Student Workbook for:

Lab 02: Earth-Sun Relationships & Earth’s Energy Budget

By Andrew Perkins

**Exercise 1: Earth-Sun Relationships and Earth’s Energy Budget**

Question 4. a.

|  |
| --- |
| **Table 2.1. Actual amount of radiation received at Earth's surface on the equinoxes and solstices at three locations.** |
|  **Month** |  **Equator** |  **Tropic of Cancer** |  **North Pole** |
|  March |   |   |   |
|  June |   |   |   |
|  September |   |   |   |
|  December |   |   |   |

**Exercise 1: Earth-Sun Relationships and Earth’s Energy Budget**

Question 4.b.

 **Figure 2.8.** Change in energy received at Earth's surface through time. Source: A. Perkins, CC BY-NC-SA 4.0

**Exercise 2: The March of the Seasons and the Angle of the Noon Sun**

Question 7.

|  |  |  |
| --- | --- | --- |
| **Diagram** | **Angle of Noon Sun** | **Relative Intensity of the Sun Angle** |
| On Oct. 3rd, if you are located at 0° latitude: |
|  |  |  |
| On April 2nd, if you are located at 61° North latitude: |
|  |  |  |
| On Dec. 9th, if you are located at 85° North latitude: |
|  |  |  |

**Exercise 2: The March of the Seasons and the Angle of the Noon Sun**

Question 8.

 **Figure 2.9.** Schematic of solar panel. Source: A. Perkins, CC BY-NC-SA 4.0

**Exercise 4: Lapse Rates**

Exercise 4: Temperature Gradients Graph

