

Natural Greenhouse Gas	Grade 10 Science – Earth and Space Science
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<h2 style="margin: 0;">Lesson Plan</h2>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 5px; text-align: center;">Cross Curricular</td> <td style="padding: 5px;">Computational Thinking</td> </tr> <tr> <td style="padding: 5px; text-align: center;">Safety Notes</td> <td style="padding: 5px;">N/A</td> </tr> </table>	Cross Curricular	Computational Thinking	Safety Notes	N/A
Cross Curricular	Computational Thinking				
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<p>Big Ideas</p> <ul style="list-style-type: none"> Demonstrate an understanding of natural and human factors, including the greenhouse effect, that influence Earth’s climate and contribute to climate change. <p>Learning Goals</p> <ul style="list-style-type: none"> Students will learn about the natural greenhouse effect. Students will learn about computational thinking. Students will design and create an ozobot model to illustrate the natural greenhouse gas. 	<p>Specific Expectations</p> <ul style="list-style-type: none"> Students will describe the natural greenhouse effect, explain its importance for life, and distinguish it anthropogenic greenhouse effect. 				

Description
 Students will learn about the greenhouse effect, how it contributes to climate change, and how it influences Earth’s climate by coding digital cue cards.

<p>Materials</p> <ul style="list-style-type: none"> Ozobot Evo & Ozobot Evo Smart Device App Ozobot Coloured Markers White Blank Paper Tablet or Computer <i>1A Natural Greenhouse Gas Engage</i> Handout Student Copy <i>1A Natural Greenhouse Gas Engage</i> Handout Teacher Copy <i>1B Greenhouse Gases Ozobot Evo Explore Explain Elaborate</i> PowerPoint <i>1C Natural Greenhouse Gas Explore Explain Elaborate</i> Handout <i>1D Natural Greenhouse Effect Diagram</i> Internet (Optional) Textbook (Optional) 	<p>Accommodations/Modifications Students have the opportunity to type, verbally record with speech-to-text software, and draw their answers.</p>
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Introduction

- Engage:** View video on Greenhouse Effect
https://www.youtube.com/watch?v=x_sJzVe9P_8
- While viewing the video, the students will complete the *1A Natural Greenhouse Gas Engage* handout.

Action

- Educators will introduce the **Explore** stage of the lesson by handing out the *Natural Greenhouse Gas Explore and Explain* handout and projecting the *1B Greenhouse Gases Ozobot Evo Explore Explain Elaborate* PowerPoint on the projector.
- Students will complete the **Explore** section of the *1C Natural Greenhouse Gas Explore and Explain* handout by collaborating with a partner to design a rough draft model for an Ozobot Evo to demonstrate the Natural Greenhouse Effect.
- Students will include labels and explanation for each aspect of the design.
- Educators will begin the **Explain** stage of the lesson with the *1C Natural Greenhouse Gas Explore and Explain* handout and the *1B Greenhouse Gases Ozobot Evo Explore Explain Elaborate* PowerPoint on the projector.
- Educators will explain the concepts, Greenhouse Gases, Natural Greenhouse Effect, and Anthropogenic Greenhouse Effect, while moving through the *1B Greenhouse Gases Ozobot Evo Explore Explain Elaborate* PowerPoint on the projector.
- Students will complete the **Explain** section of the *1C Natural Greenhouse Gas Explore and Explain* handout while the educator moves through the *1B Greenhouse Gases Ozobot Evo Explore Explain Elaborate* PowerPoint on the projector.
- Students will complete the **Elaborate** section of the lesson by programming the Ozobot Evo with the Ozobot Evo App to illustrate the process of natural greenhouse effect.
- The educator can provide the *1D Natural Greenhouse Effect Diagram* to aid students in the task or students can design and create their own model with Ozobot Coloured Markers.
- The educator can provide students with helpful resources and hints with the *1B Greenhouse Gases Ozobot Evo Explore Explain Elaborate* PowerPoint while they complete the Elaborate phase.

Consolidation/Extension

- Educators will **Evaluate** students with the *1C Natural Greenhouse Gas Explore Explain Elaborate* handout.
 - Students will collaborate with their partner to answer scaffolding questions on the concept of natural and anthropogenic greenhouse effects.
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