

Yr.10 GCSE Revision guide on Religion and Planet Earth

Section 1

In this section we will look at: Christian beliefs about how life on Earth began; the feeling of awe and wonder we get looking at the natural world and the Christian idea of stewardship.

1) *What does the Bible tell us about the creation of the earth?*

The Christian creation story is found in the book of **Genesis** and tells us that within six days God created the heavens and the earth out of nothing, he separated land from sea and filled the earth with living creatures including the first human beings, Adam and Eve, then on the seventh day God rested.

2) *Doesn't science tell us of a different story: that the universe started with a big bang about thirteen billion years ago?*

Yes – according to modern scientific theories the universe started with a **big bang** approximately thirteen billion years ago. Our sun formed about five billion years ago and our earth formed about four and a half billion years ago. Life on earth has evolved over billions of years through a system called **natural selection**.



3) *So does this mean that Christians believe in a six day creation story where as other people might believe the universe took billions of years to evolve?*

It is true that some Christians do take the Genesis creation story literally and believe that the earth and all life on it were created by God in six days. However, many Christians do believe the scientific account that the universe started from a big bang about thirteen billion years ago and that life on earth has evolved over billions of years.

4) *How is it possible for some Christians to believe that life on earth evolved over billions of years when in the Bible it says that God did it in six days?*

Because these Christians would regard the Genesis creation story as a **myth**. A myth means that the story is not literally true but that it does contain a religious truth.

5) *What is the religious truth which is contained within the Genesis creation story?*

The religious truth behind the Genesis creation story is that God as **creator** of the universe has created a **finely tuned** universe which is not only incredibly beautiful but also has the right conditions for life to evolve. The universe and life in the universe did not simply get here by chance but is an expression of God's creative power and love. If we **contemplate** (think and feel deeply about) a beautiful work of art we can get an insight into the creative mind of the artist and in a similar way by looking at the universe and the beauty of this natural world we have an insight into the creative mind of God. Many people feel a sense of **awe** and **wonder** when contemplating the universe which they see as **God's work of art**.

6) *What is meant by the term awe and wonder?*

Awe is the feeling that some people get when they have such a deep experience they are somehow taken out of themselves and get an insight into a meaning greater than themselves. Synonyms associated with the word awe include: **admiration, astonishment, praiseworthy** and **worship**. **Wonder** is when people marvel and are overcome with the complexity and beauty of the universe. So someone might get a feeling of awe and wonder by looking at a beautiful sunset, seeing film of the Earth from space or holding a new born baby. For Christians this feeling of awe and wonder makes them feel closer to their creator God.

7) *Is it only people who believe in God who have a sense of awe and wonder when contemplating nature?*

No, even people who do not believe in God and have no religious faith can still have a sense of awe and wonder at the beauty of the universe, however, for these people although they sense the beauty of nature they have no sense of a supreme being (God) behind nature. So religious people may feel close to god when contemplating nature where as atheists (people who do not believe in God) will not.

8) *Are there any passages in the Bible that express this feeling of awe and wonder towards God's creation?*

In the Book of Psalms in the Bible this sense of awe and wonder and God's close relationship to human beings is expressed in the following passage: ***Oh Lord, our Lord, how majestic is your name in all the earth! When I consider your heavens, the work of your fingers, the moon and the stars which you have set in place, what is man that you are mindful of him, the son of man that you care for him?***' The person who wrote this passage did not literally believe that God created the universe with his fingers; this is symbolic language which helps express the idea that for many religious people this universe is God's work of art.

Once when Jesus was giving a sermon he said *‘Consider the lilies of the field; how they grow; they neither toil nor spin, yet I tell you, even Solomon in all his glory was not arrayed (dressed) like one of these.’* Here Jesus is expressing the fact that even a small flower like a lily has beauty that can inspire awe and wonder. The lily does not have to work at being beautiful because its beauty arises naturally. King Solomon was a rich King who could dress himself in the most beautiful man made clothes yet even a rich King like Solomon is no match for the natural God given beauty of the small lily.

