# YEAR 6: AUTUMN 1 – OCEAN EXPLORERS: DESTINATION NORTH AMERICA

## GEOGRAPHY:

### LOCATIONAL KNOWLEDGE - RECALL AND NAME:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **The 7 continents:** | *Europe* | *Asia* | *Africa* | *Oceania* | *North America* | *South America* | *Antarctica* |
| **The 5 Oceans:** | *Pacific Ocean* | *Arctic Ocean* | *Atlantic Ocean* | *Indian Ocean* | *Southern Ocean* | | |
| **The 2 poles/circles:** | *North Pole/ Arctic Circle* | *South Pole/ Antarctic Circle* | | | | | |
| **The lines of latitude and hemispheres:** | *The Equator* | *The Tropic of Cancer* | *The Topic of Capricorn* | *Northern Hemisphere* | *Southern Hemisphere* | | |
| **The 4 major climate zones of the World** | *Tropical Climate Zone* | *Subtropical Climate Zone* | *Temperate Climate Zones* | *Polar Climate Zones* | | | |
| **The 8 major tectonic plates of the World** | *The African Plate* | *The Antarctic Plate* | *The Eurasian Plate* | *The Indo-Australian Plate* | *The North American Plate* | *The Pacific Plate* | *The South American Plate* | *The Nazca Plate* |
| **The countries of N. America and their capital cities** | *USA* Washington DC | *Canada* Ottawa | *Mexico* Mexico City | *Greenland* Nuuk | *Guatemala* Guatemala City | *El Salvador* San Salvador | *Belize* Belmopan | *Honduras* Tegucigalpa | *Nicaragua* Managua | *Costa Rica* San Jose |
| | *Panama* Panama City | *Cuba* Havana | *Haiti* Port au Prince | *Dominican Republic* Santo Domingo | *The Bahamas* Nassau | *The Caribbean* Varying islands | | | | |
| **The 3 plate boundaries** | ***Transform Plate Boundary*** *Two plates move **past** each other* | ***Constructive Plate Boundary*** *Two plates move **apart** from one another* | ***Destructive Plate Boundary*** *Two plates move **towards** each other* | | | | | | | |

### LOCATIONAL KNOWLEDGE – USE RESOURCES TO LOCATE:

| | | | | | | |
|---|---|---|---|---|---|---|
| **Globe:** | *The 7 continents* | *The 5 Oceans* | *Major seas* | *2 poles* | *The Equator* | *The Tropics* |
| **Atlas:** (4 point grid reference) | *The countries of North America and their capital cities* | *USA and its states* | *Major physical landmarks/areas of interest (rivers, seas, mountains, volcanoes etc) of North America* | *Major human/manmade landmarks/areas of interest of North America* | | |
| **Map (State):** (6 point grid reference) | *Cities, towns and villages of chosen state* | *Heritage sites of chosen state* | *Human (man-made) features of interest in chosen state* | *Physical (natural) features of interest in chosen state* | | |
| **Compass:** | *Use N, NE, E, SE, S, SW, W, NW and the compass bearings to 1˚ to give and follow directions to reach a chosen destination in the local area.* | | | | | |

### UNDERSTAND, DESCRIBE AND EXPLAIN:

**Physical Geography:** Understanding the physical change/impact to land terrain over time: The cause and effect of earthquakes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Earthquake* | *Plate boundaries* | *Destructive* | *Constructive* | *Transform* | *Focus* | *Epicentre* | *Seismic waves* | *Magnitude* |
| *Earth's crust* | *Tectonic plates* | *Mantle* | *Magma* | *Convection currents* | *Subduction zone* | *Moment Magnitude Scale (MMS)* | | |

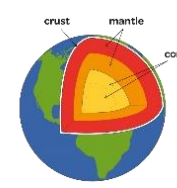
| Learning links: |
|---|
| **Geography:** |
| **Y4: Mountains and Volcanoes** Earth's crust/ Tectonic plates/ Plate boundaries/ Fault lines |

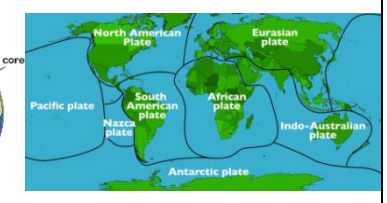
| Learning links: |
|---|
| **Science:** |
| **Y3: Rocks** Magma/Molten rock |

**The Earth's Crust, Tectonic Plates and Plate Boundaries:**

Every ***30 seconds*** there is an ***earthquake*** in the ***world*** and ***each year*** there are approximately ***100 earthquakes*** that cause ***serious damage***.

