and the opposite will be true for Oceania.

Having discussed this, pupils can write a few sentences to complete the final question in **Resource 6**. For reference the total population by continent is:

Asia	4 557 000 000
Africa	1 130 000 000
Europe	739 000 000
North America	461 000 000
South America	411 000 000
Oceania	36 000 000

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Ancillary Question 2: Why did Baghdad become the first city in the world with one million people?

Print off copies of the map and engraving showing Bagdad in AD 900 (over 1100 years ago) in **Resource 7**. Encourage the pupils to look very carefully at the images. What can they identify from both? What clues can they see to help create a picture of what this city must have been like? River; bridges; districts; canals; palaces; mountains; ships; wall etc. If desired, this could be an appropriate time to link to History and a study of early Islamic civilisation and to compare and contrast with what was occurring at the same time in Britain. It is relevant here because in AD 925 Bagdad was the first city in the world to reach one million inhabitants. Work began on the city in AD 762 and it grew rapidly in size over the next 150 years as the capital of the early Islamic empire. This rapid growth took place because, at the time, it was the main centre of learning, medicine and trade in the world.

The Historical Association has a scheme of work with associated resources at www.history.org.uk/resources/primary_resource_8155.html

and an additional source of support for this enquiry can be found at www.keystagehistory.co.uk/KS2/teaching-early-islam-baghdad-KS2.html

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Ancillary Question 3: Why is Milton Keynes the United Kingdom's fastest-growing city?

Distribute copies of **Resources 8** and **9** to the pupils. **Resource 8** shows the 10 cities with the largest populations in the United Kingdom. **Resource 9** shows where these cities are located across the country.

Explain to the pupils that you are now going to give them a second 'top 10' list of cities – those cities in the United Kingdom where the number of people living there (i.e. its population) is growing faster than other cities in the UK. The table in **Resource 10** has this list.

Take some time to explore with the pupils what a percentage increase means. For example, if the number of people living in a place has increased by 17 per cent then this means that for every 100 people living in that city in 2001, there are now 117. The pupils can draw a histogram or bar graph to present this data.

Then using the map in **Resource 11**, they add the location of the 10 cities in the table to a copy of the map in **Resource 9**. They can also add a new symbol to the key to represent these 'fastest-growing cities'.

Explain to the pupils that the city of Milton Keynes has seen an increase of 43 000 in the number of people living there since 2001 and now has a population of 255 700. What is more, the city council expects this to increase by at least another 50 000 by 2026 – they are planning to build 28 000 new homes for these extra people! Ask the pupils what they think is the main cause of this growth in the number of people? Why are people moving to Milton Keynes in their thousands? Explain that you are now going to show them a film, which contains the answer to this question. Can they work out what the answer is? Now show the film at https://www.youtube.com/watch?v=UZkl_1TKFHQ

Discuss with the pupils what the main message of the film is. Why are so many people moving to Milton Keynes? Jobs! It is important for the pupils to understand that the most important reason for anyone moving anywhere in the world is to find work. If a city has lots of work opportunities, then people will move to it. When they have a job and are earning a salary they can afford to rent or buy a home and use the local amenities such as shops and cinemas.

There are 11 000 companies and businesses in Milton Keynes that need workers. So people move to the city to take up the vacancies in such companies as John Lewis, which has its main distribution centre in Milton Keynes (employing 470 people) from where it supplies both shops and online orders. See the film at https://www.youtube.com/watch?v=CX3_m6drY_8

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Ancillary Question 4: Why is Brasília the fastest-growing city in Brazil?

Give each pupil a copy of the political map of South America in **Resource 12**. Spend some time with the pupils discussing and reflecting upon the map of countries and cities. How many countries are there? Only two countries do not share a border with Brazil – which are they? Which two countries are entirely landlocked? Which are the capital cities of each of the countries? Using the scale line what is the approximate extent of the continent in kilometres from north to south and east to west?

Draw the pupil's attention to the city of Brasília in Brazil. This is the fastest-growing city in Brazil – increasing by 3 per cent a year. If its current population is 2 852 000 how many people will be living there in 10 years time?