- 9) *As human beings what responsibility do we have to this created order given by God?* In our last module called Religion and Animal Rights, we explored the Christian idea of stewardship. Let us remind ourselves what stewardship means by once again referring back to the book of **Genesis** in the Bible where it says: *‘So God created human beings making them in his own image. He created them male and female, blessed them, and said: “Have many children, so that your descendents will live all over the earth and bring it under their control. I am putting you in charge of the fish, the birds and all the wild animals The Lord God placed man in the garden of Eden to cultivate it and guard it”* In this Bible passage we are told that God created human beings in his own image; so we are sacred beings who share a **unique spiritual relationship** with God through **worship**. God instructs human beings to bring the Earth ‘under their control’ which means that we have **dominion** (power) over the Earth. But with this power comes **responsibility** – because we are made in the image of God we are God’s **representatives** on earth, we are God’s **stewards** or **caretakers** with a **duty** to look after this world on God’s behalf. It is our duty to bring **justice** (fairness) to the earth. God has instructed human beings to **cultivate** (farm) it and to **guard** it. So we should cultivate and guard our planet like a gardener plants, looks after and brings to fruition a garden.

Many Christians believe that human beings have failed in this duty to be good stewards; we have instead **exploited** the Earth’s resources and been greedy which because the earth is God’s creation, is a sin against God. We will now be exploring various ways that human beings have not guarded the earth and have been poor stewards particularly in regards to the effects of modern lifestyles and pollution.

Section 2

In this section we will be looking at: how modern ways of living have a negative impact on the environment including different types of pollution; how greenhouse gasses may lead to climate change and the debate amongst scientists about how far global warming is the fault of human beings.

- 10) *How do the effects of our modern lifestyles harm planet earth?*

One of the most dangerous threats to the environment is the **greenhouse** effect and **global warming**. Pollution is created by emissions of gases from cars, power stations

and factories that burn fuel like coal, oil and gas. These gases cover the earth like a blanket. They trap the sun's heat, like the glass in a greenhouse. Most people agree that this greenhouse effect causes global warming and climate change.

11) *What are the effects of global warming?*

Sea levels rise as the icecaps of Earth's highest mountains and polar icecap melt which leads to flooding. A one metre rise in sea levels could flood 17% of Bangladesh, where millions of people now live. This could result in rice crops failing, contaminated water and disease. Global warming can result in severe weather leading to **droughts** (long periods of abnormally low rainfall) and floods which in turn causes the destruction of food crops leading to **famine** (starvation owing to drastic, far reaching food shortage). If there is famine people will travel to neighbouring countries in search of food putting pressure on scarce resources and causing **overpopulation**. Although there is no doubt that global warming can have devastating consequences for planet earth some scientists are debating whether global warming is the fault of human beings at all.



12) *What are some of the arguments for and against global climate change, and global warming being the fault of human beings?*

Some scientists who question whether humans are to blame for global warming argue:

