

Climate Change: An Introductory Lesson Plan for Undergraduates

As an **undergraduate teacher**, you can use this lesson plan to introduce climate change and its impacts to your students.

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	Undergraduate
Discipline	Biological Sciences, Environmental Sciences, Earth Sciences, Geography, Physics, Chemistry, Economics, Humanities, Social Sciences, Mathematics and Statistics
Topic(s) in Discipline	Climate Change Overview
Climate Topic	Introduction to Climate Change
Location	Global
Access	Online
Language(s)	English
Approximate Time Required	80 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 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 Rap Music</p> <p>Classroom/Laboratory Activity (20 min)</p>	<p>Further use this classroom activity of watching a video titled ‘The Rap Guide To Climate Chaos’ by Baba Brinkman that contains 24 tracks on climate change. Discuss with your students the science, politics and economics of climate change by summarising the video through a class reflections session. The tracks cover a variety of topics such as greenhouse gases, carbon emissions, climate taxes and green capitalism.</p> <p>Tracks include–</p> <ol style="list-style-type: none"> 1. Options 2. I.P.C.C. 3. Keep It Positive 4. Greenhouse (feat. Aaron Nazrul) 5. Party Don’t Stop 6. Run the Joules 7. Mo Carbon Mo Problems 8. What’s Beef (feat. Bill Nye)

		<ol style="list-style-type: none"> 9. Battle Lines 10. Lost in the Numbers 11. Bright Side 12. Fossil Fuel Ballers (feat. Aaron Nazrul) 13. Exxon Knew 14. Laudato Si 15. Yank the Plug 16. Make It Hot 17. Regulators 18. Carbon Bubble (feat. Mariella) 19. Stranded Assets 20. Ride Electric (feat. Fand) 21. This or That 22. Freedom Ain't Free 23. Stand Up 24. Makin' Waves (feat. Gaia's Eye) <p>Read More</p>
4.	<p>Discuss solutions to the climate crisis using a series of video playlists</p> <p>Video (20 min)</p>	<p>Finally, use this series of video playlists from the 'Murtugudde Climate Academy' by Dr. Raghu Murtugudde to help your students explore climate solutions in different sectors. This series of playlists primarily summarises the findings of the book 'Drawdown' edited by Paul Hawken that provides climate solutions for Energy, Food, Buildings and Cities, Land Use, Transport, Materials, and Upcoming Technologies.</p> <p>This series is divided into 10 playlists as follows:</p> <ol style="list-style-type: none"> 1. Mind the Emission Gap 2. Methodology 3. Energy 4. Food 5. Women and Girls 6. Buildings and Cities 7. Land Use 8. Transport 9. Materials 10. Coming Attractions <p>You can choose one or more playlists from the above mentioned sectors, depending upon your teaching requirement and refer to the video lectures within that sector/s.</p> <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	Use the colouring book titled “Climate Change Colouring Book” by Brian Foo, to help students explore climate data and research through various colouring activities. This can be accessed here .
2.	Reading	An interactive comic book by Somdatta Karak, CSIR-Centre for Cellular & Molecular Biology, India that introduces what is climate change. This can be accessed here

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 “ The Rap Guide To Climate Chaos ”	By Baba Brinkman, Talks at Google
5.	Video “ Climate Solutions- Drawdown ”	By Murtugudde Climate Academy
6.	Additional Resources	Brian Foo Somdatta Karak, CSIR- Centre for Cellular & Molecular Biology, India