**The Sun’s Effect on Earth’s Surfaces: Sand and Grass**

**Purpose:** shows students the effects of sunlight on sand and grass and how the sun is able to warm grass and soil

**Materials:**

 2 plastic trays

 sand

 soil

 grass

**Procedure:**

 1. Half-fill one tray with sand, and one with soil and grass on top

 2. Place them on a sunny windowsill or outside in the sun

 3. Measure the temperature with a thermometer

 4. Measure the temperature again after 1/2 hour, 1 hour, and 2 hours

 Ask students what they observed, have them record their observations on their worksheet

 5. Now place both trays in a shady place indoors, under a dark cloth

 6. Measure temperature after 1/2 hour, 1 hour, and 2 hours

 Ask students which one cools down quicker

**Table 1:**

**OBSERVATIONS:**

|  |  |  |
| --- | --- | --- |
|  | **Sand** | **Soil with Grass** |
| **Beginning** | **1. Outdoor:****2. Indoor:** | **1. Outdoor:****2. Indoor:** |
| **After ½ hour** | **1. Outdoor:****2. Indoor:** | **1. Outdoor:****2. Indoor:** |
| **After 1 hour** | **1. Outdoor:****2. Indoor:** | **1. Outdoor:****2. Indoor:** |
| **After 2 hours** | **1. Outdoor:****2. Indoor:** | **1. Outdoor:****2. Indoor:** |

**Table 2:**

**Temperature:**

|  |  |  |
| --- | --- | --- |
|  | **Sand** | **Soil with Grass** |
| **Beginning** | **1. Outdoor:****2.Indoor:** | **1. Outdoor:****2. Indoor:** |
| **After ½ hour** | **1. Outdoor:****2. Indoor:** | **1. Outdoor:****2. Indoor:** |
| **After 1 hour** | **1. Outdoor:****2. Indoor:** | **1. Outdoor:****2. Indoor:** |
| **After 2 hours** | **1. Outdoor:****2. Indoor:** | **1. Outdoor:****2. Indoor:** |

**Questions:**

**1. Does sand cool down quicker, or does the soil with grass?**

**2. Does the sand and soil cool down quicker in the sun or in the shade?**

**3. What makes the shade cool?**

**4. Where does the heat come from?**

**5. Is it better to stand in the sun or in the shade on a hot day? Explain.**