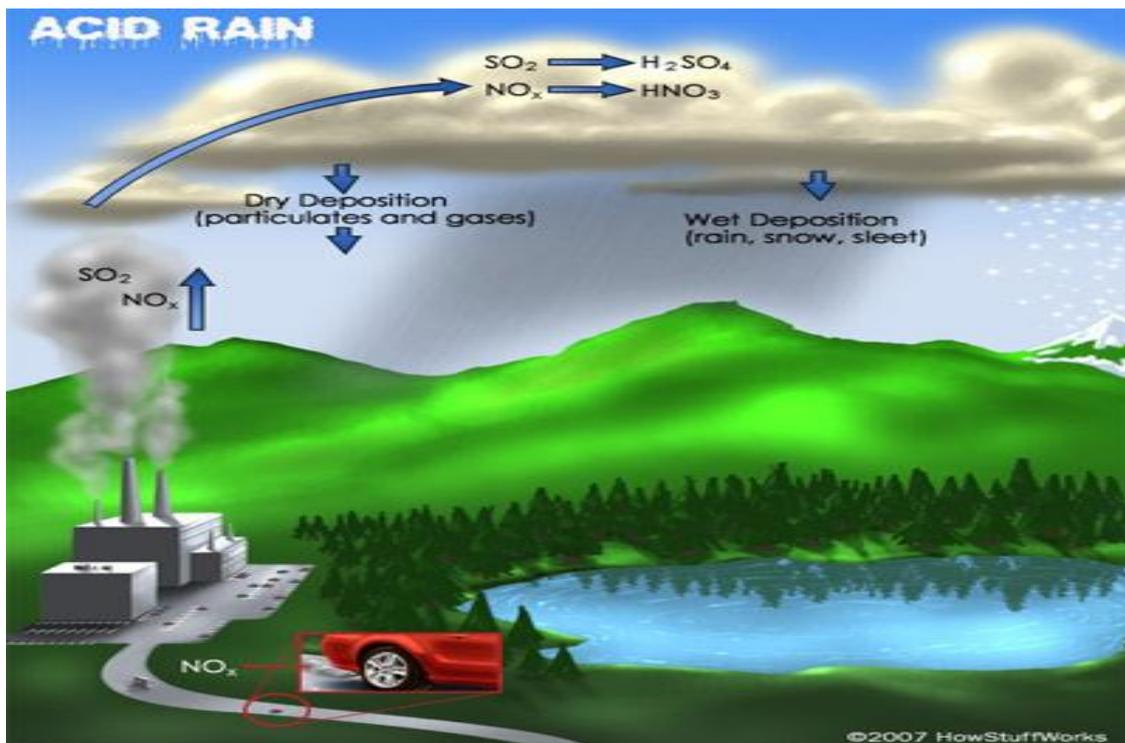
- That the Earth's climate is always changing; it goes in cycles. For example, 10,000 years ago Europe was coming out of an ice age where huge ice glaciers were beginning to melt and the temperature was close to freezing most of the time. This ice age was obviously not the fault of human beings. In a similar way some scientists argue that global warming may be just one of these earthly cycles that has nothing to do with pollution caused by humans.
- Some scientists argue that there is no hard scientific evidence to actually prove that humans are causing global warming; they say it might just be a coincidence that global warming is happening at a time when human beings are producing more pollution.

Other people, however, argue that global warming is definitely the direct result of human beings polluting the environment. They argue that:

- The amount of carbon dioxide (a main contributor to global warming) has increased by 33% since the industrial revolution when human beings started to pollute the atmosphere. This, they argue, is overwhelming proof that global warming is a direct result of human activity.
- We can see more and more evidence of global warming in the world around us. The polar ice caps are definitely beginning to melt causing sea levels to rise; there is evidence of more flooding including flooding in this country last year and more seriously the 2008 flooding in Mississippi USA which killed hundreds of people.

13) What are the main problems caused by pollution?

- **Acid rain** is caused by gas emissions from cars, factories and power stations which combine with water vapour in the air to make acids, which may end up in rain water. Acid rain poisons lakes and rivers (which kills fish), the soil, plants and trees. Acid rain also corrodes buildings, which is particularly serious when historic buildings like castles and cathedrals become damaged.



- **Toxic chemicals** are poisonous chemicals which are produced by the numerous chemical industries which release chemicals into rivers. Environmental groups like **Greenpeace** say that industries do not test the chemicals enough to consider their impact on the environment. Electronic equipment like fridges can contain toxic chemicals called **CFCs** which can attack the **ozone layer** (the protective layer above the Earth's atmosphere which protects us from radiation) and therefore contribute to global warming. Some rich developed countries like

European countries sometimes export their toxic waste to developing countries like India and China, therefore, exporting the environmental damage to others.

- **Oil spills** in the sea occur when industries on land pump oil into the sea or when tankers carrying oil become shipwrecked and so leak oil as happened in 1989 when the tanker **Exxon Valdez** became shipwrecked. Oil spills have devastating effects on wildlife: birds seabirds' feathers become coated in oil and they are unable to fly and hunt for food; the coats of seals and sea otters also lose insulation so they can die of cold, or they eat fish affected by the spill and are poisoned.



- **Pesticides** are poisonous substances which are used to poison weeds and pests (like insects which eat crops). They are mainly used by farmers so they can get the best profit from their produce. The problem is that pesticides not only kill weeds and pests for farmers but they can also seep down into the soil and get into the water table where they can spread out into rivers and kill fish, birds and mammals. From rivers pesticides can also be absorbed into the atmosphere and form **acid rain** causing more problems. There are strict laws on the use of pesticides in this country but some environmental campaigners like **Greenpeace** do not think the laws are strict enough. The worst chemical disaster took place in **Bhopal**, India in 1984. Toxic chemicals leaked out of a factory and killed 20,000 people and leaving 120,000 permanently ill.

