Collins

Scheme of work

Geography: Key Stage 2 Years 3 and 4

Teachers Professional Development Programme

Enquiry 2: Beyond the Magic Kingdom: what is the *Sunshine State* really like?

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Connecting the curriculum through enquiry based learning

Key Question: Beyond the Magic Kingdom: what is the *Sunshine State* really like?

Learning objectives

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

- Identify, describe and explain the function and attraction of theme parks around the world and in particular the *Magic Kingdom* in Florida;
- Identify, locate, compare and contrast the constituent states of the United States of America and recognise and describe key geographical features of one state other than Florida;
- Describe and explain the historical significance of the Maya civilisation and suggest reasons for its catastrophic end;
- Observe, describe, explain and begin to draw conclusions about the geographical pattern of the origin of visitors to the *Magic Kingdom* from countries around the world;
- Recognise and describe the key geographical features of a peninsula and compare and contrast the Floridian peninsula with a number of peninsulas at different locations around the world;
- Recognise the key human and physical features and achievements of the Kennedy Space Centre in Florida and explain

Purpose of the enquiry

This enquiry is designed to enable pupils to gain an understanding of the physical and human geographical features of a region in North America with which they can begin to compare and contrast the characteristics of a region of the United Kingdom. It begins by focusing on aspects of leisure and tourism with which pupils may be familiar both in the United Kingdom and overseas. Some may even have direct experience of visiting Florida and the *Magic Kingdom*. The objective of the investigation is to take the pupils beyond that with which they may be familiar and introduce them to different aspects of Florida's physical and human geography.

Through all of the enquiries the centrality of exploring people-environment interaction is maintained as pupils gain an understanding of the significance of climate, natural hazards, aerospace technology and the conservation of the environment and living things in the lives of residents. As is appropriate at Lower Key Stage 2 the anticipated outcomes involve greater degrees of progression and challenge than at Key Stage 1 as pupils are supported to demonstrate understanding through explanation and to begin to make judgements.

Context

The enquiry extends the study that pupils made at Key Stage 1 of continents and oceans, the distribution of hot and cold areas of the world and a contrasting locality outside of Europe. It enables them to study in depth the main geographical features of North America before focusing in on one region – the state of Florida in the United States of America (USA). For many pupils this will be the location in North America with which they are most likely to be familiar and therefore have some background knowledge (maybe even direct experience) of the place at the outset of the investigation. This being the case, the enquiry models the approach of beginning with the known and familiar and then extending out to the unknown and less familiar. Because of its huge physical and human diversity, the state of Florida provides an excellent location and context for pupils to explore and apply key concepts such as climate, economic activity, environmental management and sustainability.

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.
- 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, water.

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.

the geographical reasons for its location;

- Describe and explain why sea turtles which live in the waters around Florida are endangered and reach a judgement as to how they might be conserved for the future;
- Compare and contrast the climate of the United Kingdom and Florida and identify and explain the main differences particularly in relation to temperature and sunshine hours;
- Reach a conclusion and make a judgement as to the best time climatically for British tourists to holiday in Florida;
- Identify, describe and explain how hurricanes form and why they present such a threat to the people of Florida and understand the range of ways in which residents take measures to protect themselves and property from potential damage;
- Locate, describe and explain why the Everglades are a National Park.

Key Subject Vocabulary

Theme park; Tourist; Florida; United States of America; North America; Atlantic Ocean; Gulf of Mexico; State; Leisure; Recreation; Plan; Location; Scale; Distance; Political map; Island;

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 that 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.

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.

Key Question: Beyond the Magic Kingdom: what is the *Sunshine State* really like?

Ice sheet; Population density; Contiguous; Time zone; Pacific Ocean; Central America; Maya; Civilisation; Empire; City; Exploitation; Climate; Drought; Tropical rainforest; Trade; Astronomy; Environment; Choropleth map; Key; Quality of life; Reliability; Trustworthiness; Peninsula; Coast; Sea; Satellite; Physical features; Human features; Space; Exploration; Mission; Trajectory; Axis; Orbit; Rotation; Equator; Latitude; Gravity; Europe; South America; Endangered; Conservation; Preservation; Life cycle; Hazard; Pollution; Species; Predator; Conflict; Extinct; Management; Atmosphere; Zone; Region; Weather; Climate; Temperature; Precipitation; Sunshine; Intense; Shallow; Oblique; Hurricane; Evacuation; Tropical Storm; Caribbean; National Park; Everglades.

