## How will the Humber go carbon neutral? Year 6 Summer 2 Knowledge Organiser

National Curriculum objectives: Pupils should be taught:

- To locate the world's countries, using maps to focus on Europe (incl. Russia) and N. and S. America, concentrating on their environmental regions, key physical and human characteristics
- To describe and understand key aspects of physical geography, including: climate zones, mountains, volcanoes,
- To describe key aspects of human geograhy, including types of settlement and land use, economic activity incl. trade links natural resources exported and economic activity including recent financial economic difficulties.
- Use geographical skills and field work.

#### Knowledge:

Climate change is considered one of the most pressing global issues facing society and requires urgent action to mitigate its impacts and prevent further damage to the planet. The Humber region, which is home to a number of industries including chemical, energy, and steel, has set an ambitious target to become carbon neutral by 2040. Children identify how the land use around the river Humber is going to change (climate sinks and energy production) in response to physical changes around the world including weather, climate, and Global Warming.

The change of land use will focus on the production of energy and include trade links and the distribution and use of resources including natural gases, Hydrogen, Carbon Dioxide, and other minerals. In greater focus, children will explore the impact of change and identify similarities and differences on a county level including why the Humber is currently the greatest contributor of Carbon Emissions in Britain and how it could soon be the leader of Hydrogen Power Generation and Carbon Capture.

Lesson objectives will identify:

•The difference between weather and climate: day-to-day weather vs. long-term average weather patterns in a particular region or area.

- •The 'crisis': Climate change is one of the biggest crises facing the planet today. Investigating world wide consequences and impacts of climate change predicted. •What causes global heating (also known as global warming): Investigating the increases in carbon dioxide, methane and nitrous oxide in the earth's atmosphere. •What causes greenhouse gases: Human activities including burning fossil fuels for transportation and energy, deforestation and agriculture.
- •What a carbon sink is: Natural and artificial sinks and their effectiveness at storing carbon.
- •What fossil fuels are: how we use them and what the impact is on the environment
- •The effects of climate change right now. Changes to our local area, regiona and continent already being experienced.
- •Ways we can move forward clean energy. Local geography and what is available to us.
- •How Equinor (a Norwegian Company) and the H2H Chemical Plant (Saltend, Preston) can help to make energy in the Humber clean.

Geographical concepts we will investigate Location, Place, Region, Spatial Interaction

#### Key vocabulary

Carbon capture and storage (CCS) is a process that captures carbon dioxide emissions from industrial processes, particularly power plants and stores them in underground geological formations and other locations.

Carbon sink: a natural or artificial reservoir that absorbs carbon stores carbon from the atmosphere.

average temperatures that result from human activities. Greenhouse effect A natural process in which certain gases in the Earth's

atmosphere trap and absorb heat from the sun. This process helps to regulate the Earth's temperature and is essential in supporting life on our planet.

Emissions: refer to the release of gases and particles into the atmosphere, usually as a result of human activities such as burning fossil fuels, industrial processes and transportation.

What should I already know?

Locations of oceans, continents

the wider world.

Some physical characteristics and key features in

Some key aspects of physical geography in the

wider world e.g. mountains, oceans, continents

Awareness of types of weather and seasons

Greenhouse Gases: Gases that trap heat in the Earth's atmosphere leading to the greenhouse effect.

Pollution: refers to the introduction of harmful substances or contaminants into the Climate change: A long-term and gradual shift in the Earth's weather patterns and environment, which can have a negative effect on the ecosystem, human health and the economy.

Renewable energy: Energey generated from natural sources that are replenished constantly such as sunlight (Solar energy), wind (Wind Power), water (Tidal and Hydrogen power and Hydroelectricity)

### Geographical skills and enquiry:

- · Ask and respond to geographical guestions and offer own ideas
- Use letter/number co-ordinates to locate features or places on a map.
- Use maps with different scales to begin to match boundaries..
- · Know why a key is needed and use symbols on a map/key.
- How does trade connect different countries and their populations?
- Begin to collect and record evidence.
- Make comparisons between locations using photos/aerial images





NHAT A ZERO CARBON CLUSTER

# The Humber: A 2030 Vision for Industrial Decarbonisation

