

LEARNING OBJECTIVES

- 1) Draw and label a diagram demonstrating the greenhouse effect. In words briefly describe the basic mechanism.
- 2) Draw a diagram of the CO₂ Cycle and explain how its negative feedback response to change (either higher or lower temperatures) has maintained the Earth's temperature at a moderate, steady value
- 3) List five important physical conditions on Earth which have contributed to its long-term habitability to life.

Required Textbook readings for class 8: pages 132– 138 (4.5)

1. How much warmer has our Earth's greenhouse effect made the Earth (relative to what Earth would have been like without its atmosphere)? Is the greenhouse effect 'bad'?
2. If the greenhouse effect can be a good thing, why should we be concerned that we are greatly increasing the amount of greenhouse gases in our atmosphere?
3. What is the importance of rain and liquid surface water for removing CO₂ from the atmosphere?
4. How would the Earth's CO₂ cycle break down if seafloor subduction stopped?
5. If the Earth heats up too much, how does the Earth respond to regulate its temperature? How about when it cools down too much?
6. Is the CO₂ cycle always able to keep the temperature moderate on Earth? What might go wrong?
7. What aspects of the Earth's conditions have lead to its long-term habitability?