

CORE CONCEPTS

Earth and Space

- The universe contains billions of stars, planets, and other celestial objects.
(SC.E.2.2.1)
- Our solar system consists of a star, our sun, orbited by nine unique planets, asteroids, and comets.
(SC.E.1.2.3, 1.2.4, 1.2.5, 2.2.1)
- All celestial objects are in motion. For example, the Earth rotates on a tilted axis as it revolves around the sun.
(SC.E.1.2.1, 1.2.2)
- The appearance of objects (the moon, constellations, etc.) in the night sky changes due to the movements of the Earth and other celestial objects.
(SC.E.1.2.2)
- The sun provides light and heat energy which supports life on Earth.
(SC.E.1.2.1, 1.2.3)

STRAND E: EARTH AND SPACE

SC.E.1.2.1

Benchmark

SC.E.1.2.1. The student knows that the tilt of the Earth on its own axis as it rotates and revolves around the sun causes changes in season, length of day, and energy available.

Standard 1

The student understands the interaction and organization in the Solar System and the universe and how this affects life on Earth.

Sample Performance Description

The student demonstrates and relates day and night to the rotation of the Earth on its axis and the concept of seasons to the tilted axis of the Earth.

Item Type(s)

MC, SR

Benchmark Clarification

The student identifies and describes how the position of Earth in relation to the Sun impacts Earth and knows the effects of energy available to organisms.

Content Limits

Items will assess one concept (i.e. night and day, seasons, length of day, or energy available) at a time.

Stimulus Attributes

None specified.

Response Attributes

None specified.

STRAND E: EARTH AND SPACE

SC.E.1.2.2

Benchmark

SC.E.1.2.2. The student knows that the combination of the Earth's movement and the moon's own orbit around Earth results in the appearance of cyclical phases of the moon.

Standard 1

The student understands the interaction and organization in the Solar System and the universe and how this affects life on Earth.

Sample Performance Description

The student uses a ball, globe and light source to demonstrate the phases of the Moon and makes a chart to record observations and communicate the pattern observed.

Item Type(s)

MC

Benchmark Clarification

The student identifies factors that change the amount of sunlight reflected from the Moon to Earth.

Content Limits

None specified.

Stimulus Attributes

Items will NOT provide student with data in list form.

Items may provide the student with data in list form.

Items may provide the student with data in diagram or picture form.

Response Attributes

Items may require responses in a diagram or picture form.

STRAND E: EARTH AND SPACE

SC.E.1.2.3

Benchmark

SC.E.1.2.3. The student knows that the sun is a star and that its energy can be captured or concentrated to generate heat and light for work on Earth.

Standard 1

The student understands the interaction and organization in the Solar System and the universe and how this affects life on Earth.

Sample Performance Description

The student with other students in a small group, designs, builds, and uses a solar cooker to cook or warm food and reports on the experience.

Item Type(s)

MC

Benchmark Clarification

The student identifies the ways that solar energy is collected and used on Earth.

Content Limits

None specified.

Stimulus Attributes

Items may provide the student with data in diagram or picture form.

Response Attributes

None specified.

STRAND E: EARTH AND SPACE

SC.E.1.2.4

Benchmark

SC.E.1.2.4. The student knows that the planets differ in size, characteristics, and composition and that they orbit the sun in our Solar System. This benchmark also assesses SC.E.1.2.5.

Standard 1

The student understands the interaction and organization in the Solar System and the universe and how this affects life on Earth.

Sample Performance Description

The student classifies planets by atmospheres, chemical makeup, sets of rings, and natural satellites and explains the classification.

Item Type(s)

MC

Benchmark Clarification

The student compares and contrasts properties of the planets in our solar system.

Content Limits

Items will NOT require memorization of solar system data.

Stimulus Attributes

Items may provide the student with data on planets in chart or diagram form.

Response Attributes

None specified.

STRAND E: EARTH AND SPACE

SC.E.1.2.5

Benchmark

SC.E.1.2.5. The student understands the arrangement of planets in our Solar System.

Standard 1

The student understands the interaction and organization in the Solar System and the universe and how this affects life on Earth.

Sample Performance Description

The student classifies planets by atmospheres, chemical makeup, sets of rings, and natural satellites and explains the classification.

Item Type(s)

Assessed as SC.E.2.1.4

Benchmark Clarification

N/A

Content Limits

N/A

Stimulus Attributes

N/A

Response Attributes

N/A

STRAND E: EARTH AND SPACE

SC.E.2.2.1

Benchmark

SC.E.2.2.1. The student knows that, in addition to the sun, there are many other stars that are far away.

Standard 2

The student recognizes the vastness of the universe and the Earth's place in it.

Sample Performance Description

The student compares the color and brightness of our Sun with other stars.

Item Type(s)

MC

Benchmark Clarification

The student identifies the Sun as a medium-sized star in a galaxy containing billions of stars.

Content Limits

Items may assess the student's understanding of light-years.

Stimulus Attributes

N/A

Response Attributes

N/A