Year 9 Climate Change – Progress Tracker

Look carefully at the statements below. Tick each level as it is reached, as we cover each part of the unit

Name:

Curriculum Levels

Level 3		Level 4		Level 5	
I can participate in a "Cartoon Concepts" activity to share my prior knowledge about climate change	☐	I can contribute to a class discussion, which might help to identify my misconceptions about Climate Change	☐		
I can use a Venn diagram, to identify some differences between weather and climate, and some similarities.	☐	I can use the information on the Venn diagram to construct paragraphs, comparing and contrasting weather and climate	☐		
I can use a concept map to link several main ideas about climate and weather	☐	I can connect most of the terms about weather and climate together on a concept map.	☐		
I can collect weather data, and record it using a diary	☐	I can graph weather and climate data, and make a simple statement about the differences.	☐	I can compare my weather data to local climate averages, and make a conclusion about the differences between weather and climate	☐
I can identify, and label components in a climate system model	☐	I can identify some examples of interactions between components in the climate system.	☐	I can describe how human activity can influence some interactions between climate components (extension)	☐
I can locate carbon on the periodic table, and write the chemical symbol for it.	☐	I can use molymods to construct models of CO_2 and CH_4,	☐	I can write the formula and name of simple carbon compounds	☐
I can identify different forms of carbon, and where they might be found on Earth.	☐	I can link the forms of carbon to the processes that formed them	☐		
I can define "carbon sources', 'carbon sinks' and 'carbon stores"	☐	I can label each carbon (store) reserviour on a carbon cycle model, and identify it as a source or sink	☐	I can identify carbon sources that are increased, or created, by human activity.	☐
				I can compare the rate of transfer of carbon between reserviours in the pre-industrial revolution period, and present day	☐
I can use 'Slinkys' to model energy traveling in waves.	☐	I can explain that short wavelengths (Light) contain more energy than long wavelengths (Heat)	☐	I can define the following terms: energy transformation, absorption, emitting, short wave radiation, long wave radiation	☐
		I can identify the sources, and forms of energy, that move around the Earth.	☐	I can explain how radiant energy moves around the Earth in its different forms	☐
I can observe a demonstration, and understand that energy in = energy out, when balanced on Earth.	☐	I can use data to create an input/output model of energy budget for the Earth.	☐	I can link the excess of energy, in the energy budget, to an increasing temperature on Earth	☐
		I can investigate how the colour of the ground surface can affect the amount of energy absorbed (Albedo Effect)	☐	I can conclude that the albedo effect causes a change in the radiation balance of the Earth.	☐
I can describe the Greenhouse Effect as a natural process, that is necessary to allow life on Earth	☐	I can describe how the Greenhouse Effect contributes to a 'warmer' Earth.	☐	I can compare Earth's temperature to other planets in our Solar System, that do not have an atmosphere	☐
I can identify carbon dioxide, methane, and water vapour as three of the major greenhouse gases.	☐	I can link carbon dioxide remaining much longer in the atmosphere than other greenhouse gases, to having a 'greater effect' as a greenhouse gas.	☐	I can model the structure of the atmospheric gases, and link CO_2, CH_4, and H_2O to their ability to absorb more longwave (heat) radiation, compared to other gases in the atmosphere that are not greenhouse gases	☐

				I can describe greenhouse gases as 'radiative forcing agents', and when they increase, so does the amount of energy held in Earth's system.	☐
I can investigate whether carbon dioxide speeds up the transfer of thermal energy	☐	I can write a clear conclusion, based on my investigation.	☐	I can identify independent, dependant and control variables in my investigation, and explain how I can make my investigation more reliable.	☐
I can explore how carbon dioxide concentration data can be collected, in both prehistoric times, and recent times.	☐	I can graph atmospheric carbon dioxide concentration data.	☐	I can link the rapid increase of CO_2 concentrations in recent times to human activity, and understand how we are able to distinguish between natural and human-made emissions	☐
I can answer questions, using information from data and graphs.	☐	I can use collected evidence to interpret data and graphs, and current models.	☐	I can use collected evidence (data and graphs), and current models, to make evidence supported claims about the impacts of climate change	☐
I can investigate what effects sea and land ice have on sea level, when melted.	☐	I can write a clear conclusion, based on my investigation.	☐	I can identify independent, dependant and control variables in my investigation, and explain how I can make my investigation more reliable.	☐
I can identify some species that will be impacted by climate change (Global and New Zealand)	☐	I can explain what impacts climate change, such as drought, and temperature increase might have on some species and communities	☐	I can consider what adaption strategies could be used to assist species impacted by climate change	☐
I can watch some case studies of climate change mitigation, and describe how they help reduce, carbon dioxide emissions,	☐	I can define mitigation as reducing or preventing carbon dioxide emissions, and understand its importance in reducing the effects of climate change	☐	I can understand that governments, businesses and community groups have developed policies to reduce (or off-set) their carbon dioxide emissions.	☐
		I can visit a local group that is involved in climate change mitigation	☐		
I can participate in a group game to identify which of my own actions can reduce greenhouse gases (mitigation), and which increase greenhouse gases.	☐	I can calculate my own personal carbon footprint.	☐	I can consider ways to reduce my own carbon footprint, and action them	☐
I can select a suggested mitigation project.	☐	I can adapt a suggested mitigation project	☐	I can plan my own mitigation project, with support	☐
I can action parts of my mitigation project, either individually, or in small groups	☐	I can action, and complete my mitigation project, either individually, or in small groups	☐	I can action my mitigation project, either individually, or in small groups, and explain how my actions have resulted in climate change mitigation.	☐
I can participate in a presentation of my project at a parents evening at school	☐	I can clearly present my project at a parents evening at school, and explain how my actions were linked to climate change mitigation	☐	I can clearly present of my project at a parents evening at school, showing that I have gathered relevant scientific information in order to draw evidence-based conclusions and to take action where appropriate.	☐
I can complete an end of unit survey.	☐	I can complete an end of unit survey, and reflect on my learning, and engagement.	☐	I can complete an end of unit survey, that reflects on my learning, and engagement, and also consider what next steps I might wish to take.	☐