14) *How do modern ways of living have a negative impact on the environment?*

The lifestyles that we enjoy and take for granted today often have negative impacts on the environment. Here are some examples:

- **Carbon monoxide** from cars and other road vehicles causes smog particularly in major cities. Smog pollutes air and makes it difficult to breathe. It can also aggravate respiratory (breathing) conditions like asthma which for some people

can be fatal. Not only does road transport produce carbon monoxide but it also produces **carbon dioxide** which is a **greenhouse gas** which contributes to **global warming** and **climate change**. By 2030 there will be an extra six million cars on the road! Car-sharing would help to reduce this sort of pollution.

- Factories as well as releasing pesticides into the air also release other dangerous chemicals like **nitrates** and **sulphuric acid** which can pollute rivers and lead to acid rain. Factories are also responsible for releasing huge levels of carbon dioxide into the atmosphere. If current levels of carbon dioxide continue to be released it is estimated that by the end of this century carbon dioxide levels will double having a disastrous impact on the environment.
- **Landfill sites** are more commonly known as rubbish tips. Our modern lifestyles produce so much rubbish which ends up on landfill sites. This rubbish sometimes has to be burned producing environmental pollution and increasing the likelihood of global warming. **Recycling** would help reduce some of the damage caused by landfill sites.
- **Nuclear power plants** produce cheap electricity with out burning up precious **fossil fuels** like **coal** and **oil**. The problem with nuclear power plants is that they produce **radio active nuclear waste** which is hard to dispose of completely safely. This waste remains radioactive for thousands of years and can pollute soil and drinking water. There have also been accidents in nuclear power stations where huge amounts of radioactive waste have been released into the environment. Radioactive waste can cause cancer in human beings and lead to **genetic diseases** (diseases which can be passed on to future generations).
- **Household waste**. Some people say that we are a '**throwaway**' society. Everything, including food waste, packaging, household appliances, furniture and electronic equipment, goes to the tip and much of it is not **biodegradable** (able to be broken down by bacteria in the environment). However, people are starting to realise that things like glass, cans, plastic, garden waste and paper can be recycled and reused. Recycling saves energy and reduces harmful carbon emissions, for example, making new paper from old paper uses 60% less energy than making new paper from trees. Recycling means less natural resources have to be used like trees, so protecting natural habitats, which is good for wild life. More recycling also means that less rubbish ends up on landfill sites, which again helps cut down on environmental pollution.

Section 3

In this section we will be looking at: the effects of human population growth upon the planet; what natural resources are possible alternatives to using natural resources; what natural habitats are and the impact of destroying natural habitats with particular focus on deforestation.

15) *If human beings are having such a negative impact on the environment of planet earth, won't this situation get worse with increased population?*

It took until the year 1830 for the human population of the earth to reach one billion (one thousand million). The current human population of the planet is nearly seven billion and it is predicted that by 2050 the population of the earth will be well over nine billion – this increase in the number of human beings is called the **population explosion**. The population explosion not only has huge implications for pollution, increase in greenhouse gases and climate change, but it also puts enormous pressure on the earth's **non-renewable natural resources**. These natural resources are called non-renewable because once they are used they can never be replaced.

16) *Give examples of some of the earth's non-renewable natural resources.*

Non-renewable resources are sometimes known as **fossil fuels** because they took tens of millions of years to form naturally within the earth. Examples include oil, coal and gas which are used to produce electricity. The world will soon run out of oil and non-renewable sources of energy and so none will be left for future generations. The amount of these fuels used in industry and by motorists is increasing. Aeroplanes use huge amounts of non-renewable fuels with more people are taking cheap flights abroad. Oil, gas and coal are not the only examples the earth's non-renewable natural resources though, some metals used by industry will also one day run out.

17) *Give examples of some metals that are used in industry.*

Gallium indium is used for liquid crystal displays on computer screens and flat screen televisions; **Hafnium** is used for computer chips; **Zink** is used in cars and computers; **Copper** is used for water pipes and in electrical wires for conducting electricity. Once these precious natural resources have been used up by humans there is no way to replace them.

