

Greenhouse Effect

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives



Learning Objectives

- ▶ **Demonstrate Greenhouse Effect**
using Interactive PhET simulation



Pre-requisites



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- ▶ **You should have knowledge of High School Science**



System Requirement



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- ▶ **Ubuntu Linux OS v 14.04**



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- ▶ **Java v 1.7.0**



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- ▶ **Java v 1.7.0**
- ▶ **Firefox Web Browser v 53.02.2**



Learning Goals



Learning Goals

- ▶ **Effect of greenhouse gases on atmospheric temperature**



Learning Goals

- ▶ **Effect of greenhouse gases on atmospheric temperature**
- ▶ **Explore and compare the atmosphere of Ice age and Today**



Learning Goals

- ▶ Effect of greenhouse gases on atmospheric temperature
- ▶ Explore and compare the atmosphere of **Ice age** and **Today**
- ▶ **Effect of Glass Panes and Clouds on atmospheric temperature**



Learning Goals



Learning Goals

- ▶ **Interaction of photons with atmospheric gases**



Learning Goals

- ▶ **Interaction of photons with atmospheric gases**
- ▶ **Contribution of atmospheric gases to Greenhouse Effect**



Greenhouse Effect



Greenhouse Effect

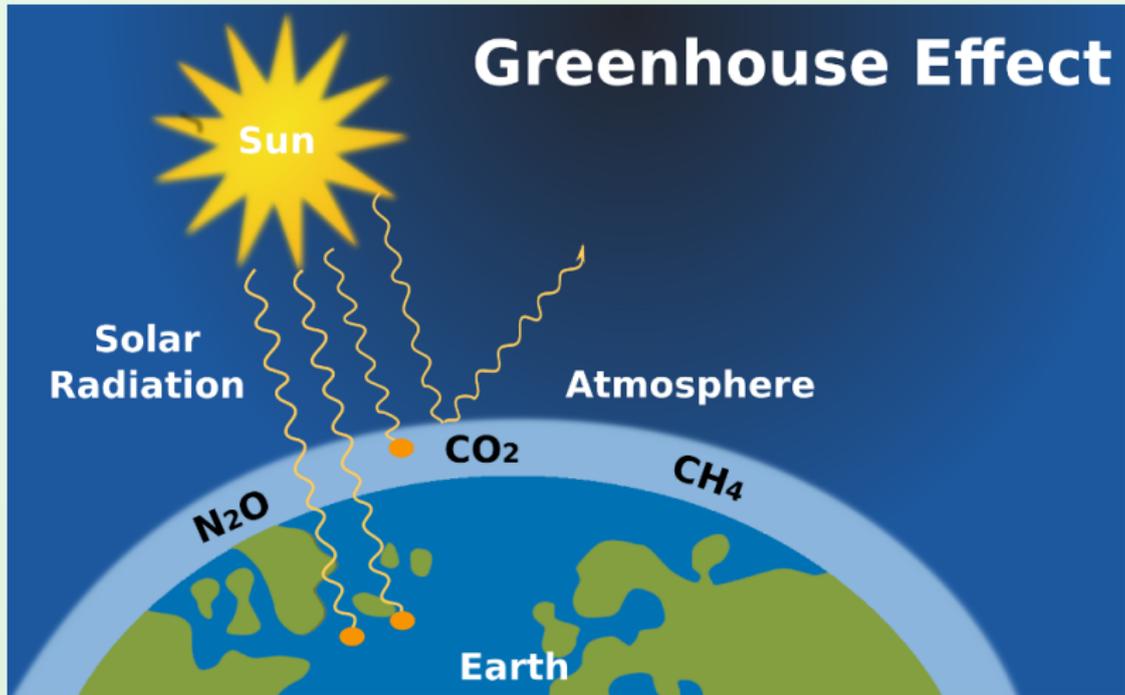
- ▶ **It is a phenomenon in which, earth's atmosphere traps radiation emitted by Sun**



Greenhouse Effect



Greenhouse Effect

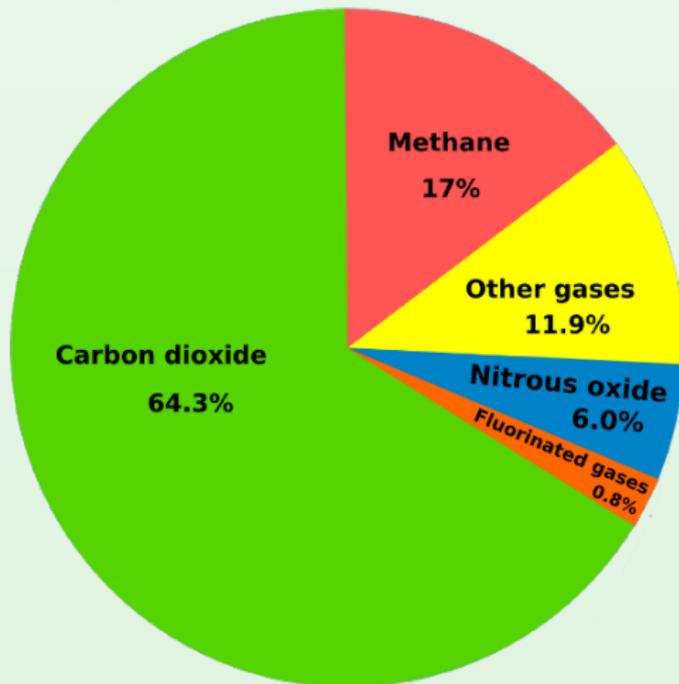


Greenhouse Gases



Greenhouse Gases

Percentage of Greenhouse Gases



Greenhouse



Greenhouse



Greenhouse

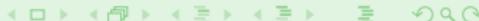


Greenhouse



PhET Simulation Link

<https://phet.colorado.edu>



Summary



Summary

- ▶ Effect of greenhouse gases on atmospheric temperature
- ▶ Compared the atmosphere of **Ice age** and **Today**
- ▶ Effect of **Glass Panes** and **Clouds** on atmospheric temperature



Summary



Summary

- ▶ **Interaction of photons with atmospheric gases**
- ▶ **Contribution of atmospheric gases to Greenhouse Effect**



Assignment I

1. Compare atmospheric temperature during 18th century and **Ice age**
2. Add **Clouds** to the simulation and observe the changes in the temperature
3. Explore **Glass Layers** and **Photon Absorption Screens**



Assignment II

4. Explain why **Glass Panes** increase the temperature of the atmosphere



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project



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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Forum for specific questions

- ▶ Do you have questions in **THIS Spoken Tutorial?**
- ▶ Please visit
<http://forums.spoken-tutorial.org>
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ Someone from our team will answer them



Acknowledgements

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Acknowledgements

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- ▶ It is supported by the National Mission on Education through ICT, MHRD, Government of India
- ▶ More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

