# Inquiry Project Plan main

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| Inquiry Title: | How can we save the earth from global warming? | Time Frame | Four-day workshop | Inquiry Approach: | Design thinking |
| Name: | Nidhi Saini | Subject(s): | Environmen-tal Education | Grade(s): | 7th |

Inquiry Project Rationale & Overview

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| Why does this topic matter to students?Global warming and its future consequences on human beings and on this planet are a topic of concern. The class 7 students need to be familiar with this topic so that they can be aware of their responsibilities towards saving the planet and mankind from the adverse effects of global warming. The importance of the topic lies in the very fact that it provides the study 4h its an outlook regarding the manner in which human activities have been creating a negative impact on the environment they are living into. Moreover it brings to them first hand information for the first time that human beings in general are equivalently responsible for taking effective care of the nature in which they reside and therefore a regular check has to be made of the kind of activities that could lead to degradation towards it. Furthermore it creates among the students a sense of awareness regarding such a global environmental issue and the manner in which such issues have been developed as a contribution of the human society only juist by mere negligence. In addition to those it is quite significant that the long term effects of such issues are quite dangerous . If the younger generations are not able to understand and acknowledge such issues as an issue of concern then the future outcomes are definitely going to be a challenging aspect. An important element in inquiry is what is being inquired (Bai, 2021)How does this project incorporate the inquiry cycle?In order to complete the lesson outcome of this project, the five phases of the inquiry cycle will be used during the four days of the workshop. Under this four day workshop the major aspects of the inquiry cycle would be addressed in a segregated format so that the fundamental objectives of the inquiry cycle could be obtained effectively. All of this would be done by taking into consideration the standard principles of BC curriculum only. The major steps of the inquiry cycle that is interaction, clarification, design and others would be integrated into the activities of the workshop so that greater emphasis is given on the overall learning process in regards to the topic.  In this way instead of memorizing the facts the students will be able to comprehend about the topic in a rational manner. Students would collaborate to create new knowledge (Friesen & Scott, 2013) |

Key Questions For Inquiry About the Topic of Study

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| Core Question | Supporting Questions |
| What are the more significant factors in global warming? | What is global warming?What are the causes of global warming?What are the impacts of global warming?Are climate change and global warming the same thing? |
| How can we save the earth from global warming? | What is the responsibility of the human beings to save earth from global warming?What roles can be played by human beings to save mankind from the negative impact of global warming?Why is it necessary for human beings to save earth from global warming?How can earth be saved from global warming? |



Inquiry Approach/Style and Rationale

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| The design thinking approach will be used in this project. Through the design thinking approach, the learners will be able to develop creative ideas on the given topic. This specific style of inquiry approach will be implemented for helping the students to develop ideas on global warming and expand their area of knowledge. |

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? | Through this inquiry, the learners will develop creative ideas and their learning approaches will expand and their knowledge will enrich. The students will be familiar with the question-answer session. For example- When the teachers will discuss the topic in the class, the students can ask questions to the teachers in order to clear their doubts. The teachers need to engage the students in the question answer session. This will certainly enhance students’ area of knowledge in regards to the chosen topic. In this section the teacher will need to use the chart with colourful pictures and short content in regards to the chosen topic. A pictorial representation of the topic that is global warming can help the stents to learn the topic easily and this will help the students to memorize the topic more vividly.  |
| **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? | This inquiry will be proved to be valuable, meaningful, and alive for the learners and the teachers because both will share their thoughts, ideas, and knowledge with each other. The students will be excited to know about a new topic. For example- while discussing the topic of global warming, the teachers are required to relate their discussions to the world in which the students live in. In this section the teacher can show the students short videos that can generate new ideas and knowledge about the topic. Apart from gaining knowledge from academic books, it is necessary for the students to enlarge their area of thinking. Resources like short videos, charts, and project books can be helpful for the students to learn the chosen topic easily. Students of today and the future are expected to have the skills necessary for collaborating, problem solving, creative and innovative thinking, and the ability to take advantage of information and communication technology applications (Valtonen *et al.* 2017).  |
| **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? | The students will be improving their concept on global warming and its future consequences. |
| **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? | The teach-student relationship will play a pivotal role to reach the final outcome of the concerned project. It is one of the primary responsibilities of the teachers to create a positive classroom environment so that the students feel excited to be engaged in the teaching and learning process. The teachers are expected to attract the students in the classroom teaching sessions through their teaching abilities and need to increase students' participation in the classroom activity so that the ultimate learning outcome can be achieved. For example- the teachers can make groups of the students and ask them to role play in regards to the discussion topic. The role play session is an important part of the teaching and learning process because through the role play session the students are able to learn about the practical aspect of the discussed topic. Sometimes it is seen that the teachers involve the students in creating a positive working atmosphere that can generate new ideas, promote creativity, and increase learning abilities. Teachers’ ability to create a positive learning environment in the classroom is largely dependent on the quality and experience of the concerned teacher. a positive culture that can help the students to learn about new things, uncover new areas of knowledge and explore new learning.  |
| **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? | Teachers’ learning abilities and competencies will be developed. The teachers in order to teach the class 7 students has to have the competencies and skills to manage, control the class and they need to have the required knowledge to give answers to the students about the discussed topic. The teachers can take help from the fellow teachers in order to increase their capabilities of managing a class and delivering required lessons to the students for making them understand the chosen topic. For example- the teachers can take help from their fellow teachers in order to prepare teaching and learning methods that will be used in the class. Sharing of ideas, creativity, skills and knowledge among the groups of teachers can increase the teachers’ capabilities to render teaching lessons in an effective manner. The teachers can prepare project books, powerpoint presentation with pictures and videos by the help of their fellow teachers in order to use these materials for the purpose of teaching and learning.  |