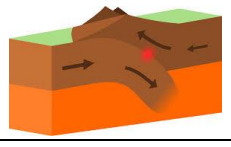
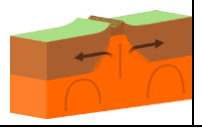
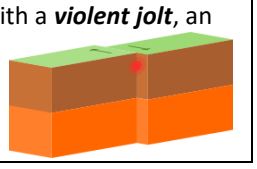
The Earth's surface – ***the crust***- is not one smooth unbroken covering. Rather it is made of different sections called ***plates*** (like a ***cracked egg shell***). There are ***eight major plates***: Eurasian, Pacific, Indo-Australian, Antarctic, Nazca, North American, South American and African.




The ***Earth's plates*** are ***constantly moving***; on average, this movement is ***between 1 and 10 cm per year***. ***Convection currents*** in the ***mantle*** cause the ***tectonic plates to move***. The ***mantle*** is made of ***molten*** **rock (magma).** As the ***magma*** moves, so do the plates above.

Where the ***plates meet*** is called the ***plate boundary***. Each plate ***moves*** in a ***certain direction***. Because of this, at the ***plate boundaries***, the plates ***react*** differently. There are ***3*** types of ***plate boundary***:

| Destructive Plate Boundaries: | Constructive Plate Boundaries: | Transform Plate Boundaries: |
|---|---|---|
| At a ***destructive plate boundary*** (also called ***convergent*** boundaries) two ***plates*** move ***towards*** another. One plate is then ***pushed underneath*** the other. (It is the ***heavier plate*** that is ***forced beneath*** the lighter plate). The ***point*** at which one plate is ***forced beneath*** the other is called the ***subduction zone***. The ***plate*** then ***melts*** to become ***molten rock*** (***magma***). The ***magma*** then ***forces*** its way up to the plate boundary to ***form a volcano***. **Example**: Eurasian plate and Pacific plate where over 400 volcanoes are formed – most underwater.  | ***Constructive plate boundaries*** (also called ***divergent*** boundaries) ***move apart*** from each other. As they ***move apart***, ***molten rock (magma) rises*** from the ***mantle***, then ***cools*** and ***hardens*** to form new rock. **Example:** Eurasian plate and North American plate (Iceland)  | At ***transform plate boundaries*** two ***plates move past each other***. ***Friction (rubbing)*** may ***cause them to stick***, but when they eventu***ally become unstuck***, often with a ***violent jolt***, an ***earthquake*** results.  |

**Earthquakes:**

Like volcanoes, ***earthquakes occur primarily*** along the ***boundaries*** of ***tectonic plates***. ***Earthquakes*** happen when two ***tectonic plates*** suddenly slip. This causes ***shock waves*** to ***shake*** the ***surface*** of the Earth in the form of an ***earthquake***.

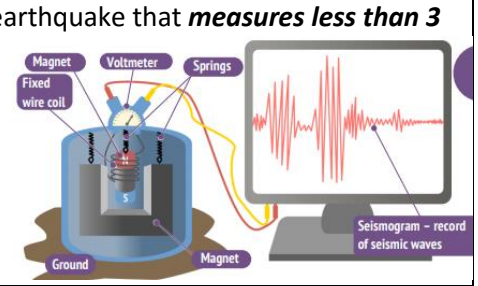
***Earthquakes*** usually occur on the ***edges*** of large sections of the Earth's crust called tectonic plates. These plates ***slowly move*** over a long period of time. Sometimes the ***edges***, which are called ***fault lines***, can get ***stuck***, but the ***plates keep moving***. ***Pressure*** slowly starts to ***build up*** where the edges are stuck and, once the ***pressure gets strong enough***, the plates will ***suddenly move*** causing an ***earthquake***.

