# Inquiry lesson plan 2

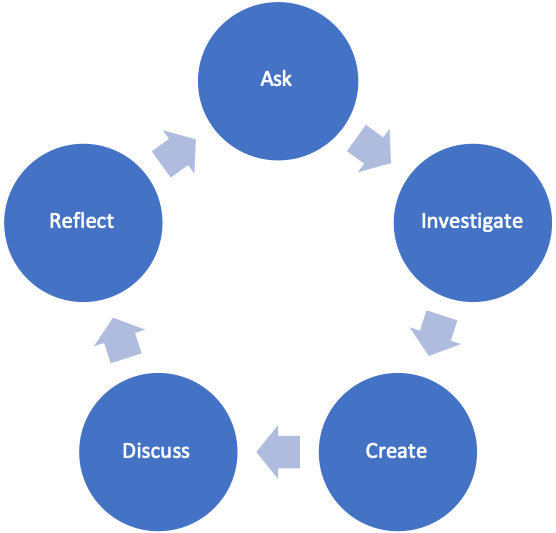
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| **Lesson Title:** | What are the impacts of global warming? | **Lesson** | 2 | **Date:** | 3 April, 2021 |
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Inquiry Project Rationale & Overview

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| **Why does this topic matter to students?**  Students must know about global warming, its consequences, impact and how it occurs. This is because, due to increased greenhouse gas emission, global temperature is rising at an alarming rate. This in turn will affect humankind and the entire biodiversity in the following years. Therefore, knowing the case, and its consensus can help students to be aware of the major cause of climate change.  **How does this project incorporate the inquiry cycle?**  By using the 5 phases of inquiry lifecycle, the project will be incorporated and accompanied in 5 days of workshop. |

Key Questions For Inquiry About the Topic of Study

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| Core Question | Supporting Questions |
| * What are the impacts of global warming? | * Are climate change and global warming the same thing? * How can global warming be prevented? * What factors are responsible for global warming? * How is global warming affecting climate? * How is global warming impacting humans and the entire biodiversity? |



**Inquiry Approach/Style and Rationale**

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| The inquiry-based learning approach will be used for teaching the 7th grade students British curriculum. This particular inquiry approach will be taken because the inquiry-based learning approach emphasizes upon the role of students in the learning process. Instead of telling students what they need to know and do, they will be encouraged to explore the study material, ask questions, and share ideas on the topic of global warming. An inquiry approach is likely to begin with an environmental problem. Inquiry approach can be referred to as a teaching strategy which centers learning, and encourages students to investigate the problem and find information on the topic of study (Putrayasa, 2018). |

Core Principles of Effective Teaching (Sharon Friesen)

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| **Core Principle 1:** Effective teaching practice begins with the thoughtful and intentional design of learning that engages students intellectually and academically.  *\*\*How is the inquiry focused on building disciplinary knowledge and understandings?* | The considered inquiry approach would help the educator to develop an in-depth understanding of the topic and its related aspects. Rather than encouraging students to simply memorize facts and information, they will be encouraged to make their own connections about what they are learning, which is about the impacts of global warming. According to the inquiry-based learning approach, students are required to be engaged in evidence-based meaning-making, development of explanations, and representation of knowledge (Tal, Levin & Levy, 2019). This in turn can help in the development and building of disciplinary knowledge and understanding of the topic by the students. |
| **Core Principle 2:** The work that students are asked to undertake is worthy of their time and attention, is personally relevant, and deeply connected to the world in which they live.  *\*What makes this inquiry valuable, meaningful, and “alive” for the students and teachers?* | The explorative nature of the inquiry makes it highly valuable, alive and meaningful to both students as well as the teacher. in this context, it can be asserted that the inquiry allows and encourages students to enhance their learning process by exploring the study topic all by themselves. This inquiry will allow the students to engage with the study materials in their own way and gain deeper understanding by exploring the topic, asking questions, and making their own connections. This in turn can help in keeping the inquiry alive and meaningful. One of the keys aims of science education is to enable each and every student to develop an in- depth understanding about the world around them and make use of their understanding of science for contributing to public debate followed by making informed and balanced decisions regarding scientific issues that impact their lives (Pekel, 2019). |
| **Core Principle 3:** Assessment practices are clearly focused on improving student learning and guiding teaching decisions and actions.  *\*How do I define learning and success in this inquiry? How is learning expressed and articulated in peer, self and teacher assessments?* | By taking tests of the students on the lessons learnt through the inquiry, its success can be defined. The progress of students throughout the inquiry has to be kept and students are to be encouraged and motivated to develop the most effective lessons through this inquiry.  Through effective questioning, the learning can be expressed and articulated in peer, self and teacher assessments. |
| **Core Principle 4:** Teachers foster a variety of interdependent relationships in classrooms that promote learning and create a strong culture around learning.  *\*How do I connect students with each other, with experts in the field, with larger communities and nature, and across disciplines?* | In order to foster connectedness of the students with each other, experts and the broader community, it is important to make the students feel connected to each other and allow them to open up their minds, encourage their details and boost their emotional vocabulary. Themes, stories, and topics which students can connect with and help in affirming one’s identity tends to have transformative power (Zielske, 2020). |
| **Core Principle 5:** Teachers improve their practice in the company of peers.  *\*How do I reflect on the inquiry together, and/or collaborate with others?* | In order to collaborate with others, it is required to conduct interactive sessions, discussion and team works through the inquiry. |