18) *If these natural resources are so precious and irreplaceable are there alternatives to using them?*

Scientists are working on the use of alternative renewable energies such as **wind**, **wave** and solar **power**. Cars are being developed that use **hydrogen** and other fuels that are renewable. Wind farms have sprung up around the country and off the coast. Scientists are developing techniques to use wave power to produce electricity – this is called **hydroelectricity**. However, many people argue that there are problems in developing wind, wave and solar power.

19) *If wind, wave and solar power help us to save precious non-renewable resources and cuts down on environmental pollution which can lead to global warming, why do some people say there are problems with them?*

Some people argue that wind, wave and solar power might not be cost effective. On days when there is little wind little electricity is produced from wind farms. Similarly on cloudy days and days when the sea is calm little electricity can be produced from solar panels and waves. If we need to produce huge amounts of electricity for big

cities burning fossil fuels is seen by some as more reliable and practical. Some people argue that wind farms are ugly and spoil the countryside and sea views off the coastline.

20) *Apart from wind, wave and solar power are there any other renewable energy sources?*

Yes – **nuclear power**. The UK government supports a new generation of nuclear power stations to provide a secure energy supply and to help tackle climate change. Nuclear power is cleaner than burning fossil fuels but the waste remains **radioactive** (giving off dangerous radiation) for thousands of years. An accident, as happened in Chernobyl, Russia in the 1980s, could kill many people. If terrorists targeted a nuclear power station the radiation released could be devastating. Environmental groups like **Friends of the Earth** and **Greenpeace** argue that the risks of using nuclear power outweigh the benefits and are putting pressure on governments to invest in wind, wave and solar power.



21) *What is meant natural habitats?*

Natural habitats are the places where species of plants and animals live in the wild. Every 20 minutes the world loses at least one species of animal or plant life because human beings are destroying natural habitats due to building houses and roads, the use of pesticides and industrial pollution. One of the most important natural habitats is forest. Human beings are cutting down forests at an alarming rate – this is called **deforestation**.

22) *Why are humans destroying forests at such an alarming rate?*

Deforestation is done to:

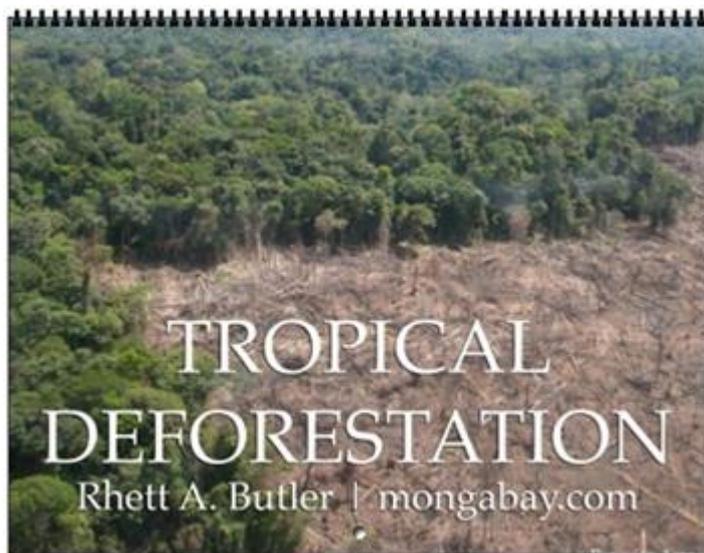
- Clear land for building
- Clear land for farming to feed rising populations
- Raise cattle for beef. If people ate less meat this could lead to less deforestation.
- Cut trees like mahogany and teak for making furniture

- Cut trees like oak and pine for building and firewood.

23) *What harmful effects does deforestation have upon the environment?*

- Destroys the natural habitats of animals and plants (flora and fauna) so they may face extinction.
- Deforestation contributes to climate change. Trees take up carbon dioxide from the atmosphere in order to live and carbon dioxide is thought to be a major cause of global warming. If this is not bad enough when the trees are burned down to create more land, they release large amounts of carbon dioxide into the environment.
- Trees also draw up water from their roots and release it into the atmosphere where it falls back to Earth as rain. When deforestation occurs, as has happened in the Amazon, the climate becomes drier and less fertile.
- With the loss of protective cover from the trees, soil washes away into water courses, lakes and dams. This can cause flooding and landslides.
- Farm land from cleared rain forests usually have poor soils which do not support farming for very long, so farmers move on to clear more and more forest to farm on more and more land.