BC Curriculum Core Competencies

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| Communication | Thinking | Personal & Social |
| The teachers will communicate purposefully with the students to reach the final outcome of the project.The teachers will participate in group discussions by effective communication skills. Students must have problem-solving skills and good communication to be able to compete and contribute in the 21st century (Dewi Poedjiastoeti and Prahani, 2017). **Contributing to community and caring for environment-**Students will develop awareness of and take responsibility for their social , physical and natural environments by working independently and collaboratively for the benefit of others, communities and the environment.  |  By virtue of thinking abilities, the teachers can leave a lifelong and significant impact on the students. This sort of impact is not only related to the teaching of specific academic skills but as importantly teachers’ thinking abilities increase the students’ intellectual power and self-esteem. Reinforcing self-esteem in the classroom is associated with increased motivation and learning (Resien, Sitompul & Situmorang, 2020). The educators can guide the learners in order to increase their thinking power to involve in the story telling session, discussion, conduct research, and training for increasing their thinikihi abilities that can increase their area of knowledge. For example- the teachers can ask the students to participate in a story telling session about global warming and this will increase their imagination power. as a part of teaching learning resources, pictorial books, digital learning resources including video, audio, text, animations and images can be used. This will increase the students’ thinking capacities and this way the teachers’ competencies of thinking differently will also increase. **Building Relationships-*** Students will build and maintain diverse, positive peer and intergenerational relationships.
* Adjust their words and actions to care for their relationships.
 | A teacher’s understanding of the “complexity of the relationship between the students, teachers, content, practices and technologies” and to use this multifaceted knowledge to strategically and effectively integrate technology into their teaching to improve student learning (Ruddell, 2017). The teachers will have a close observation of the students’ social and personal environment to understand what role the environment plays in the cognitive development of the students. Creative thinking skills and problem-solving skills were among the competencies that must be possessed by students in the 21st-century, which need to be developed through the learning process, and are still a teacher challenge to date. (Khoiriyah & Husamah, 2018).**Resolving Problems-*** Students will identify and develop an appreciation for different perspectives on issues.
* They will generate, use and evaluate strategies to resolve problems.
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BC Curriculum Big Ideas (STUDENTS UNDERSTAND)

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| How do changes in the composition of the atmosphere lead to changes in the global climate?What are some of the human activities that contribute to climate change? Which of your actions contribute to climate change? |

BC Curriculum Learning Standards

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| (STUDENTS DO) | (STUDENTS KNOW) |
| Learning Standards - Curricular Competencies | Learning Standards - Content |
| Questioning and Predicting-Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest.Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world.**Processing and analyzing data-**Experience and interpret the local environment.Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information.* Analyze cause-and-effect relationships.

**Evaluating-*** Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources.
* Assess risks in the context of personal safety and social responsibility.

**Applying and Innovating-*** Contribute to care for self, others, community, and world through individual or collaborative approaches
* Co-operatively design projects with local and/or global connections and applications
* Contribute to finding solutions to problems at a local and/or global level through inquiry
* Implement multiple strategies to solve problems in real-life, applied, and conceptual situations
 | Changes to climate system-Sinks and sources of greenhouse gases, snow and ice coverage, land surface coverage, solar radiation, energy balance, ocean temperatures and sea levels.Impacts Of Global Warming-Increase in extreme weather events, Flooding, desertification, ocean acidification, permafrost melting, drought, wildfires, hurricanes, migratory changes, human health, food security, traditional ways of being and doing.  |

Indigenous Connections/ First Peoples Principles of Learning

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| The inquiry project aims to apply First People’s perspectives and knowledge, other ways of knowing and local knowledge as sources of information. It will help students to express and reflect on a variety of experiences, perspectives and worldviews through the place, the place is any environment, locality, or context with which people interact to learn, create a memory, reflect on history, connect with culture and establish identity. The connection between people and place is foundational to First People’s perspectives. The inquiry project will also help students to understand that how has global warming effect planet earth?Following are the relevant first People’s principles of learning related to this project-* Learning involves patience and time.
* Learning requires exploration of one’s identity.
* Learning involves generational roles and responsibilities.
* Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits.
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Respectful Relations

