Subject	Geog	**Year Group**	8	**Sequence No.**	5	**Topic**	Climate change

Retrieval	Core Knowledge	Student Thinking
What do teachers need **retrieve** from students before they start teaching **new content**?	What **specific ambitious knowledge** do teachers need teach students in this sequence of learning?	What real life examples can be applied to this sequence of learning to **development of our students thinking, encouraging them to see the inequalities around them** and 'do something about them!'
L1 Link to Y7 T1 the geography timeline L2 link back to Y7 T1 as students look at both human and physical causes of climate change When learning about effects of climate change links back to the Y7 T5 about flooding Link back to Y7 T3 to globalization when discussing how countries will need to work together to deal with climate change When discussing the ways to deal with climate change link back to previous lessons in the topic as they will need to know causes and impacts to decide on solutions	• The Quaternary It is the last geological time period of those that make up the Cenozoic Era. It began about 2.5 million years ago and continues to the present. • 2010-2019 was the hottest decade ever recorded • These 10 years were punctuated by a series of deadly, dramatic, devastating events. Hurricanes like Sandy, Maria, and Harvey • Difference between climate change and global warming. Climate change can involve the cooling and warming of the climate whereas global warming is when the temperature increases • Ice ages are examples of climate change too • Currently we are going through the warming of the climate **<u>Causes of climate change</u>** • Deforestation (chopping down trees) Human • Cars and other transport letting of gases Human • Burning fossil fuels in power plants Human • Factories letting out gases Human • Volcanoes erupting that let off gases Physical • Earth's orbit around the sun Physical • Sun spots giving off more energy Physical **<u>Greenhouse effect</u>** • The Earth is wrapped in a blanket of air called the 'atmosphere', which is made up of several layers of gases. • The sun is much hotter than the Earth and it gives off rays of heat (radiation) that travel through the atmosphere and reach the Earth. • The rays of the sun warm the Earth, and heat from the Earth then travels back into the atmosphere.	With the knowledge gained from this topic students will develop their understanding of a current global issue as well as come up with ways to solve the issue. They will do this through the following activities: • Students think about whether we should care about climate change • Students do a speech to advise the English government to suggest what they should do to deal with climate change • Students discuss who is responsible for causes climate change • Students debate about whether direct action is the most effective way to help deal with climate change • Students present on what they can do in their own lives to help deal with climate change

	• The gases in the atmosphere stop some of the heat from escaping into space. • These gases are called greenhouse gases and the natural process between the sun, the atmosphere and the Earth is called the 'Greenhouse Effect', because it works the same way as a greenhouse. The windows of a greenhouse play the same role as the gases in the atmosphere, keeping some of the heat inside the greenhouse. • Humans adding GHGs is known as the enhanced greenhouse effect **Greenhouse gases** • Water vapour occurs naturally in the atmosphere. • Carbon dioxide produced naturally when people and animals breathe. Plants and trees absorb carbon dioxide to live. Volcanoes also produce this gas. Carbon dioxide is not the same as carbon monoxide (See Air Quality) • Methane comes from cattle as they digest their food. The gas also comes from fields where rice is grown in paddy fields. • Nitrous oxide when plants die and rot, nitrous oxide is produced. • Ozone occurs naturally in the atmosphere. **Effects of climate change** • Arctic ice will melt which will mean more water in the oceans which could lead to flooding in coastal places. Social, economic and environment • Artic ice melts and animals that live in that habitat will lose their homes-environment • Temperatures could rise leading to more droughts, this could mean that farmers can't grow as many crops-Social, economic and environment • As the temperature warms foreign diseases such as malaria could develop in new places-social • Climate change might lead to more extreme weather-social, economic and environment **Dealing with climate change** • Climate change could have a big impact on the earth especially in the future. It is important to think of ways to deal with it. For example: • If sea levels rise we could protect coastal cities with sea defenses	

	• To reduce the burning of fossil fuels we could try and use alternative energy such as wind turbines • To reduce the amount of gases factories let off we could introduce fines **Extinction Rebellion (abbreviated as XR)** • A global environmental movement with the stated aim of using nonviolent civil disobedience to compel government action to avoid tipping points in the climate system, biodiversity loss, and the risk of social and ecological collapse. • Extinction Rebellion was established in the United Kingdom May 2018 **Problem solving issues** • Some of the countries that are most likely to be impacted worse by climate change have contributed the least to it • Developing nations such as China and India feel as though the Western countries had their period of industrialization which contributed to climate change are now preventing them from making money • NEEs would like HICs to financially support them to help deal with climate change • HICs don't think they should be the only countries making all the changes • Some countries like Russia are reluctant to accept the impacts of climate change	