Now show the pupils the film of Brasília at www.youtube.com/watch?v=m8fZeZTN0TE. Also project the images in **Resource 13**. Ask the pupils to observe the city and all of its buildings carefully. What do they notice about them? Encourage speculation and discussion. Then support the pupils to present the data in **Resource 14** as a simple line graph. What happened to the number of people in the city around 1960? What might have caused this to happen?

In 1960 the government of Brazil decided to build a brand-new capital city – until then the capital had been Rio de Janeiro. So, from 1960 the country's parliament, government buildings, law courts, main sports stadiums, banks, finance centres such as the Stock Exchange and 124 embassies were moved from Rio de Janeiro to Brasília. Hundreds of thousands of people whose jobs were affected in some way were also moved. Once the new city was established, a new airport was constructed and many shops and hotels set up creating thousands of new jobs particularly for people working in construction. The pupils will hopefully have noticed from the film and photographs that all of the buildings are modern with very few more than 50 years old. So, this is a city that is growing very quickly because of a decision made by the government of the country.

But why would a government decide to build a new capital city and move thousands of people from the old one? Ask the pupils to imagine what it would be like in the United Kingdom if the government decided that it was going to build a new capital and that London was no longer going to be the capital city. Encourage the pupils to think why this might happen? Tell the pupils that you are going to give them a series of clues as to why the government of Brazil moved its capital city. The first is the night-time satellite image of South America in **Resource 15**. The second piece of evidence is the map of South America environments in **Resource 16**. The third is the map showing the distribution of population in Brazil (population density of the different states within the country in **Resource 17**). The final piece of information is the five photographs of the shanty towns or *favelas* in Rio de Janeiro in **Resource 18**. From these clues can the pupils work out why the government of Brazil decided to move its capital to a new location?

Brazil is the fifth largest country in the world, both in terms of land area and population (208 million), but two-thirds of this population is found in a very small area of the southeast coast between São Paulo, Rio de Janeiro and Belo Horizonte. Overcrowding and the development of favelas, which house tens of millions of people, are commonplace in these cities. The interior of the country (mainly pampas grassland and tropical rain forest) is under exploited with a relatively low population density. In an attempt to encourage more businesses and people to move to the central areas of Brazil and away from the coast, the government moved the capital city away from the coast and over the mountains of the Brazilian Highlands to a more central location – leading by example.

As a summative piece to this ancillary question, the pupils could produce in pairs a three-minute television news report as it went out in 1960 announcing that Brazil was going to have a new capital city, where it would be located and why it was happening. They could use a PowerPoint presentation of a maximum of five slides to accompany their broadcast and the slides could include maps and photographs. The objective here is for the pupils to describe and explain the decision.

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Ancillary Question 5: How do the advantages of living in cities compare with the disadvantages?

Talk to the pupils about living in cities. Many will be able to draw upon their own experiences. Others will be able to base their feelings on visits or the experience of other members of their family or older adult friends and acquaintances. What do they feel are the best things about living in large cities? There must be attractions as the number of people choosing to live in cities goes up every year, so what are they? Take feedback and begin to make a list on the board.

Resource 19 is an extract from an online article by Alison Bryant at <http://lifestyle.allwomenstalk.com/amazing-advantages-of-city-living>

Distribute copies of this to the pupils and read through it with them, taking time to explain vocabulary as it arises. Alison clearly enjoys living in a city. How many of these things did the pupils consider initially?

Now show the pupils the images of city life in **Resource 20** and encourage them to think about the disadvantages of living in cities. What disadvantages come to mind? A particular kind of pollution known as *smog* (formed when moisture droplets in the atmosphere combine with particles of smoke and chemicals) often occurs in cities. This can affect people's health and quality of life, particularly if they are walking around outside.

Congestion from both crowds of people in the streets or trying to use the transport systems such as the underground or metro, and driving vehicles on roads is common. As a result it may take a very long time to travel only very short distances. Because cities contain many more people than in the countryside, crime rates tend to be greater in cities than in rural areas. There are also many people looking for a place to live so the availability of accommodation is often scarce and very expensive. This can lead to people becoming homeless if they are unemployed or unable to work for one reason or another.