Science

Animals including humans

Pupils should be taught to:

- Construct and interpret a variety of food chains, identifying producers, predators and prey.
- Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.
- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Living things and their habitats

Pupils should be taught to:

- Recognise that living things can be grouped in a variety of ways.
- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
- Recognise that environments can change and that this can sometimes pose dangers to living things.
- Construct and interpret a variety of food chains, identifying producers, predators and prey.

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.

NOTES

Ancillary Question 1: Why is the Magic Kingdom the most popular theme park in the world?

Without any introduction show the pupils the a few minutes of the film at: www.youtube.com/watch?v=VyRHkAQ2wSM

Where and what is the *Magic Kingdom*? Has anyone been there or have any family members visited? What goes on there? After discussion explain that the *Magic Kingdom* is the most popular theme park in the world with an average of 53 000 visitors a day and a total of 19 million visitors 2015!

But what exactly is a theme park? Take time to discuss with the pupils why children and young people in particular so enjoy the *Magic Kingdom* theme park above all others in the world? The films at www.youtube.com/watch?v=65XzhWqanCo and www.youtube.com/watch?v=TVhIfQt7sog can be used to develop thinking and reasoning here.

The pupils can now be set a task to plan a day visit to the *Magic Kingdom.* On a copy of the *Magic Kingdom* map at www.wdwinfo.com/maps/MK.htm (which can be downloaded as a PDF) they can work in pairs to plan and plot a route around the park to ensure the following occurs during the day:

- The following seven attractions are visited in a logical sequence:
  - *Pirates of the Caribbean*
  - *Splash Mountain*
  - *Big Thunder Mountain Railroad*
  - *Haunted Mansion*
  - *The Barnstormer*
  - *Space Mountain Buzz Lightyear's Space Ranger Spin.*
- Somewhere to eat and drink is accessible after their third and sixth attraction.
- Two shops where Disney characters and souvenirs are available along their route.
- They pass restrooms at least twice!
- To be close to the parade route when they finish so that they can see the *Festival of Fantasy*.

NOTES

Ancillary Question 2: Where is the ***Magic Kingdom***?

During previous discussions the terms 'Florida' and 'America' will have almost certainly have cropped up at some point, especially if one or two pupils have actually visited the theme park. Establishing exactly where the *Magic Kingdom* is in the world provides an opportunity to revisit and extend the pupil's locational knowledge of the world by using a range of maps at different scales.

Provide the pupils with copies of the political map (a map that shows administrative detail such as countries and cities) in **Resource 1**. Ask them in which country they think the *Magic Kingdom* is located – the United States of America (USA).

Using a copy of the map in **Resource 2** remind the pupils of the seven continents and five oceans of the world. Then ask them to make a list of the other countries, in addition to the USA, that make up the continent of North America – the detailed map of North America in **Resource 3** will support this. If appropriate spend some time with the two maps and discuss any queries the pupils may have. For example, Greenland being named with Denmark in brackets below it (Greenland is a territory of the Kingdom of Denmark. It is self-governing in many aspects although foreign policy is determined in Copenhagen). Greenland is the world's largest island, over three-quarters of which is covered by the only permanent ice sheet outside of Antarctica. With a population of about 60 000 it is the least densely populated country in the world.

Give out the images in **Resources 4**, **5** and **6** explain to the pupils that the *Magic Kingdom* is in the *Sunshine State* of Florida in the USA. What do you think the date 1845 signifies? (when Florida acceded to the Union). How many other states are there in the USA? The map in **Resource 7** shows 48 of the 50. Which two are missing and why? The 48 states on the map are known as the *contiguous 48* because they are all joined together in one group. Alaska is separated from the 48 by the country of Canada and Hawaii by several thousand kilometres of the Pacific Ocean!

