# Inquiry Lesson Plan 3

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| **Lesson Title:** | What measures can reduce air pollution?  | **Lesson #** | 3 | **Date:** | 5th April |
| Name: | Vani Dewan  | Subject(s): | Environmental Science | Grade(s): | 7th |

Lesson Rationale & Overview

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| *Why does this topic matter to students?*It is seen that nowadays, the schools also play an important role in monitoring air pollution and contributes to reducing the issue by motivating and teaching the students. There are fixed monitors, which can measure the air continuously that can recognize the times when pollution in the air is high, or the time when it is within the safe level. In this way, it can also help the students in educating them regarding the air pollutants and etcetera, therefore, the topic is important to students. *How does this lesson fit within the larger inquiry project?*Within the larger inquiry project, by following the correct approach, teachers can fit the lesson in the concerned project. In the context of inquiry-based learning of the project, students can develop the questions they are eager to know, research and find out the learning, which can be discussed by the teachers. *How does this lesson incorporate the inquiry cycle?*In the context of the overall process of concerned educational learning, as the inquiry-based learning is significant, therefore, the inquiry cycle will be followed. through different stages of the concerned cycle, the lesson and activities can be incorporated (Eltanahy & Forawi, 2019).  |

Key Questions For Inquiry About the Topic of Study

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| Core Question for Inquiry Project | Supporting Question(s) in This Lesson |
| The core questions for the concerned lesson 3 is stated in below. * What are possible measures of controlling air pollution?
 | * How to imply the measures of controlling the air pollution?
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**Inquiry Approach/Style and Rationale**

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| Out of different types of inquiry approach, for conducting the concerned lesson activities, the structure based inquiry learning can be taken into consideration where the teachers are able to lead the students while they are working throughout the process as the class together (Fitzgerald, Danaia & McKinnon, 2019).The reason, because of which, this particular approach is selected is the teacher can give the lessons along with all the materials and the detailed guidance to strengthen the class to develop the catapults together.  |

Core Principles of Effective Teaching. Describe two or more core principles in each lesson.

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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 the concerned inquiry-based learning approach the students are able to share their own ideas as well as queries regarding the concerned topic. The students are given the chance to explore topics, make their own connections, and ask questions. Therefore, they are able to learn more effectively and also disciplinary knowledge and understanding can also develop.  |
| **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?* | In terms of students as well as teachers, the inquiry cycle is valuable as the teacher can nurture meaningful student agency and the creativity of students can enhance. In terms of liveliness of the inquiry-based approach, the teachers can understand the students and can successfully engage them with peers, and the field.  |
| **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?* | In the Inquiry based approach, the curiosity of students helps them in engaging and gaining the deeper understanding of topics and material without primarily memorizing and recalling the rules, or ideas. Therefore, in this regard, the success and learning can be included within the inquiry and also, the horizons of students get broadened in engaging with peers, self, and teachers’ 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 connect with students, effective communication needs to be developed. Besides this, in order to connect with the exports, larger communities, and nature, the teacher can motivate students and apply a strong engaging approach so that students can connect.  |
| **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 the context of reflecting over the inquiry together along with collaborating with others, the teachers follow easy and understandable steps (DeLuca, Bolden & Chan, 2017). The honest occurrence can be reflected on the inquiry together.  |

BC Curriculum Core Competencies

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| Communication | Thinking | Personal & Social |
| Verbal as well as non verbal along with the informal communication approach can be taken into consideration by teachers along with having the appropriate listening skills (Bambaeeroon & Shokrpour, 2017).  | The critical thinking ability can be adopted to incorporate with the inquiry based learning to develop the higher order thinking skills.  | The personal and social factors incorporation are required to personalize the learning and strengthen the understanding skills.  |

BC Curriculum Big Ideas (STUDENTS UNDERSTAND)

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| For the third day of the workshop, the big idea under the BC curriculum is measures of reducing air pollution. The students have to focus on the possible ways to reduce the pollution in air.  |

BC Curriculum Learning Standards

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|  **(STUDENTS DO)** | **(STUDENTS KNOW)** |
| Learning Standards - Curricular Competencies | Learning Standards - Content |
| [**Processing and analyzing data and information**](https://curriculum.gov.bc.ca/curriculum/science/11/environmental-science)* Experience and interpret the local environment.
* Analyze cause-and-effect relationships.
* Construct, analyze, and interpret graphs, models, and/or diagrams.

Evaluating* Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources.
* Assess risks in the context of personal safety and social responsibility.
 | Students should develop the proper idea of how to control air pollution and the possible measures should be followed by them from tehri early age.  |

BC Curriculum Indigenous Connections/ First Peoples Principles of Learning

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| *How will I incorporate Indigenous knowledge and principles of learning?* By integrating the educational approach of the indigenous in the lesson activities, the teachers can incorporate both the indigenous knowledge as well as the principles of learning.  |

Respectful Relations: Inclusion, Personalization and Diversity

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| *How will I invite students of all backgrounds, interests and skills into the inquiry?* The teacher should be free from any kind of biases and also the discrimination should not be presented there regarding the backgrounds of the students.  |

Lesson Activities

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| Time Allotted | Teacher | Students | Assessment Activities |
| Invitation: Ask | 30 minutes  | Teachers have to give a brief introduction regarding the topic and outline the question for the students.  | Students will give the answers to the developed questions. | The assessment can follow the interaction between the teachers and students.  |
| Investigate  | 1 hours  | teachers have to offer students proper time so that they can carry out the investigations regarding the measures of reducing the pollutants from air. | Students have to investigate the questions given by teachers by following the guided paths. | The assessment can document the process of investigation. |
| Create | 1 hours  | Students can create flow charts, projects on the findings they can get, they can search videos . | they can create using their own understanding about the topic and they should follow certain videos and contents under the topic material  | The creativity of the students can be analyzed  |
| Discuss | 1 hours  | acknowledging the response of the students teacher can reveal the answers and show the students video on the concerned topic to make it easy for them to understand  | They should develop proper understanding from watching the particular video on the reducing ways of air pollutants.  | assessment can be focused on the analysis of the video  |
| Reflect | 1 hours  | The teacher should reflect on the overall experience considering the students behavior  | students should reflect on their own understanding and experience  | The assessment can be based on the honest reflection  |

Materials and Resources (use APA citation format)

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| Video presentation: <https://www.youtube.com/watch?v=WnToXmXj2ZU> |

Organizational Strategies (Optional)

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| Proper engagement, disciplinary strategy should be taken into consideration.  |

Proactive, Positive Classroom Learning Environment Strategies (Optional)

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| the learning environment should be appropriate for establishing the inquiry based learning  |

Extensions

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| Extension related decisions can help the teachers to obtain better learning outcomes on the third day of the workshop.  |

Reflections (to be completed after the Lesson Demonstration ONLY)

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**References**

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Eltanahy, M., & Forawi, S. (2019). Science Teachers’ and Students’ Perceptions of the Implementation of Inquiry-Based Learning Instruction in a Middle School in Dubai. *Journal of Education*, *199*(1), 13-23.

Fitzgerald, M., Danaia, L., & McKinnon, D. H. (2019). Barriers inhibiting inquiry-based science teaching and potential solutions: perceptions of positively inclined early adopters. *Research in Science Education*, *49*(2), 543-566.