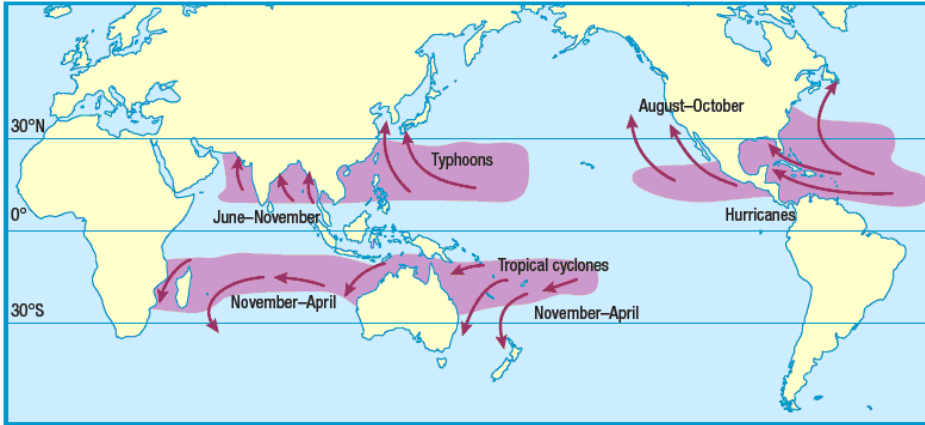


Year 9 Workbook

This booklet can either be printed at home or completed on paper or Microsoft Word. All topics and questions have been studied in class. If you are struggling with any tasks, please use online sources (e.g. BBC Bitesize GCSE Geography).

Weather Hazards and Climate Change



Task: Describe the distribution of tropical storms. Use lines of latitude and key terms in your answer.

Task: Give 3 conditions needed for tropical storms to form:

- _____
- _____
- _____

Task: Formation of a tropical storm- Put the statements in order, the first has been done for you.

When you have finished, check your answers here: <https://www.bbc.co.uk/bitesize/guides/z37wrdm/revision/1>

Rank	Statement
	In the centre is the eye of the hurricane, about 45 km across (30 miles) across. Often there will be no clouds in the eye. Seen from below it will seem calmer, with a circle of blue sky above. The eye is formed because this is the only part of the hurricane where cold air is descending.
	In the northern hemisphere, the prevailing easterly tropical winds tend to steer hurricanes toward land - although their course is unpredictable. As hurricanes move inshore, their power gradually reduces because their energy comes from sucking up moist sea air.
	Seen from above, hurricanes are huge circular bodies of thick cloud around 450 km (300 miles) wide. The cloud brings heavy rain, thunder and lightning.
1	When this warm and wet air rises, it condenses to form towering clouds, heavy rainfall. It also creates a low pressure zone near the surface of the water.
	Air that surrounds the low pressure zone at the centre flows in a spiral at very high speeds - anti-clockwise in the northern hemisphere - at speeds of around 120 km/h (75 mph).
	Rising warm air causes the pressure to decrease at higher altitudes. Warm air is under a higher pressure than cold air, so moves towards the 'space' occupied by the colder, lower pressure, air. So the low pressure 'sucks in' air from the warm surroundings, which then also rises. A continuous upflow of warm and wet air continues to create clouds and rain.
	Air is ejected at the top of the storm – which can be 15km high – and falls to the outside of the storm, out and over the top, away from the eye of the storm. As this happens, it reduces the mass of air over the 'eye of the storm' - causing the wind speed to increase further. Some ejected air also cools and dries, and sinks through the eye of the storm, adding to the low pressure at the centre.
	The faster the winds blow, the lower the air pressure in the centre, and so the cycle continues. The hurricane grows stronger and stronger.

Task: Read the text below and answer the questions:

1. What would happen if too much thermal energy escaped?
2. How do humans use fossil fuels?
3. List as many greenhouse gases as you can remember
4. What is the greenhouse effect?
5. How will the climate on Earth change?

Climate change

Greenhouse effect

Some thermal energy from the Earth's surface escapes into space. If too much thermal energy escaped, the planet would be very cold. However some gases in the atmosphere, called greenhouse gases, trap escaping thermal energy. This causes some of the thermal energy to pass back to the surface. This is called the greenhouse effect, and it keeps our planet warm. Carbon dioxide is an important greenhouse gas.

Increasing carbon dioxide levels

Humans burn fossil fuels to power cars and other machines, to generate electricity, and to keep buildings warm. Waste gases are released during combustion, including carbon dioxide. As the human population increases, more fuel is used, and more carbon dioxide is released.

Global warming

Extra carbon dioxide in the atmosphere increases the greenhouse effect. More thermal energy is trapped by the atmosphere, causing the planet to become warmer than it would be naturally. This increase in the Earth's temperature is called global warming.