This is an opportunity to revisit time zones. Using the map in **Resource 8**, the pupils can work out how many different time zones there are in the USA (6) and, from this, calculate what time it would be in Hawaii and London when it is midday in Washington. Encourage discussion at this point about what the advantages and disadvantages might be of living in a country where there is five hours difference between different parts? What would it mean hypothetically if Glasgow was five hours behind London? What must it be like for a country such as Russia with 11 time zones www.bbc.co.uk/news/world-europe-29773559

Before moving on, a fun way to engage pupils with the different states of America is to put all of the names of the states into a hat and have pupils draw out one or two each. They can then access www.50states.com/facts/alabama.htm#.VnfrRvmLQUQ and identify five interesting or unusual things about their state. Pupils can then feedback beginning *with 'Five things you should know about the state of X are ……..'*

NOTES

Ancillary Question 3: Why did the great Maya civilisation of Central America come to an end?

If desired, a meaningful connection to the requirements of the history curriculum can be made at this point in the enquiry by introducing pupils to the seven countries of Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama. These countries combined are often referred to as *Central America* – linking the three countries of North America with those of South America.

The Maya civilisation was at its strongest between AD 250 and AD 900 (**Resource 9**), It covered all of Yucatán Peninsula of present-day Mexico, all of the territory now incorporated into the modern countries of Guatemala and Belize, as well as the western parts of Honduras and El Salvador. This ancillary question enables the pupils to understand what made this longest-running civilisation in world history so significant, particularly during this 'golden age' (AD 250–900). It also endeavours to solve the mystery as to what ultimately brought the civilisation (but not the Maya culture) to an end between AD 750 and AD 900.

Pupils can make comparisons between what was happening at various points in British history at the same time as the Maya were developing the science of astronomy, establishing a calendar and highly technical forms of writing, constructing huge architectural ceremonial buildings such as temples and pyramids, living in cities, becoming skilled farmers with underground reservoirs, setting up complex trade routes, wearing beautiful fabrics and designing astonishing musical instruments and living a highly religious life.

Possible theories to explain the end of the Maya civilisation include the emergence of wars and conflict between the powerful city states, the overexploitation of the tropical rainforest environment to a point where it could no longer support the population (which may have totalled 2 million at its height) and a catastrophic drought which destroyed farming. Whatever the cause or combination of causes, by AD 900 it is estimated that 90 per cent of Mayans had disappeared from its cities.

Maya at Mexicolore mexicolore.co.uk/maya/ together with the History Association www.history.org.uk/resources/primary_resource_8154.html and www.history.com/topics/maya all contain guidance, resources and suggested lines of enquiry to support the teaching of the Maya civilisation.

NOTES

Ancillary Question 4: Why do tourists come to the ***Magic Kingdom*** from some countries and not others?

Remind pupils that 19 million visitors enjoy the Magic Kingdom each year and in 2015 759 000 of these were tourists from the United Kingdom, just beaten into second place in the overseas visitor rankings by Brazil with 770 000. Overall 2 out of 10 visitors to the Magic Kingdom every day are tourists (people who are travelling or visiting a place for pleasure such as a holiday) who come from overseas countries.

Explain to the pupils that during one day in August 2015 three students studying A-Level Geography at school carried out a survey of 1000 people waiting to enter the gates of the *Magic Kingdom* in Orlando, Florida. They found out that these people lived in the following countries:

United States of America	605
Brazil	80
United Kingdom	73
China	52
Germany	48
Canada	36
Australia	27
New Zealand	18
Japan	18
South Korea	12
France	9
Italy	8
Sweden	7
Mexico	7

Using this data and a copy of the outline map in **Resource 10** the pupils can now draw their own choropleth map to present this data. The pupils must first choose five colours for the five categories of information and shade the boxes in the key according to their choice. Next they need to use the map in **Resource 1** to locate each of the countries on their map and then shade each country to represent the number of visitors, using the correct colour from the key. When all of the countries are located and correctly shaded, encourage the pupils to look carefully at their finished map. Can they think of any reasons to explain why most people came from these particular countries? Which continent has most countries represented in the list? Which continent (other than Antarctica, which is not officially 'inhabited') has least?

Now encourage the pupils to compare their choropleth map with the map and table in **Resource 11**. Take time to discuss with the pupils what they understand by 'quality of life' and explain that this map of countries combines three things – money, length of life and education. So, the more money people earn, the longer they live, the better they are educated and the higher or better is their quality of life. What kind of quality of life do people enjoy in the countries from which many visitors came? Why do you think there are no visitors from any country in Africa?