It is worth noting that if deforestation were to stop then farmers in the developing world would lose their livelihoods. Would it be right to do this? Should rich countries do more to help these farmers thereby saving the environment? If we encourage the use of fair trade products would this help poor people in developing countries become better off and so less likely to destroy forests?



24) *What can be done to prevent deforestation?*

Organisations like **Rainforest Concern** (look at their website www.rainforestconcern.org/education) say that the threat to the environment is so serious from deforestation that laws need to be passed to stop rainforests being destroyed. They also say that we can all help prevent deforestation by:

- Not eating hamburgers – remember many rainforests are destroyed to raise cattle for meat.

- Recycling paper and cardboard to help prevent trees being cut down for paper.
- Be very careful what furniture we buy particularly mahogany and teak products which may have come from rain forests.
- Sponsor your own acre of rainforest. By paying Rainforest Concern £50, people can sponsor and protect rain forests from further devastation.

Section 4

In this section we will look at Christian responses to environmental issues exploring how human beings have been poor stewards to planet Earth and the various ways human beings can become better stewards, by encouraging conservation and sustainable development.

25) *How can we apply the Christian idea of stewardship to issues surrounding planet Earth?*

If we remind ourselves that in the book of Genesis God commanded human beings to bring the Earth under their control which included being in charge of all the animals. From looking at what we have studied so far it seems that human beings have definitely brought the Earth under their control but in an **irresponsible** way. Because so much human activity is damaging planet Earth we have failed in the responsibility that God gave us as **stewards**. We have not only damaged the earth but we have also damaged wildlife through deforestation and pollution therefore not fulfilling our obligation to God to be in charge of all the animals. Christianity is a religion of **compassion**: Jesus commanded us to ‘Love our neighbours as we love our selves’, and yet the damage that we have done to planet Earth could have catastrophic effects on our fellow humans. To harm our fellow humans is a grave sin in the Christian religion because human beings are sacred creatures who have been made in the ‘image of God’. If global warming continues due to the emission of greenhouse gasses it is possible that there could be increased flooding destroying crops and houses; this could result in the potential deaths of millions of people. Many Christians believe that we have put **greed** before our duty to be good stewards, and because we have been poor stewards we have directly **sinned** against God. We have **exploited** the environment rather than **respecting** it and living in **harmony** with it as God wished for us to do. It is worth noting that Christians might have mixed opinions on nuclear power: some might see it as environmentally friendly protecting irreplaceable natural resources, where as other Christians might be worried about the environmental threat of radioactive waste and see nuclear power as another example of bad stewardship.

26) *So how can human beings be good stewards?*

Christians believe that to be good stewards we need to put **conservation** at the heart of our attitude to planet Earth.

27) *What is conservation?*

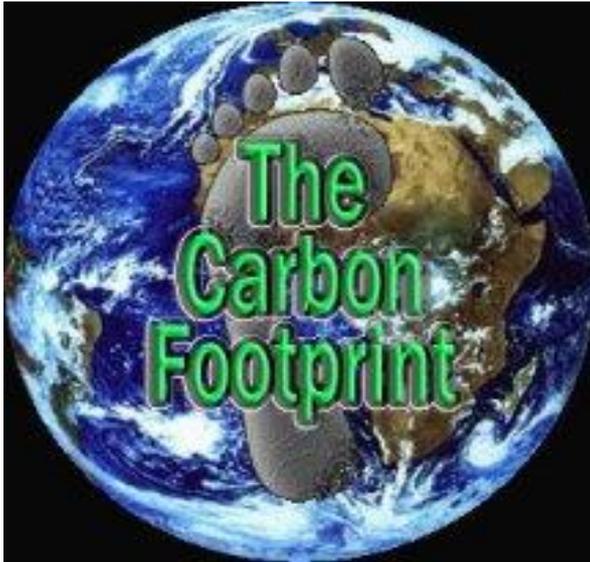
Conservation means looking after the environment and looking after animals. Therefore, many Christians would support conservation groups like **Greenpeace**, **Friends of the Earth** and **Rainforest Concern** who do everything that they can to protect the Earth from environmental damage. Both Greenpeace and friends of the Earth campaign by taking part in protests, putting pressure on governments and educating the general public about dangers to the environment. Many Christians believe that by supporting the aims of conservation groups like Greenpeace and Friends of the Earth they are becoming responsible and effective stewards of the Earth. As well as supporting conservation groups **Earth Summits** are an important way of improving our stewardship of the Earth.