The majority of climate scientists agree that there is a link between the increasing levels of carbon dioxide and the increasing temperatures. Global warming is having an effect on the world's climates.

The impact of climate change

The weather includes the wind, sunshine and rain you see from day to day. The climate is the sort of weather seen over years and decades. Climate change and its effects as a result of global warming includes:

- ice melting faster than it can be replaced in the Arctic and Antarctic
- the oceans warming up – their water is expanding and causing sea levels to rise
- changes in where different species of plants and animals can live

Task: Complete the word fill.

Possible effects of climate change on tropical storms.

Climate change does affect everyone. Climate change can cause an increase in sea _____ and an increase in the _____ of the sea.

Frequency: The evidence says that tropical storms may become more intense but not necessarily more _____.

Distribution: Warmer seas mean that the source areas for tropical storms become further _____ and south of the equator. Higher sea levels mean that more _____ lying coastal communities will be affected.

Intensity: _____ seas mean more energy to _____ the intensity of tropical storms.

low	less frequent	west	north
temperature	warmer	frequent	increase
level	darker	size	decrease

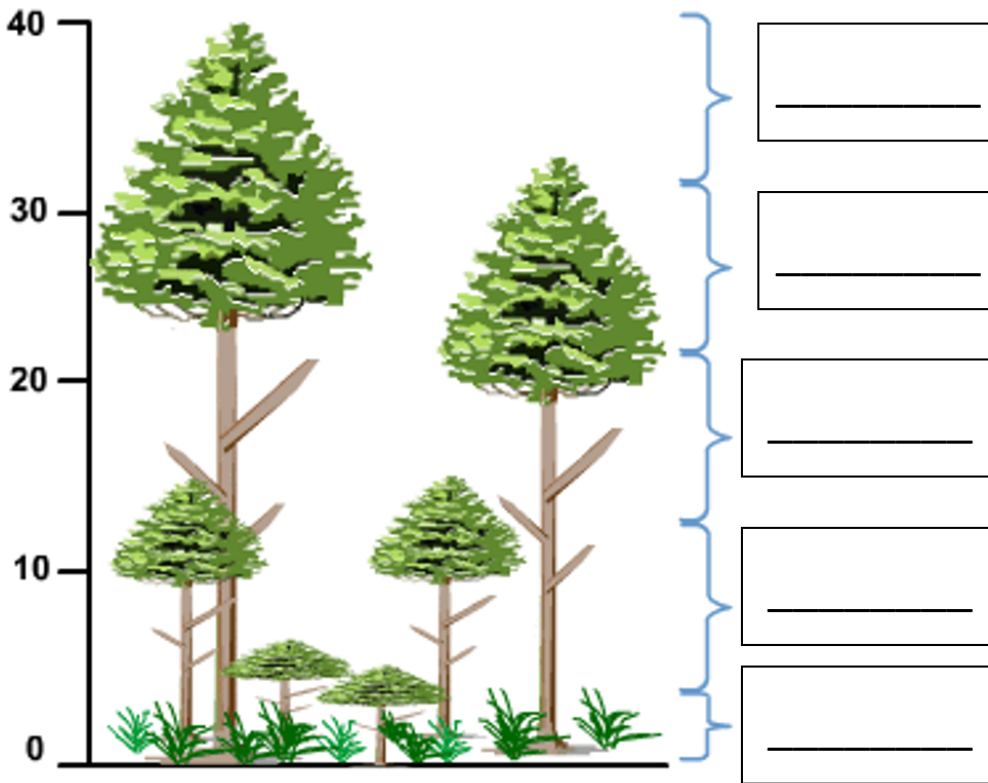
Tropical Rainforests

Task: Create definitions for the key words below.

Keyword	Definition
Ecosystem	
Biome	
Biotic	
Abiotic	

Task: Follow the link below. Read and make notes on the tropical rainforest. Then, complete the test to check you understanding! <https://www.bbc.co.uk/bitesize/guides/zx8n39q/revision/1>

Task: Label the different layers of the rainforest.



Task: Watch the episode on tropical rainforests.

<https://www.bbc.co.uk/programmes/b083wt7z>

Task: Animal and plant adaptations.

Using BBC Bitesize (<https://www.bbc.co.uk/bitesize/guides/zx8n39q/revision/2>) and Google if needed, create **two** fact files of one animal and one plant living in the tropical rainforest.

Additional resources: <https://www.youtube.com/watch?v=zu6p3kdfqwg> or <https://www.youtube.com/watch?v=UlbplCn8-zs>.

Include the following information:

- Animal name
- Habitat
- What does it eat?
- How is it adapted?
- Why do these adaptations aid survival?