Encourage the pupils to consider how trustworthy or reliable they think the information that the geography students collected on that day outside the *Magic Kingdom* might be. Remember that, on average, 53 000 visitors visit each day and they asked just 1000 of these. How might things have distorted their results? For example, what if it so happened that a coach party of Brazilians pulled up outside just as they were beginning their surveys? What if a party of tourists from Norway didn't visit until the evening after the students had gone home? How do they know who might have arrived while they were having their lunch? Explore with the pupils the idea that since only 2 per cent of the visitors were surveyed, the results might not necessarily be that accurate!

NOTES

Ancillary Question 5: Why is the state of Florida a peninsula?

Show the pupils the satellite images in **Resource 12** and **13**. What do the pupils recognise about the shape of Florida? Explain that the state of Florida is the best example of what geographers call a *peninsula*. What do the pupils think a peninsula is? A peninsula is a piece of land that is almost surrounded by water but connected to a larger land mass on one side. Florida is not the largest peninsula in the world – in fact it is only eleventh. Divide the pupils into pairs and using the world map in **Resource 1**, challenge the pupils to identify each of the six peninsulas (all of which are larger than Florida) in **Resource 14** and list the countries that they cover. The answers are 1: Korean Peninsula, 2: Arabian Peninsula; 3: Alaska Peninsula, 4: Indian Peninsula and 5: Scandinavian Peninsula.

NOTES

Ancillary Question 6: Why is the Kennedy Space Centre in Florida?

To introduce this enquiry show the pupils the film at www.youtube.com/watch?v=4cOhZy7dhTo

Tell the pupils that this was the most famous and historic space rocket launch ever and occurred on 16 July 1969. Do they know why it was so memorable? Four days later the capsule Eagle touched down on the Moon and two men – Neil Armstrong and Edwin 'Buzz' Aldrin became the first humans to visit another object in space. Now show the film at www.youtube.com/watch?v=Jg80HZsv_js

Then distribute **Resource 15**, **16**, **17** and **18**. Explain that all American space flights since 1968 have been launched from the Kennedy Space Centre in Florida. Why did the Americans choose the east coast of Florida for space rocket launches? Encourage speculation and discussion. Tell the pupils that you are going to give them a number of clues from which you want them to try to work out why the east coast of Florida was selected as the location to build the Kennedy Space Centre.

The animation in **Resource 19** is the first clue and can be shown to the whole group. What does it show? The Earth rotating from west towards east. The map showing the location of the Kennedy Space Centre in relation to the Equator in **Resource 20** and the satellite image in **Resource 12** are two more clues. Encourage the pupils to think about:

Why is the Kennedy Space Centre on the east coast of Florida? This is so the rockets can be launched to the east over a huge area of empty ocean. This means that fuel tanks and other stages of rockets that are jettisoned during launches fall harmlessly into the ocean and are recovered easily. Also it is on the east coast because the trajectory of all launches is always from west to east to take advantage of the Earth's west to east rotation as shown in **Resource 19**.

Florida is almost as close as it is possible to get in the USA to the Equator. Why is this important? As the Earth spins, as in **Resource 19**, where will it be spinning fastest? This can be demonstrated by spinning a globe in front of the pupils. If we were standing on the Equator, would we be spinning faster or slower than at the North Pole or the South Pole? The closer a place is to the Equator, the faster it will spin as the Earth rotates. At the Equator the speed of rotation is 1670 km per hour, whereas at London (52° N) speed of rotation is only 551 km per hour. The closer to the Equator a rocket can be launched the better because it will require less fuel to escape the Earth's gravity. As soon as the rocket is launched it is already travelling at 1670 km per hour!

The photograph in **Resource 21** shows a European Space Agency Arian rocket being launched. Give out the map in **Resource 1** and ask the pupils where they think European countries launch their space rockets from? The United Kingdom, Germany, Italy? It's a country in South America. Which one do they think it is? It's French Guiana – just 4° N of the Equator!

NOTES

Ancillary Question 7: Why are sea turtles endangered and what is the Florida Turtle Conservation Society doing to protect them?