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| How will I invite students of all backgrounds, interests and skills into the inquiry? The teachers at first need to create a good rapport with the students and they should try to learn about the interest areas of the students and their backgrounds. Based on this information, the teachers will create lesson plans for the given trophy.  |

Project Overview

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| Time Estimate | Teacher and Student Activities | Assessment Activities |
| Ask | Day 1Day 2Day 3 Day 4 | On the very first day of the workshop, the students will be asked to share their thoughts and ideas on global warming. The students will share why they think this topic is important for them to know.On the second day at first, the students will be provided with the opportunity to ask questions about yesterday’s activities and clear their doubts. On this day, the students will learn to understand the impacts of global warming and the basic concept of global warming and climate change.This day, students will participate in a question-answer session where they will ask questions and clear their doubts on the lessons they have learnt. The overall learning outcome will be assessed. Significant factors of global warming will be discussed on the third day.On the last day of the workshop, the continuing part of significant factors will be explained and the students will be asked questions by the tutors on their learning outcomes.  | Question-answer through a picture book. Asking questions by making a collage on the given topic. Clearing doubts on the presentation shown by the teacher. Through a short animated movie on global warming, the students will be asked to share their concepts on the given topic. As a part of learning resources, the teachers will use a self-made PowerPoint presentation with pictures about global warming that can make the learning session attractive. In the above section it is said that the teachers will use animated videos on the topic that will engage the students in the classroom. This depends on the abilities of the teachers and how they can make the students involved in the classroom discussion.  |
| Investigate | Day 1Day 2Day 3Day 4 | By using a picture book on global warming, the students will be investigated for the given topic so that they can develop ideas about global warming and its consequences.The basic similarities, differences, and interrelationships of climate change and global warming will be discussed by the educators by showing a presentation.Significant factors of global warming will be explained by the tutors through video presentations.The educator will investigate students’ learning outcomes by asking them questions on the discussed chapters.  | Classroom assessment to know the progress of the students on the topic, preparation of a project book by including pictures, short content and drawing on global warming. In this part the educators will ask the learners to draw pictures based on their learning and knowledge on global warming and each of the students will present their drawing in front of everyone and discuss the concept of their drawing. This will be an effective learning resource for the students to present the knowledge through drawing.  |
| Create | Day 1Day 2Day 3Day 4 | A collage will be created by the tutors on global warming for creating and developing in-depth ideas on the selected topic.The students will be guided to create ideas and learn about climate change and global warming by delivering lessons through PowerPoint presentations.On this day of workshop, the students will have an internal class assessment through which the teacher will be able to know how far the topic is learnt and understood by the students.On the last day, an experiment on global warming will be shown by the teacher to teach the students about the causes and impacts of global warming and its significant factors. The possible ways of mitigating the risk factors of global warming will be discussed to create an overall concept on the given topic. | Creation of own learning road map on global warming and developing own set of short experiments to show significant factors of global warming. |
| Discuss | Day 1Day 2Day 3Day 4 | Discussion on the topic through picture books and engaging the students to prepare collage on global warming. Discussion on the learning of yesterday’s class activities and continue to discuss the topic through power point presentation.A detailed discussion on significant factors of global warming through video presentation. The video presentation will contain the future consequences of global warming, its impact on this earth and on human beings, its significant factors will be explained. On this day of the workshop, the teacher and students will participate in an open discussion where the students will clear their doubts and the teacher will ask questions to the students for knowing how much they have learnt. | Students will prepare a picture book, participate in a debate on global warming. Students will conduct a demo class on the topic to demonstrate their learning and knowledge on the topic. Before conducting the debate on global warming, the teachers will ask the students to research on the internet about the given topic and try to gather as much as data possible by keeping in mind their classroom standard. searching on the internet is an effective learning resource for the students. |
| Reflect | Day 4 | On the last day of the workshop, the students will share their experience on the entire workshop and they will discuss their learning process.  | Prepare a log book of self-journal for discussing self-reflection on the four days of workshop. |

Materials and Resources (use APA citation format)

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| Picture book, short animated movies, experiments, PowerPoint presentation, projector, picture collage, notebooks, project books, set of questions, handouts |

Organizational Strategies (Optional)

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| The teachers need to handle technical issues of the machinery used. Problem-solving skills for answering students’ questions. In the context of 21st-century teaching and learning, lecturers are required to provide more complex and dynamic learning opportunities than traditional lecturing (Irwanto & AD, 2018). |

Proactive, Positive Classroom Learning Environment Strategies (Optional)

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| The teachers will listen and observe students attentively. They will give ample chances to the students to expand their area of knowledge. A positive classroom environment will be created. Self-regulated learning (SRL) refers to “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior (Zheng & Zhang, 2020).  |

Extensions

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| The teachers might plan to take the students for an exposure observation twice a week or depending on 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? |

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