**Aim**: What role does the atmosphere play in managing the heat budget of our planet?

**Do Now**: In the box below, fill in the diagram however you see fit that would explain how the Greenhouse Effect works and please label all parts of your diagram clearly. Provide an explanation in paragraph form on how you believe this process works below.

**Explanation:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Work Product:** Your will be conducting independent research that will answer the AIM. On the following page are a series of guided questions that will help you to focus your research. Please make sure to write the sources for where you got your information.

Guided Questions:

1. What is a simple definition for the term atmosphere?

2. What does one atmosphere mean when measuring atmospheres?

3. In the diagram below, show a complete, correct diagram of the greenhouse effect. Identify the following: The type of incoming solar radiation, what happens at the earth surface, the type of outgoing radiation, the composition of the Earth’s atmosphere, and how the atmosphere interacts with both the incoming and outgoing types of radiation.

4. Explain the diagram using the following six terms: emit, reflect, absorb, short-wave radiation, long-wave radiation, albedo.

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**Homework**: Complete the chart below and if you have finished the guided questions before class is over, you must start this.

|  |  |  |
| --- | --- | --- |
| Atmospheric Comparison of the Terrestrial Planets | | |
| Planet | Average Temp (Fo) | Detailed explanation for average temperature |
| Mercury |  |  |
| Venus |  |  |
| Earth |  |  |
| Mars |  |  |

**Thinking Critically**: Based on the information above, which planets do you think would be the most suitable for human exploration and colonization? What steps would human space pioneers need to take to establish a colony on the planet that you have chosen? Please write your answer in well-composed paragraphs on the back of this sheet. Take care to write as legibly as you can so a classmate can read it tomorrow.

Choice: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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