Show the pupils the film at www.youtube.com/watch?v=ZS0kXtmXuj8 and discuss the main elements of the life cycle of the Atlantic leatherback sea turtle featured in the film. Where does the female turtle lay her eggs? What happens after the eggs hatch? How much of her life does the leatherback spend at sea? What does she eat? How far does she migrate? How often does she return to the beach to lay eggs? After hatching on a beach male sea turtles may never return to land during a life that can last for 60 years. Females only return every two to three years to lay eggs. Read the story *Into the Sea* (by Brenda Guiberson and Alix Berenzy, ISBN: 978-0805064810) to the pupils and show the wonderful illustrations. This will remind them of the life cycle of a sea turtle and also introduce the concept of *hazard.* Ask the pupils to listen out particularly for things the turtle encounters that are *natural hazards* and those that are hazards and *risks* to the turtle created by humans.

Of the seven species of sea turtle in the world, five are found in the waters around Florida. This means that beaches such as the one at Melbourne (**Resource 22**) on the east coast (see map **Resource 23**) are a critical link in their life cycle, as this is where they will come ashore to lay their eggs. This can be seen in the film at www.youtube.com/watch?v=4nQGexBhs0Y

It is very unusual for turtles to be seen laying their eggs during the day. They much prefer the cover of darkness because there are fewer people to disturb them and they are also less visible to creatures that might attack them. They are particularly vulnerable because they are only able to move slowly. After a few weeks in the warm sand the eggs hatch and the hatchlings then face the challenge of reaching the sea without being caught by a wide range of natural predators such as crabs and birds – only one in every 1000 hatchlings makes it to adulthood. See the film at www.youtube.com/watch?v=ZB8lKvG_8YU

Write the word *endangered* on the board and ask the pupils what they think it means? There are seven different species of sea turtle in the world and six of them are endangered. This means that the number of creatures left is so small that they are in danger of becoming *extinct*. What does *extinct* mean? It means gone for ever. Because Florida is such a popular destination for beach holidays and turtles come ashore to lay their eggs at the warmest time of the year, conflicts can arise between the needs of the turtles and the needs of humans. Show the pupils the combined animation and film by the Marine Conservation Society, *Turtles in Trouble*, produced by the Travel Foundation. It is an excellent summary of all of the key threats to sea turtles and what tourists and visitors to beaches can do to reduce these problems. The film is at www.youtube.com/watch?v=FwZx8Lz3Jyk

In America car bumper stickers are a popular and common way for people to show their support for something or somebody. For example, a candidate for president that they think other people should vote for, a safety message or something humorous that other people might smile about when stuck in a traffic jam (see examples in **Resources 24** and **25**). Most bumper stickers are about 30 cm by 8 cm (12 in by 3 in) and are often made of PVC. In Florida the Sea Turtle Conservancy www.conserveturtles.org/ has produced bumper stickers for people to put on their cars to spread the message that sea turtles need dark beaches during the egg laying and hatching season, as shown in **Resource 26**. They have a simple statement on the front e.g.*Keep Sea Turtles in the Dark* and *Sea Turtles Dig the Dark*. On the reverse, the backing sheet is peeled off to reveal the adhesive strip, which also has a brief explanation of why taking this particular action is important. Now set the pupils the task of designing a similar bumper sticker (front and reverse) based on another recommendation from the *Turtles in Trouble* film, which can be shown again at this point if required. Each sticker must have an eye-catching design on one side and, on the reverse, a short, simple and creative statement with an explanation as to why taking this action is important. At the conclusion of this activity make a display of the front and reverse of the stickers.

NOTES

Ancillary Question 8: How and why is the climate of the ***Sunshine State*** different from where I live?

Resource 27 is a climate graph for London showing the average temperature in degrees centigrade and precipitation (total amount of moisture that falls from the sky in any form e.g. rain, snow, frost, fog, dew) measured in millimetres. The blue bars are precipitation and the value is read from the right vertical axis. The red dots joined by a line are the temperature with the value read from the left vertical axis. Explain to the pupils that climate graphs are what geographers draw and use to compare the weather and climate in different places in the world.

