

Climate Change: An Introductory Lesson Plan for Middle School

As a **middle school teacher** (for age group 10-14 years), you can use this lesson plan to introduce climate change and its impacts to your students. Climate change can be complex and is often difficult to explain to middle school students. It is especially important for middle school teachers to teach this critical issue meaningfully and yet engage them positively (with minimal doom and gloom associated with the current climate crisis).

In this lesson plan, students will be introduced to the basics of climate change, which is one of the most significant issues of our time. Students will further learn about the causes of climate change and will explore possible climate solutions.

Learning Outcomes

The tools in this lesson plan will enable students to:

- get an introductory understanding of climate change and its global impacts
- learn about the causes and effects of climate change
- discuss and explore solutions to the climate crisis

About

Grade Level	Middle School (Ages 10-13 years)
Discipline	Environmental Sciences, Social Sciences
Topic(s) in Discipline	Climate Change Overview
Climate Topic	Introduction to Climate Change
Location	Global
Access	Online
Language(s)	English
Approximate Time Required	70 mins
Mapped Sustainable Development Goal(s), apart from 4 and 13	

Step-by-step User Guide

Here is a step-by-step guide to using this lesson plan in the classroom/laboratory. We have suggested these steps as a possible plan of action. You may customise the lesson plan according to your preferences and requirements.

<p>1</p>	<p>Initiate the topic of Climate Change Impacts with the help of a climate story</p> <p>Reading (10 mins)</p>	<p>Begin your lesson by showing your students some examples of impacts of climate change from your location. Learning is more effective when it is local and in the context of the students. You may search for a recent story on any news portal of your choice or you could browse the ‘Climate Stories’ section on the TROP ICSU platform where you can find location specific climate stories. This section contains Climate Stories from every country of the world. It is advisable to search for age specific stories.</p> <p>Read More</p>
<p>2</p>	<p>Introduce the science of Climate Change through a readings and videos</p> <p>Reading (15 min) and Video (5-15 min)</p>	<p>Use the reading titled, “The Causes of Climate Change” from the NASA Global Climate Change website, that provides introductory information on climate change and global warming. It contains information on the scientific evidence of climate change, its causes and impacts.</p> <p>Read More</p> <p>Optional: This set of 7 short video micro-lectures (2-5 minutes in length) have been developed by the National Research Council, The National Academies of Sciences, Engineering, and Medicine. This can be used to provide additional information on climate change.</p> <p>They include:</p> <ol style="list-style-type: none"> 1. What is Climate? Climate Change, Lines of Evidence Chapter 1 2. Is Earth Warming? Climate Change, Lines of Evidence Chapter 2 3. Greenhouse Gases. Climate Change, Lines of Evidence Chapter 3 4. Increased Emissions. Climate Change, Lines of Evidence Chapter 4 5. How Much Warming? Climate Change, Lines of Evidence Chapter 5 6. Solar Influence. Climate Change, Lines of Evidence Chapter 6 7. Natural Cycles. Climate Change, Lines of Evidence Chapter 7 <p>Read More</p>
<p>3</p>	<p>Classroom/Lab Activity to explore the topic through an interactive comic book</p> <p>Classroom/Laboratory Activity (20 min)</p>	<p>Further engage your students into a classroom activity of reading through an interactive comic book by Somdatta Karak, CSIR- Centre for Cellular & Molecular Biology, India that introduces what is climate change. This comic is based on a talk by Joy Merwin Monteiro, IISER Pune titled ‘How do scientists study climate change?’ as part of the Climate Change Challenge outreach program of the CCMB. This reading can be used as an introduction to the topic of climate change by primary, middle school and high school teachers.</p> <p>It includes discussions on:</p> <ol style="list-style-type: none"> 1. The difference between weather and climate 2. What determines the climate of planet Earth 3. The Greenhouse effect of the atmosphere 4. Greenhouse gases such as CO₂ and water vapour 5. Impacts of global warming 6. Methods of measuring climate change

		Read More
4.	Discuss solutions to the climate crisis using an interactive reading (Reading 20 min)	<p>Finally, use the interactive reading titled “The six-sector solution to the climate crisis” provided by the United Nations Environment Programme to discuss about a possible roadmap for a carbon-free future. This interactive portal mentions the policies and actions that can be undertaken by governments in various sectors to reduce carbon emissions. These sectors include:</p> <ol style="list-style-type: none"> 1. Buildings and Cities 2. Energy 3. Industry 4. Agriculture and Food Waste 5. Nature Based Solutions 6. Transport <p>Read More</p>

Questions

Use this Lesson Plan to help the students to understand and find answers to:

1. What is Climate Change?
2. Discuss the factors that indicate climate change on our planet.
3. What is the relationship between carbon emissions and climate change?
4. Discuss the possible solutions for the climate crisis.

Additional Resources:

Sr. No.	Name of the Teaching Tool	Name of Owner/Author, Affiliation, weblink
1.	Classroom/Lab Activity	<p>Use the colouring book titled “Climate Change Colouring Book” by Brian Foo, to help students explore climate data and research through various colouring activities.</p> <p>This can be accessed here.</p>

Credits

Sr. No.	Name of the Teaching Tool	Name of Owner/Author, Affiliation, weblink
1.	Reading “ Climate Stories ”	By TROP ICSU

2.	Reading “ The Causes of Climate Change ”	By NASA Global Climate Change website
3.	Video Lectures “ Climate Change, Lines of Evidence ”	By The National Academies of Sciences, Engineering, and Medicine
4.	Classroom/Lab Activity “ What is Climate Change- A Comic Book ”	By Somdatta Karak, CSIR- Centre for Cellular & Molecular Biology, India
5.	Reading “ The six-sector solution to the climate crisis ”	By United Nations Environment Programme
6.	Additional Resources	By Brian Foo