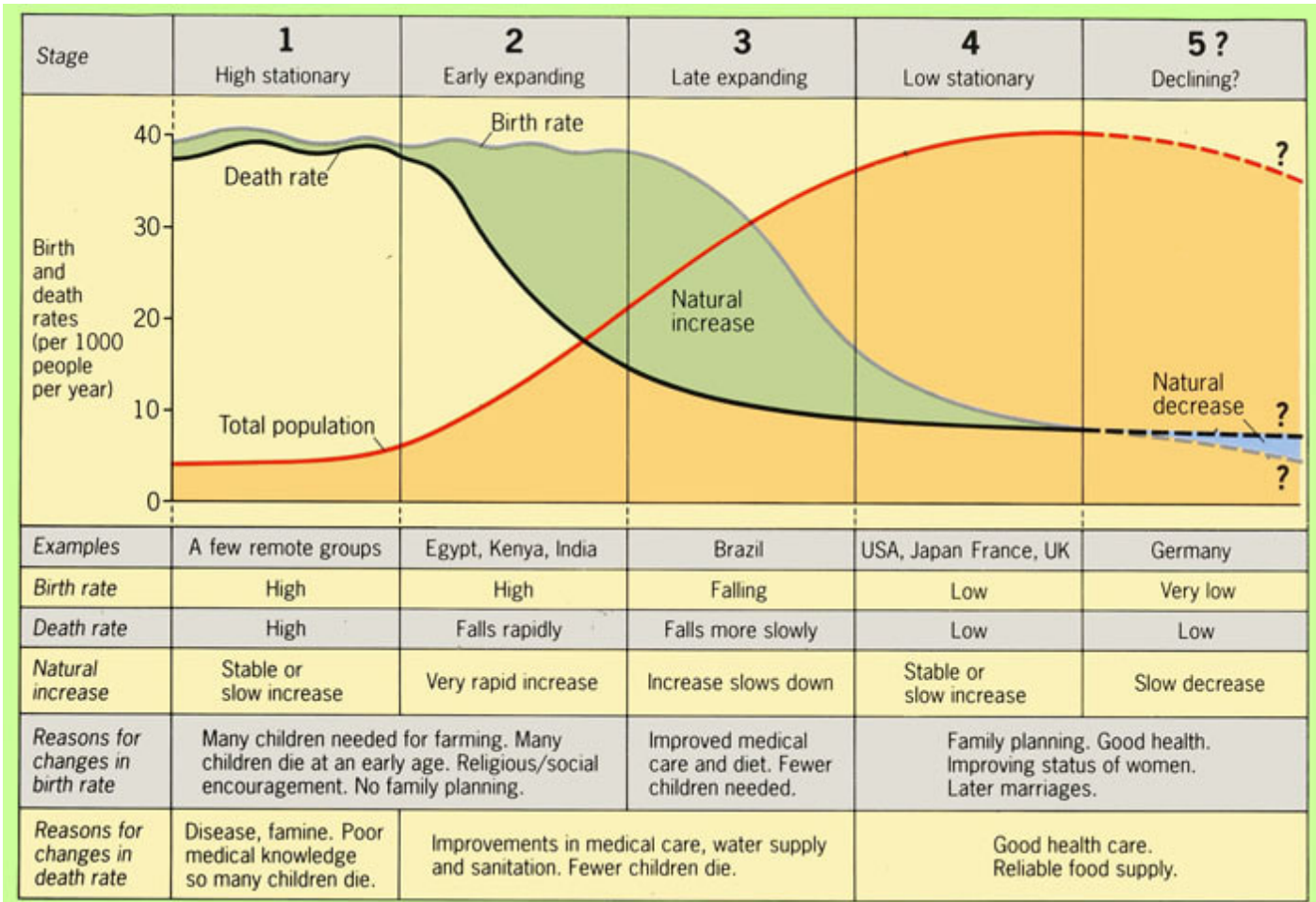
Development

Task: Follow the link below. Read and make notes on factors influencing development. Then, watch the video and complete the test to check your understanding! <https://www.bbc.co.uk/bitesize/guides/z9h6wxs/revision/1>

Task: Match up the key definitions!

Economic development	Measures the access the population has to wealth, jobs, education, nutrition, health, leisure and safety- as well as political and cultural freedom.
Human Development	The amount of wealth or personal comfort that a person or group of people have.
Quality of life	A measure of a country's wealth and how it is generated (for example agriculture is considered less economically advanced than banking).
Standard of living	Measures the wealth or income of a country. It is the total value of goods and services produced by a country in a year.
Gross Domestic Product	The wellbeing of a person or a group of people.

Task: Look at the Demographic Transition Model. Make notes about what each stage shows, giving examples of countries which are in this stage.



Stage 1:

Stage 2:

Stage 3:

Stage 4:

Stage 5:

Task: Test yourself on development using the BBC Bitesize quiz! Make a note of any answers you got wrong. <https://www.bbc.co.uk/bitesize/guides/zs7wrdm/test>