Now give out **Resource 28** and support the pupils to interpret the graph and fill in the column with the right answers for London. Next the pupils can use the climate graph for Miami in **Resource 29** to compare with that of London. Then interpret the graph to fill in the correct answers in the column for Miami in **Resource 28**.

Next distribute **Resource 30**, which shows the average daily sunshine hours for each month in Miami, Florida. Using the monthly sunshine data in **Resource 31** for London, the pupils can then shade in the correct proportion of each monthly bar on the Miami graph to show how much sunshine London experiences in the same month. They can use an alternative colour or ink pattern and create a key to explain what the graph shows. Take time at the end of these activities to discuss with the pupils what they have discovered from comparing and interpreting both sets of climate data.

So what is the big attraction of Florida for British people? What time of the year do they feel it would be best to visit Florida and why? To support discussion the pupils can also look at the weather summary for each month in Florida in **Resource 32**. Compared with the UK, Florida is very warm all year round and has much longer hours of sunshine each day on average. Using a wall map of the world to help, ask the pupils why they think that Florida has longer hours of sunshine and much warmer temperatures than the UK? The answer to be looking for is '*because it's closer to the Equator*'. The closer to the Equator a place is, generally the warmer it will be and have more sunshine hours than a country further away. The angle of the sun's rays are more vertical closer to the Equator, which means the rays are shorter and more intense than places such as the UK where the rays of the sun are longer and more shallow.

How close or far away a place is from the Equator is shown by *lines of latitude*. These are horizontal lines that travel east to west around the world joining up places. Each line of latitude is always the same distance from the Equator. Lines of latitude have a number, measured in degrees, between 0° (the Equator) and 90° N (North Pole) and 90° S (South Pole). The Tropic of Cancer is at 23.5° N and the Tropic of Capricorn is at 23.5° S. The lower the number of the line of latitude, the closer it will be to the Equator. Generally, any places along a line of latitude will be warmer and have more sunshine than places along a higher line of latitude (which will, in comparison, be colder and have less sunshine). Use copies of the map in **Resource 33** to support explanation here.

Before moving on it is important for the pupils to recognise that they have been investigating *climate* (the average pattern of the weather from year to year) as opposed to the *weather*. In Key Stage 1 enquiries they encountered weather as atmospheric conditions, such as cloud cover, temperature and rain, all of which change from one moment to another. The map of climate zones and climate graphs for nine locations around the world in **Resource 34** can be used to consolidate this learning.

Ask pupils to think about when they arrive in another location, such as Florida, for a holiday they will have to do things to adjust or get used to living there for a while. Ask the pupils to suggest things that they might have to do e.g. wearing different clothes; a hat to keep the sun off their heads; sun tan lotion; drinking more than usual to prevent dehydration; changing into specialist gear e.g. ski clothes or diving equipment etc.

NOTES

Try to draw out of the pupils that, on many occasions, they will have to change the time on their watches by moving the time forwards or backwards from the UK time. This is because places around the world are in different time zones from the UK. Using the map of time zones in **Resource 35** and of the USA in **Resource 36**, challenge the pupils to calculate the following: *if it is 12:00 midday in the UK what time is it in*:

- *Miami, Florida (−5 hrs = 07:00 a.m.)*
- *Dallas, Texas (−6 hrs = 06:00 a.m.)*
- *Salt Lake City, Utah (−7 hrs = 05:00 a.m.)*
- *San Francisco, California (−8 hrs = 04:00 a.m.)*
- *Anchorage, Alaska (−9 hrs = 03:00 a.m.)*
- *Honolulu, Hawaii (−10 hrs = 02:00 a.m.)*

Take time to encourage reflection about what it must be like to live in a country where there is a five hour time difference between one place in that country and another? Encourage the pupils to think about the difficulties that would arise if there was say five hours difference in time between London and Manchester? How would people do business if, for example, as companies were opening in London, they were closing at the end of the day in Manchester? What about the timing of television and sports events? It would mean, for example, that not everyone would watch the *X Factor* at the same time. On New Year's Eve, some people would be celebrating the arrival of the New Year five hours before people elsewhere in the same country.