**Seismic Waves:**

***Shock waves*** from an ***earthquake*** that ***travel through the ground*** are called ***seismic waves***. They are ***most powerful*** at the ***centre of the earthquake***, but they travel ***through*** much of the ***earth*** and ***back to the surface***. They ***move*** quickly at ***20 times the speed of sound***.

Earthquake Scientists (***Seismologists***) use ***seismic waves*** to ***measure*** the ***size and destruction*** of an ***earthquake***. They use a device called a ***seismograph*** to ***measure*** the ***size of the waves***. The ***size of the waves*** is called the ***magnitude***.

To ***measure*** the ***strength*** of an earthquake, ***seismologists*** use a scale called the ***Moment Magnitude Scale*** or ***MMS*** (it used to be called the Richter scale). The ***larger*** the ***number*** on the MMS scale, the ***larger*** the ***earthquake***. You usually ***won't*** even ***notice*** an earthquake that ***measures less than 3*** on the ***MMS scale***. ***Here are some examples of what may happen depending on the scale:***



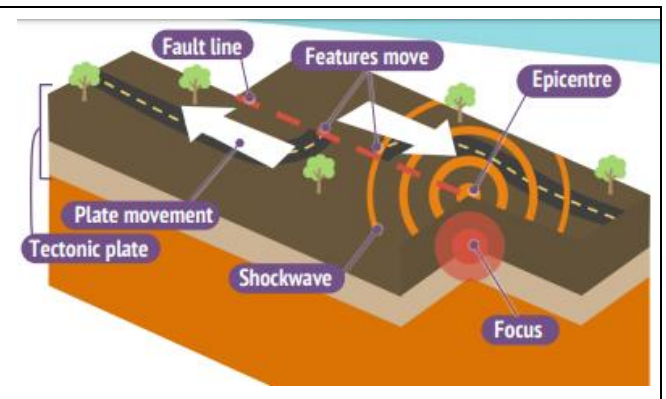

**4.0**: Could shake your house as if a large truck were passing close by. Some people may not notice.
**6.0**: Stuff will fall off of shelves. Walls in some houses may crack and windows break. Pretty much everyone near the centre will feel this one.
**7.0**: Weaker buildings will collapse and cracks will occur in bridges and on the street.
**8.0:** Many buildings and bridges fall down. Large cracks in the earth.
**9.0 and up:** Whole cities flattened and large-scale damage.

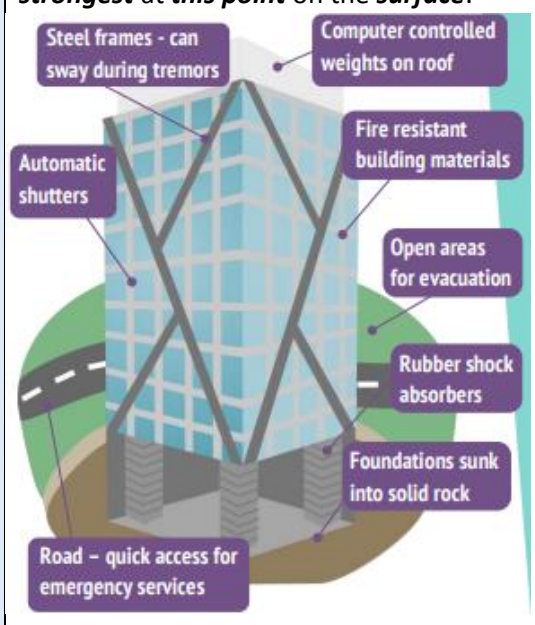
### KEY ASSESSMENT QUESTIONS AND SCENARIOS:

| EXS: | GDS: |
|---|---|
| **Locational: North America** | **Locational: North America** |
| Can you locate _____ using a map of a _____ state? (6 point Grid reference) | What is the locational difference between USA and Poole? |
| Can you locate _____ using an atlas? (6 point Grid reference) | How is UK different/similar to USA? |
| Can you locate _____ using a globe? | How is USA split into sections? |
| Use 8 points of a compass and bearings to 1° alongside an OS map to travel in the local area. | How do countries differ based on their location on the globe? Why? |
| Can you name the major countries and capital cities of North America? | |
| Create a travel guide of a USA trip which must include human and physical characteristics. | |

