Decoding Carbon – Rubric

5 – Excellent	4 - Good	3 - Basic	2 – Not Yet	1 - Limited
Initiating & Planning				
Students ask questions about observed relationships, and plan investigations of questions, ideas, problems and issues				
e.g. defining a problem; stating a hypothesis; identifying variables; defining required materials and tools				
Prediction is clear and insightful, referencing a significant amount of evidence and background information from the activity as well as concepts previously learnt in class.	Prediction is clear and is based on some of evidence and background information from the activity as well as concepts previously learnt in class	Prediction is clear and is based on background information from t activity	Prediction is not based on evidence or background information	Prediction is vague or does not relate to the issue and is not based on evidence or background information
Evidence is collected using a variety of appropriate and reliable instruments. The most effective decision making processes are selected to allow for perceptive problem solving.	Evidence is collected using multiple of appropriate instruments. A clear decision making processes is selected to allow for well-reasoned problem solving.	Evidence is collected using an appropriate instrument. A decision making processes is selected to allow for concrete problem solving.	Evidence is collected using inappropriate instruments. Incomplete decision making processes are selected for problem solving.	Evidence is collected using undefined instruments. Decision making processes are selected that do not address the problem.
Performing & Recording				
Students conduct investigations into relationships between variables, and use a tools and techniques to gather and record data and information				
e.g. researching; compiling and organizing data				
Research tools and instruments are used to effectively and accurately collect information and data	Research tools and instruments are used to clearly and accurately collect information and data	Research tools and instruments are used to accurately collect information and data	Research tools and instruments are used to collect limited or vague information and data	Research tools and instruments are used to collect incorrect or inappropriate information and data
Data is compiled and organized using effective formats and data treatments to facilitate perceptive interpretation of the data	Data is compiled and organized using appropriate formats and data treatments to facilitate well-reasoned interpretation of the data	Data is compiled and organized using adequate formats and data treatments to facilitate concrete interpretation of the data	Data is compiled and organized using appropriate formats and data treatments to facilitate interpretation of the data	Data is compiled and organized using appropriate formats and data treatments to facilitate interpretation of the data
Insightful information is selected and integrated from various sources or from several parts of the same source.	Appropriate information is selected and integrated from various sources or from several parts of the same source.	Information is selected and integrated from one sources or from a couple parts of the same source.	Inadequate or incomplete information is selected and integrated from a source.	Inappropriate information is selected. Sources are not listed.
Analyzing & Interpreting				
Students ask questions about observed relationships, and plan investigations of questions, ideas, problems and issues				
e.g. use of nomenclature; comparisons; graphing; analysis; sources of error; analyzing data; drawing conclusions; prototyping; iterations				

Evidence and information is compiled and displayed effectively and in a variety of formats	Evidence and information is compiled and displayed clearly and in a variety of formats	Evidence and information is adequately and correctly compiled and displayed	Evidence and information is incompletely displayed	Evidence and information is incorrectly displayed
Patterns and trends in data are thoughtfully interpreted and relationships among variables are perceptively inferred and calculated when appropriate.	Patterns and trends in data are interpreted with reason and relationships among variables are inferred and calculated when appropriate.	Patterns and trends in data are well as relationships among variables are identified. Calculation may be missing or incorrect.	Limited patterns and trends in data a well as relationships among variables are identified and may be incorrect. Calculation are missing or incorrect.	Patterns, trends and relationships are incorrectly identified. Calculation are missing or incorrect.
Strengths and weaknesses from a variety of excellent potential solutions are insightfully compared and a single solution is selected.	Strengths and weaknesses from a variety of well-reasoned potential solutions are compared and a single solution is selected.	Strengths and weaknesses from a couple acceptable potential solutions are compared and a single solution is selected.	Strengths and weaknesses from a single solution are identified.	A single solution is selected.
Communication				
Students ask questions about observed relationships, and plan investigations of questions, ideas, problems and issues				
e.g. analogies, explanations; synthesizing information; multiple perspectives; significant digits; modes of communication				
Information is masterfully synthesized from multiple sources or from complex and lengthy texts to form insightful inferences.	Information is clearly synthesized from multiple sources or from complex and lengthy texts to form well developed inferences.	Information is adequately synthesized from sources to form basic inferences.	Information is incompletely synthesized from a single sources to form limited inferences.	Information is incorrectly synthesized to form inaccurate inferences.
Evidence or finding are effectively used to develop, present and defend a perceptive position or course of action.	Evidence or finding are used to clearly develop, present and defend a well-reasoned position or course of action.	Evidence or finding are used concretely to develop, present and defend a basic position or course of action.	Evidence or finding are used to incompletely develop, present and defend a vague position or course of action.	Evidence or finding are not used when developing, presenting and/or defending a position or course of action.
Climate Concepts				
Investigate and interpret the role of environmental factors on global energy transfer and climate change				
A variety of human actions and their impact on biomes and climate change have been insightfully described.	A variety of human actions and their impact on biomes and climate change have been clearly described.	A few human actions and their impact on biomes and climate change have been sufficiently described.	A limited number of human actions and their impact on biomes and climate change have been incompletely described.	Human actions and their impact on biomes and climate change have been inaccurately described.
Climate and climate change is effectively and astutely described and evaluated through a masterful understanding of scientific concepts and international programs	Climate and climate change is clearly described and evaluated through a well-developed understanding of scientific concepts and international programs	Climate and climate change is concretely described and evaluated through a developing understanding of scientific concepts and international programs	Climate and climate change is vaguely described through an incomplete understanding of scientific concepts and international programs	Climate and climate change is incorrectly described and evaluated through an inaccurate understanding of scientific concepts and international programs

Measuring, modelling and interpreting climate and climate change technology has been excellently described.	Measuring, modelling and interpreting climate and climate change technology has been well described.	Measuring, modelling and interpreting climate and climate change technology has been adequately described.	Measuring, modelling and interpreting climate and climate change technology has been incompletely described.	Measuring, modelling and interpreting climate and climate change technology has been inaccurately described.
An abundant list of risks and benefits of human activity, and their impacts on the biosphere and the climate, have been insightfully assessed from a large variety of perspectives.	A significant list of risks and benefits of human activity, and their impacts on the biosphere and the climate, have been assessed with reason from a large variety of perspectives.	A few risks and benefits of human activity, and their impacts on the biosphere and the climate, have been concretely assessed from a few perspectives.	Risks and benefits of human activity, and their impacts on the biosphere and the climate, have been unclearly assessed from a limited number of perspectives.	Risks and benefits of human activity, have been incorrectly linked to their impacts on the biosphere and the climate and may be from a single perspectives.