To produce a summary map of North America, the pupils can use the outline map in **Resource 37** together with the maps in **Resource 36** and **Resource 38** to complete the following tasks for the USA:

- *Shade in and label the countries of Mexico and Canada (take care that the pupils do not include the state of Alaska as part of Canada).*
- *Label the Pacific Ocean.*
- *Mark the location and label the capital city of Washington.*
- *Mark the location and label the largest cities of New York; Chicago; Houston; Philadelphia; San Diego; Detroit; Dallas; Phoenix; San Antonio.*
- *Highest point: Denali in Alaska – mark and label.*
- *Lowest point: Death Valley, California – mark and label.*
- *Draw the route of the largest river: Mississippi-Missouri and label.*
- *Shade and label the area of the Rocky Mountains.*
- *Label the largest lake entirely within the USA – Lake Michigan.*

NOTES

Ancillary Question 9: How to Floridians cope with hurricanes?

Although the weather of the *Sunshine State* is very attractive to both people and sea turtles, there is one aspect of the weather that they both fear. Can the pupils think what it could be? Tell them that we don't get these weather events in the UK and that they only occur in tropical and sub-tropical regions.

Without introduction and explanation show the pupils the short silent time lapse film at www.youtube.com/watch?v=zx0vJvB4HTQ

It's a satellite film from space showing the formation and movement of what weather phenomenon? The tell-tale swirl of cloud circulating anti-clockwise with a 'hole' or 'eye' in the middle is the signature of a tropical storm or hurricane – in this case Hurricane Sandy, which hit Florida in 2012. If the winds are circulating in an anticlockwise direction at speeds of between 88 and 119 km per hour then it is known as a *tropical storm.* Winds over 119 km per hour register as a *hurricane.*

There are five categories of hurricane numbered 1 to 5. A category 5 hurricane will have winds blowing consistently at speeds of over 252 km per hour. During the hurricane season from June to October, Florida may be hit by five or more tropical storms or hurricanes each year. They usually form over warm oceans when air rises in spirals over the sea. Gradually the air in these spirals moves faster and faster (Hurricane Patricia in 2015 had recorded wind speeds of 321 km per hour!). Hurricanes last between two and five days and the winds are strong enough to demolish houses and whip up huge waves known as *tsunami*. Each year between June and October at least five powerful hurricanes form over the warm waters of the Gulf and Mexico and move out over the islands of the Caribbean Sea and southern USA. The entire 2012 hurricane season with each hurricane named as it appears, can be seen in less than five minutes in the NASA satellite time-lapse film at www.youtube.com/watch?v=02N2NujPJL4

The levels of destruction in Florida that can occur as a result of hurricane impacts is well illustrated by the television news reports at www.youtube.com/watch?v=QDFK40UMotc and www.youtube.com/watch?v=o_uzqfhwc4k

If you live in Florida or are visiting on holiday it is very important that you know exactly what to do in the event of a hurricane warning.

The first thing to know is the location of your nearest *Hurricane Evacuation Centre*. Such centres are very strong buildings, deliberately strengthened when being built to withstand hurricane-force winds. In many neighbourhoods these centres are schools and are marked with a sign such as that shown in **Resource 39**. They are open for people to move into whilst the storm lasts, if they feel unsafe in their homes.

For people living or staying close to the coast (and most places in Florida are within 40 km of either the Atlantic or Gulf coasts), the next most important thing to know is the *Highway Coastal Evacuation Route* which are roads shown clearly with signs, such as the one in **Resource 40**.

For people staying in their homes it is very important that they take safety precautions in advance of the hurricane hitting and know exactly what to do and not to do. In most cases meteorologists are able to predict the arrival of a hurricane at least 3 to 5 days in advance using satellite photographs and data.

The new community of Harmony in central Florida http://harmonyfl.com/ has a population of 1200 and is growing rapidly. The community manager has decided that a leaflet should be designed to tell people that move in to the community what they should do before, during and after a hurricane. The pupils are to do this for him/her. Working in pairs they are to design a leaflet and write a list of instructions illustrating them appropriately. The leaflet is to be called *'What to do before, during and after a hurricane'.* Model the conventions of instructional writing by introducing to pupils an example: '*What to do in a flood*' (**Resource 41**).