**Epicentre and Focus:**

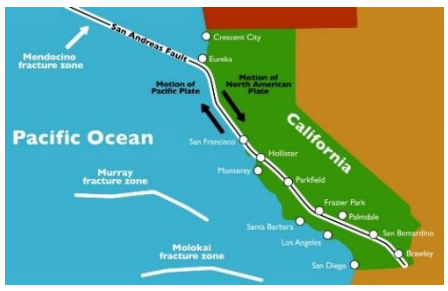
The place where the ***earthquake starts***, ***below the surface*** of the earth, is called the ***focus***. The place ***directly above this*** on the ***surface*** is called the ***epicentre***. The ***earthquake*** will be the ***strongest*** at ***this point*** on the ***surface***.




**Earthquake hazards:**

***Where*** an ***earthquake occurs affects*** the ***damage*** it can cause. ***Earthquakes*** can cause ***buildings*** to ***collapse***, often killing or injuring the people trapped inside. They can ***destroy roads***, ***railways*** and ***electricity cables*** which can delay communications and rescue attempts. ***Earthquakes*** can also ***trigger*** other ***natural hazards*** including ***rock falls, landslides, tsunamis and even volcanic eruptions***. ***Geologists*** know ***where earthquakes*** are ***likely to happen*** but it is ***impossible to predict when*** an earthquake will occur. It is therefore important for ***earthquake-prone countries*** to be ***prepared*** at all times. Engineering that allows ***buildings*** to '***wobble'*** instead of remaining stationary can ***help stop buildings collapsing*** and therefore potentially ***save thousands of lives*** during a large earthquake. ***Educating*** the public is also very ***important*** so that people know what to do if they feel an earthquake. Generally, ***staying indoors*** under a sturdy table or doorframe is the safest thing to do.




**The San Andreas Fault Line, California:**

The ***San Andreas Fault*** marks the ***boundary*** between ***two tectonic plates***: The ***Pacific*** plate and the ***North American*** plate. This is a ***transform*** plate boundary: the ***Pacific*** plate (on the west) moves in a ***north westerly*** direction, opposite to the ***North American plate*** (on the east). This causes ***earthquakes*** along the ***fault line***. The entire ***San Andreas Fault*** is ***1,287 km*** long (***800 miles***) and reaches to ***depths*** of ***16 km (10 miles).*** In places, the Fault is ***1.5 km wide (1 mile)***. The ***San Andreas Fault*** extends from ***northern California*** (on the west coast of USA) ***southwards*** to ***Cajon Pass*** near San Bernardino.

The ***plates move***, on average, ***6cm each year***. If a person stood on one side of the Fault and looked across it, features on the opposite side would appear to have moved to the right. Geologists believe that the total displacement (movement) along the Fault is at least 563 km (350 miles) since the San Andreas fault came into being about 15-20 million years ago.

**The 1906 San Francisco earthquake:**

***Thousands*** of ***small earthquakes*** occur in ***California*** each year. ***Large, highly destructive*** earthquakes, however, ***occur*** on average ***once every 100-150 years*** along the Fault. The ***San Francisco*** earthquake of ***April 18, 1906*** was the ***most recent*** of these. It is estimated to have had a ***magnitude of 8.3*** on the Richter scale and lasted for ***one minute***. It resulted from a ***movement*** of the ***Fault by 6 metres***. ***Damage*** was caused by both the ***earthquake*** and by the ***fire*** that swept through the city afterwards. Nearly ***8 square kilometres*** and ***28,000 buildings*** were destroyed resulting in ***millions of dollars in damage***. ***700 people*** were ***killed*** and ***thousands*** were ***left homeless***.

