

Lesson Plan 4 – STREAMS Education ENGINEERING

Lesson Title: **Engineering Solutions for Climate Action**

Grade Level: 8-12 years

Objectives:

- Students will understand the impact of climate change on our planet and why it is important to take action.
- Students will learn about different engineering solutions to address climate change.
- Students will analyse the effectiveness of these solutions and identify areas where more work is needed.

Materials:

- Computer with internet access
- Projector
- Whiteboard or blackboard
- Markers or chalk
- Handouts with assessment quizzes

Procedure:

1. Introduction (10 mins)
 - Begin by showing a short video (<https://www.youtube.com/watch?v=4HJ8Qv4tRzY>) to the students that explains what climate change is and why it is a problem.
 - Ask the students if they have heard about climate change before and what they know about it.
2. Engineering Solutions (25 mins)
 - Show the students a video (<https://www.youtube.com/watch?v=4vTcJ7PvxkA>) that highlights different engineering solutions to address climate change.
 - Pause the video at different points to ask the students what they see and what they think is happening.
 - Discuss with the students the different solutions that were presented in the video, such as wind turbines, solar panels, and electric cars.
 - Ask the students to identify other solutions that they have heard about or can think of.
3. Analyzing Effectiveness (25 mins)
 - Show the students a video (<https://www.youtube.com/watch?v=2rNohflwBwY>) that discusses the effectiveness of different engineering solutions to address climate change.
 - Pause the video at different points to ask the students what they see and what they think is happening.
 - Discuss with the students the pros and cons of each solution and the challenges that still need to be overcome.
 - Ask the students to identify which solutions they think are most effective and why.
4. Assessment Activities (20 mins)
 - Hand out assessment quizzes to the students that cover the topics discussed in the lesson.

- The quizzes should include multiple-choice questions and short-answer questions that test the students' knowledge and understanding of the lesson.
 - Review the quizzes with the students and provide feedback on their answers.
5. Conclusion (10 mins)
- Recap the main points of the lesson and ask the students what they learned.
 - Encourage the students to think about what they can do to help address climate change.
 - End the lesson by showing a video (<https://www.youtube.com/watch?v=dLZcwCBoMZ0>) that highlights the role of young people in fighting climate change.

Assessment:

- Multiple-choice questions and short-answer questions that test the students' knowledge and understanding of the lesson.

Resources:

- <https://www.youtube.com/watch?v=4HJ8Qv4tRzY> (What is Climate Change?)
- <https://www.youtube.com/watch?v=4vTcJ7PvxkA> (Engineering Solutions for Climate Change)
- <https://www.youtube.com/watch?v=2rNohfLwBwY> (Analyzing Effectiveness of Climate Change Solutions)
- <https://www.youtube.com/watch?v=dLZcwCBoMZ0> (Young People and Climate Change)