NOTES

Using **Resource 42**, discuss with pupils the main conventions of instructional writing such as:

- *Title that identifies the audience and indicates what is to be achieved.*
- *Use of imperative verbs to tell the reader what to do.*
- *Chronological sequence to show the order that is to be followed.*
- *Use of present tense throughout.*
- *Repeated use of the words 'you' and 'your' directed at an anonymous reader.*
- *Factual descriptive words for precision and clarity.*
- *Use of 'do' and 'don't' to clarify.*

Following this, spend five minutes or so with the whole group brainstorming all the things that it would be sensible to consider doing once a hurricane warning has been received – both during the hurricane itself and also afterwards. At this point watch the hurricane preparedness film made by school pupils in south Florida at www.youtube.com/watch?v=yXjc4URLIyM

Now give each pair 15 minutes or so to consider what they might add. After this period of consideration encourage each pair to volunteer something and compile three lists on the board.

Next give out a jumbled list of possible instructions in **Resource 43** and ask pupils to underline in red colour the instructions that are recommended before the hurricane, blue for during the hurricane and green for afterwards. How do the lists compare with what the pupils recommended?

Finally, encourage pupils to complete their leaflet to go to all homes in Harmony, including the top five most important instructions before, during and after the hurricane. Also support them to add simple but informative illustrations to the list of instructions – not everyone may have English as their first language and diagrams/cartoons will also help to get the messages across. The template in **Resource 44** can be used by pupils as a scaffold for their writing if required.

NOTES

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	**Identify**, **describe** and **explain** the function and attraction of theme parks around the world and in particular the *Magic Kingdom* in Florida	Annotated plan of a route around the Magic Kingdom for a day visit
2	**Identify**, **locate**, **compare and contrast** the constituent states of the United States of America and **recognise** and **describe** key geographical features of one state other than Florida	Short PowerPoint presentation
3	**Describe** and **explain** the historical significance of the Maya civilisation and suggest **reasons** for its catastrophic end	Piece of discursive writing
4	**Observe**, **describe**, **explain** and begin to draw **conclusions** about the geographical pattern of the origin of visitors to the *Magic Kingdom* from countries around the world	Choropleth map Oral
5	**Recognise** and **describe** the key geographical features of a peninsula and **compare and contrast** the Floridian peninsula with a number of peninsulas at different locations around the world	Annotated world map
6	**Recognise** the key human and physical features and achievements of the Kennedy Space Centre in Florida and **explain** the geographical reasons for its location	Piece of explanatory writing
7	**Describe** and **explain** why sea turtles which live in the waters around Florida are endangered and reach a **judgement** as to how they might be conserved for the future	Bumper sticker (both sides)
8	**Compare and contrast** the climate of the United Kingdom and Florida and **identify** and **explain** the main differences particularly in relation to temperature and sunshine hours	Climate graphs Oral
8	Reach a **conclusion** and make a **judgement** as to the best time climatically for British tourists to holiday in Florida	Magazine advertisement
9	**Identify**, **describe** and **explain** how hurricanes form and why they present such a threat to the people of Florida and **understand** the range of ways in which residents take measures to protect themselves and property from potential damage	Instruction leaflet
Homework	**Locate**, **describe and explain** why the Everglades are a National Park	Report

NOTES

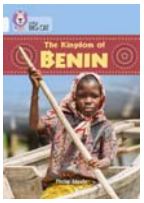
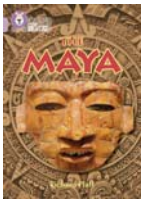
Homework possibilities

At home the pupils could be asked to investigate the question: *What are the Everglades and why are they a National Park?* The Everglades of southern Florida are a designated National Park and UNESCO World Heritage Site and was established to protect a fragile ecosystem within a network of wetlands and forests. It is home to 36 threatened species including the Florida Panther of which probably less than 200 remain in the wild. The pupils' research could be focused on the following questions: *Where is the Everglades National Park and what are its geographical features? Why is it so important? Why do so many people visit the Everglades? What is being done to conserve the Everglades for the future?* Not only will this further broaden the pupil's understanding of the *Sunshine State* (not just the *Magic Kingdom*) but also provide an introduction to National Parks, a topic to which they will return in Years 5 and 6.

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.

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: 978-0-00-812794-7	*The Kingdom of Benin*	Philip Steele	
ISBN: 978-0-00-812797-8	*The Maya*	Richard Platt	

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