## UNDERSTAND, DESCRIBE AND EXPLAIN:

**Human Geography:** To understand how the human and topographical features of the USA are used to promote tourism

| | | | | | | |
|---|---|---|---|---|---|---|
| ***Tourism*** | ***Economy*** | ***Industry*** | ***Topographical features*** | ***Human features*** | ***Land-use*** | ***Accessibility*** |
| ***Entertainment*** | ***Landmarks*** | ***Landscape*** | ***Varying climate zones*** | ***Varying biomes*** | ***Diverse*** | ***Settlement*** |

| Learning links: |
|---|
| **Geography:** |
| **Y3: Poole** Land-use/Tourism/ Settlement/Economy/ Industry |
| **Y4: Naples** Land-use/Tourism/ Settlement/Economy/ Industry |

**Tourism in the USA:**

The ***USA*** (United States of America) is a ***rich*** and powerful country in the ***continent*** of ***North America***. It is made up of ***50 smaller states*** and the ***capital*** city is ***Washington DC***.

***USA*** has borders with ***Canada*** to its north and borders ***Mexico*** and the Gulf of Mexico to the south. The United States of America (USA or US) is a ***diverse***, multi-cultural country; its ***economy*** is the ***largest in the world***.

The USA is such a ***large country*** that it has many ***different climates*** and even ***three different time zones***. The ***USA*** is home to ***spectacular landscapes***, from ***snowy mountains*** to ***arid deserts***, huge ***forests*** and vast ***grasslands***.

***Tourism*** is an enormous part of the ***US economy***. It has the ***world's largest*** travel and ***tourism economy***: It generates an income of around ***$1.5 trillion*** ($1,500,000,000,000) every year. Because of this, the ***USA invests*** heavily in ***ensuring*** that the USA is ***accessible*** and ***attractive*** to tourists from all across the globe. Here are some of the most popular ***physical*** (***topographical***) and ***human tourist attractions*** in the ***USA***:

| Physical (natural) attractions: | Human (man-made) attractions: |
|---|---|
| The Mississippi River | Mount Rushmore |
| The Grand Canyon | New York City (Statue of Liberty/Empire state building) |
| Niagara Falls | Kennedy Space Centre |
| Yellowstone National Park, Wyoming | Disney World Florida & California |
| The Rockies Mountain Range | The White House |
| Yosemite National Park, California | Las Vegas Strip |
| Everglades National Park, Florida | Golden Gate Bridge |
| Denali National Park, Alaska | Hollywood |

## FIELDWORK IN THE LOCAL AREA – OBSERVE, MEASURE, RECORD AND PRESENT:

| | | | | | |
|---|---|---|---|---|---|
| **Plan a local walk:** Plan a safe and accessible walk to visit various landmarks of Poole | Use OS map to find areas of interest and topographical features of Poole | Use OS map of Poole to plan a route between these features | Create a final route plan and description of the chosen key destinations | Present your route plan to others and explain the reasoning behind your plan | Evaluate the effectiveness of your route and make changes |

## KEY ASSESSMENT QUESTIONS AND SCENARIOS:

| EXS: | GDS: |
|---|---|
| **Physical: Earthquakes**<br>Where in the World are Earthquakes most likely to occur?<br>How and why do earthquakes occur?<br>Create a non-chronological report to teach others about earthquakes and why they might occur.<br>How have buildings been designed to withstand earthquakes in hotspots? | **Physical: Earthquakes**<br>If Ocean's local area was situated on a fault line, what would need to change to make the town earthquake safe?<br>As a seismologist, what would you recommend to Ocean Academy as an 'earthquake plan'? |
| **Human: Tourism in the USA**<br>What are the main attractions for people to visit the USA?<br>Why is tourism so important to the USA?<br>As a holiday planner, plan a trip to the USA for a family who have a specific list of 'must-sees'. | **Human: Tourism in the USA**<br>Why is the USA such a successful tourist attraction?<br>As a tourism officer for the USA, design a web page titled 'Visit USA' to persuade people to visit the USA |