Having discussed these alternative scenarios with the pupils and summarised on the board, the pupils could now use their notes on the disadvantages of city living to create a discursive piece of writing. For each of the points in favour of city living outlined by Alison Bryant they can now add to each paragraph an alternative view using the conventions of discursive writing in **Resource 21**. As a preliminary exercise the pupils could assemble the various sections of a discursive piece of writing about the pros and cons of school uniforms in **Resource 22** into the correct order, making note of the conventions used as they do so to use in their own writing. **Resource 23** can be used as a scaffold to structure and guide the pupils' writing.

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Assessment

This enquiry presents several opportunities to evaluate at different stages how the pupils are progressing in geography through the mastery of key geographical skills and outcomes. It is not necessarily intended that all of the following learning activities should be assessed. Rather the list can be used as a general guide for selecting perhaps one or two assessment opportunities relevant to individual pupils rather than on a whole group basis.

Ancillary Question	Learning Activity	Possible source of evidence of achievement
1	Observe and describe the key features of cities and suggest reasons for why people live in cities of such high density	Categorising sets of photographs Oral
1	Describe and begin to explain the distribution of megacities across the continents of the world	Completed data table and bullet points of observations
2	Explain some of the reasons why Baghdad was the first city in the world with a million inhabitants	Piece of explanatory writing
3	Identify and locate the top 10 cities in the United Kingdom with the largest populations and compare and contrast these with the top 10 fastest-growing cities in the country	Location map with key Histogram
3	Understand the main reasons why the population of any city can increase and explain why Milton Keynes in particular is the fastest-growing city in the United Kingdom	Short PowerPoint presentation
4	Recognise and locate the largest cities in South America	Map
4	Describe and offer reasons for the features of the city of Brasília, capital of Brazil	Oral
4	Explain and conclude why the Brazilian government built a new capital city in 1960	News report presentation
5	Compare and contrast the benefits and disadvantages of city life and reach a judgement as to which is most significant	Piece of discursive writing
Homework	Identify, describe and explain some of the main geographical features of one of the top 40 megacities in the world	Short PowerPoint presentation to group

Homework possibilities

To run parallel to their investigation of megacities at school the pupils could each research at home one of the top 30 or 40 largest cities in the world. They could produce a short PowerPoint to present to the rest of the group to cover: *location of city; current population and likely growth rate; reasons why the population of the city is growing and problems and challenges.*



Dates in this enquiry are based on the Christian Era and the designations BC and AD are used throughout. These designations are directly interchangeable with those referring to the Common Era, BCE and CE respectively.

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Further reading

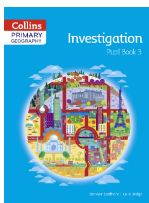
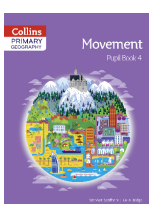
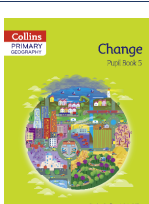
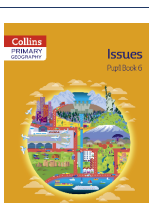


Collins *Big Cat* has books for every child in the classroom with a wide variety of genres, top authors, relevant topics and a range of engaging formats and illustrative styles. Listed below is a selection of from the Big Cat list to support the enquiry topics in Connected Geography for KS1. Find out more at Collins *Big Cat* – www.collins.co.uk

ISBN: 978-0-00-812777-0	<i>Spotlight on Brazil</i>	Charlotte Coleman-Smith	
ISBN: 978-0-00-759115-2	<i>Dubai from the Sky</i>	Rob Alcraft	

ГЕОГРАФИЈА ЅВИНАЅЈА

Collins *Primary Geography* provides a progressive, skills based scheme for primary school pupils.

ISBN: 978-0-00-756359-3	<i>Primary Geography Pupil Book 3 Investigation</i>	Stephen Scoffham and Colin Bridge	
ISBN: 978-0-00-756360-9	<i>Primary Geography Pupil Book 4 Movement</i>	Stephen Scoffham and Colin Bridge	
ISBN: 978-0-00-756361-6	<i>Primary Geography Pupil Book 5 Change</i>	Stephen Scoffham and Colin Bridge	
ISBN: 978-0-00-756362-3	<i>Primary Geography Pupil Book 6 Issues</i>	Stephen Scoffham and Colin Bridge	
ISBN: 978-0-00-756369-2	<i>Primary Geography Interactive resources 3-6</i>		