BC Curriculum Core Competencies

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| Communication | Thinking | Personal & Social |
| The educator needs to communicate with each of the students individually to achieve the desired outcomes of the project  Q&A session and group discussions are to be encouraged for effective communication. | * Students engage in ongoing reflection as they develop their creative ideas. * Students use creative thinking to generate new ideas to solve problems and constraints that arise as they design and develop. | The educator must have observation skills, question skills, emotional intelligence, about to appraise ideas of students and encourage and motivate them to perform better. |

BC Curriculum Big Ideas (STUDENTS UNDERSTAND)

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| **Science**  Emission of greenhouse gas results in Ozone layer depletion, acid rain and more.  **Geography**  Global warming affects biodiversity, climate and geographic locations.  **Moral science**  Humans must be responsible towards their planet and take measures to reduce global warming and its adverse effects. |

BC Curriculum Learning Standards

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| **(STUDENTS DO)** | **(STUDENTS KNOW)** |
| Learning Standards - Curricular Competencies | Learning Standards - Content |
| **Science**  **Geography**: Question-answers  **Moral Science**: Moral responsibilities and performance | **Science**: Reasoning  **Social Studies:** Compassion and asking questions and answering questions |

Indigenous Connections/ First Peoples Principles of Learning

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| ***How will I incorporate Indigenous knowledge and principles of learning?***  In order to incorporate indigenous knowledge, and its principles of learning the educator needs to encourage experiential learning, interaction with the community, and teach students the importance of values, role of the family and community towards global warming and more. Furthermore, they will be provided with opportunities to explore their learnings and knowledge. |

Respectful Relations

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| ***How will I invite students of all backgrounds, interests and skills into the inquiry?***  The educator is required to build a good rapport towards the intended students and the tutor must try to learn about the interest areas of the students as well as their backgrounds. Based on this information, the educator will create lesson plans for the given topic. |

Project Overview

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| Time Estimate | | Teacher and Student Activities | Assessment Activities |
| Ask | 10 minutes | In the first phase, students will be asked about their existing knowledge on global warming and how it differs from climate change. | Development of handouts and questionnaires to ask. |
| Investigate | 30 minutes | In the second phase, they will be asked to investigate on the asked questions in the provided modules, study materials, flowcharts and other provided sources of information. | Preparation of a project book comparing content relevant to global warming. |
| Create | 30 minutes | In the third phase, students will be encouraged to develop document of the finding and create a hardcopy of the document regarding the impact of global warming and the similarities and dissimilarities between global warming and climate change. | PowerPoint presentation, and hardcopy of the document. |
| Discuss | 20 minutes | After completion of the documents, the education and the students will discuss the credibility of the document and they would among with each other of the findings relevant to the study topic. | Participation in debate. |
| Reflect | 10 minutes | In the last phase, students will share their experience on the entire workshop and their learning process. | Keeping a track on the project log book. |

Materials and Resources

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| -Chart paper and markers  -Notes and paper  -Flowcharts  -AV equipment and projector  PowerPoint presentation  -Handouts  -Study materials  -Question sets |

Organizational Strategies (Optional)

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| Online and digitized learning can be facilitated to the students for ensuring better and in depth learning through audio-visual and real time information. |

Proactive, Positive Classroom Learning Environment Strategies (Optional)

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| In order to promote a positive and proactive classroom learning environment, the educator needs to encourage the key principle of learning that is involved, collaborate and succeed. The set of decorum must be discussed and students must be encouraged. |

Extensions

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| The educator might encourage students for experiential learning through observation twice a week or as per the demand of the project. |

Reflections (to be completed after Project Completion)

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| What did I learn about Inquiry Based Pedagogy?  What challenges and successes did I experience?  What would I adapt for next time?  What questions do I still have about Inquiry Based Pedagogy? |

**References**

Pekel, F. O. (2019). Effectiveness of argumentation-based concept cartoons on teaching global warming, ozone layer depletion, and acid rain. *Journal of Environmental Protection and Ecology*, *20*(2), 945-953.

Putrayasa, I. B. (2018). Teaching and learning of Indonesian by constructivism model with inquiry approach. *KnE Social Sciences*, 764-772.

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