28) *What are Earth Summits?*

An Earth Summit is a meeting of representatives of different countries, including religious leaders. They discuss the threat to the Earth and agree on **international action**. So far Earth Summits have discussed alternatives to using fossil fuels in order to help future generations; they have also discussed how to reduce deforestation and how to improve standards of drinking water in poor countries. Over two million children die every year from drinking dirty water. The last Earth Summit was in Johannesburg in 2002 which was attended by 185 countries. One of the most important things that Earth Summits have achieved in recent years is getting countries to agree significantly reduce **carbon emissions** by the year 2050. So Christians believe that by supporting Earth Summits we are going some way to being effective stewards of the Earth.

29) *Why is it so important for countries to reduce carbon emissions?*

Carbon emissions from industry, cars and the destruction of household waste, harms the environment and is believed to make a significant impact on global warming. You may have heard of advice from the government asking us to reduce our own **carbon footprint** which means that we should all become responsible citizens by reducing our own carbon emissions. We can do this by using cars less, recycling, and making sure that lights are switched off when not being used. The British government has promised to reduce carbon emissions by 60% (from 1990 levels) by the year 2050. Cutting carbon emissions by levels that allow us to live today while protecting the environment for future generations, is called **sustainable development**. Christians would agree that by reducing carbon emissions and promoting sustainable development is once again demonstrating that we are becoming better stewards of the Earth.



30) *What are some Christians actually doing through their own Christian organisations to promote sustainable development?*

Some Christian charities who work with the poor are becoming increasingly active in promoting sustainable development. The Catholic Agency for Overseas Development (CAFOD) has a 'Live Simply' campaign. This means that they are trying to persuade both rich and poor nations to live in a way that reduces damage to the environment, for example, encouraging all citizens of the Earth to reduce their carbon footprint.

Christian Aid, which is another Christian charity which helps the poor, is encouraging people to buy fair trade products; by promoting fair trade we are actually helping the environment because people in developing countries will have a higher standard of living and will be less inclined to destroy their natural habitats in order to make ends meet, for example, as with the destruction of rain forests. Both CAFOD and Christian Aid are trying to persuade rich countries to use less of the Earth's natural resources and set a good example to developing countries. Another Christian organisation which is doing important environmental work is the **European Christian Environmental Network** which brings Christians together from different denominations in order to promote environmental issues. Many Christians realise that telling people, particularly in developing countries, not to destroy natural habitats for profit is a complex moral issue.

31) *Why is telling people not to destroy natural habitats a complex moral issue – surely saving natural habitats makes us good stewards of the Earth?*

In developing countries deforestation is the only way some poor people can make a profit and live. If we forced them to stop cutting down trees they would have no livelihood and no means of supporting their families which would cause human suffering. Therefore, many Christians say we should be doing more to help these people in developing alternative ways of making a living which does not damage the environment. Promoting fair trade is a method of increasing the wealth and power of

people in developing countries which could have a positive impact on the environment.

32) *What have Church leaders said about environmental issues?*

The **Archbishop of Canterbury** who is head of the **Anglican Church** has frequently spoken out on environmental issues. In 2009 in a sermon in Denmark he said that the current environmental crisis was largely down to human beings being guilty of '*greedy, addictive and loveless behaviour*'. We need to respect God's creation and become more selfless in our attitude to resources. He said that we have a responsibility to poorer developing countries to ensure that they are not so poor they destroy the environment in order to make a living. After the service the bells at the church rang 350 times which is the safe level of carbon dioxide in the air – 350 parts in a million.

Pope John Paul said that '*The Earth and all life on it is a gift from God given to us to share and develop, not to dominate and exploit We must consider the welfare of future generations in using the Earth's natural resources*'. So the Pope was encouraging people to be good stewards of the Earth and focus on sustainable development to preserve the Earth for future generations.