<table>
<thead>
<tr>
<th>Big Idea</th>
<th>Essential Questions</th>
<th>Concepts</th>
<th>Competencies</th>
<th>Vocabulary</th>
<th>PA SAS Standards</th>
<th>Assessment Anchor Eligible Content</th>
<th>Text pages or supplementary material</th>
<th>Date Assessed</th>
</tr>
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<tbody>
<tr>
<td>The Universe is composed of a variety of different objects, which are organized into systems, each of which develops according to accepted physical processes and laws.</td>
<td>What are the predictable patterns caused by different objects in the solar system? How do objects in the universe appear and behave?</td>
<td>N/A</td>
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<tr>
<td>The Earth is a complex and dynamic set of interconnected systems (e.g. geosphere, hydrosphere, atmosphere, biosphere) that interact over a wide range of temporal and spatial scales.</td>
<td>How and why is Earth constantly changing?</td>
<td>Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. (ESS2.D)</td>
<td>Use and share observations of local weather conditions to describe patterns over time. (K-ESS2-1)</td>
<td>Sunny Changes Cloudy Cold Cool Describe Foggy Hot Observe Partly Cloudy Patterns Predict Rainy Snowy Warm Weather Windy</td>
<td>3.3.3.A5 3.3.4.A5</td>
<td>S4.A.1.1 S4.A.1.3 S4.A.2.1 S4.A.2.2 S4.A.3.1 S4.A.3.2 S4.A.3.3 S4.A.3.3.1</td>
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## Earth and Space Science

### Big Idea
The Earth is a complex and dynamic set of interconnected systems (e.g. geosphere, hydrosphere, atmosphere, biosphere) that interact over a wide range of temporal and spatial scales.

### Essential Questions
How and why is Earth constantly changing?  
Sunlight warms the Earth’s surface. (PS3.B)

### Concepts
- Sunlight warms the Earth’s surface. (K-PS3-1)
- Use tools and materials to design and build a structure that will reduce (or increase) the warming effect of sunlight on an area. (K-PS3-2)

### Competencies
Make observations to determine the effect of sunlight on the Earth’s surface.  
Build Canopy  
Cool Materials  
Structure  
Sunlight  
Tent  
Tools  
Umbrella  
Warming effect

### Vocabulary
- Changes  
- Describe  
- Earth  
- Surface  
- Sunlight  
- Observe  
- Predict

### PA SAS Standards
- 3.2.3.B3  
- S4.A.1.3  
- S4.A.2.1  
- S4.A.3.3  
- S4.D.2.1

### Assessment Anchor Eligible Content
- S4.A.1.3  
- S4.A.2.1  
- S4.A.2.2  
- S4.A.3.3  
- S4.B.2.1  
- S4.B.3.2  
- S4.D.2.1

### Text pages or supplementary material
N/A

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<td>How and why is Earth constantly changing?</td>
<td>Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (ESS3.B)</td>
<td>Ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to weather. (K-ESS3-2)</td>
<td>Conditions Design Evaluate Hazard Natural Natural hazard Process Region Solution Weather</td>
<td>3.3.3.A5 3.3.4.A5</td>
<td>S4.A.1.1 S4.A.1.3 S4.A.2.1 S4.A.2.2 S4.A.3.1 S4.A.3.2 S4.A.3.3</td>
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<td>The Earth’s surface processes affect and are affected by human activities.</td>
<td>People can make choices to reduce impact on the environment. (Ess3.C)</td>
<td>Describe ways to reduce impact of humans on the land, water, and air. (K-ESS3-3)</td>
<td>Air Choices Impact Land Water</td>
<td>4.5.K.D 4.5.2.C</td>
<td>S4.B.3.2  S4.B.3.3</td>
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<td>Things that people do to live can affect the world around them. (ESS3.C)</td>
<td>Describe and communicate solutions to reduce impact of humans on land, water, and air. (K-ESS2-2)</td>
<td>Recycle Reduce Reuse Solutions</td>
<td>4.5.PK.d 4.5.3.D</td>
<td>S4.B.3.2  S4.B.3.3</td>
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<td>Living things need water, air, and resources from the land. Organisms live in places that have the things they need. (Ess3.A)</td>
<td>Using evidence, state an argument how plants and animals can change the environment to meet their needs. (K-ESS3-1)</td>
<td>Argument Evidence</td>
<td>4.1.3.D 4.2.K.A</td>
<td>S4.A.1.1  S4.B.3.2  S4.B.3.3</td>
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