



## Space Standards

### Kindergarten

#### Earth and Space Sciences

##### The Universe

1. Observe that the sun can be seen only in the daytime, but the moon can be seen sometimes at night and sometimes during the day.

##### Scientific Inquiry

##### Doing Scientific Inquiry

1. Ask "what if" questions.
2. Explore and pursue student-generated "what if" questions.

##### Scientific Ways of Knowing

##### Nature of Science

1. Recognize that scientific investigations involve asking open-ended questions. (How? What if?)

### Grade One

#### Scientific Inquiry

##### Doing Scientific Inquiry

1. Ask "what happens when" questions.
2. Explore and pursue student-generated "what happens when" questions.

### Grade Two

#### Earth and Space Sciences

##### The Universe

1. Recognize that there are more stars in the sky than anyone can easily count.
2. Observe and describe how the sun, moon and stars all appear to move slowly across the sky.
3. Observe and describe how the moon appears a little different every day but looks nearly the same again about every four weeks.

##### Scientific Inquiry

##### Doing Scientific Inquiry

1. Ask "how can I/we" questions.
2. Ask "how do you know" questions (not "why" questions) in appropriate situations and attempt to give reasonable answers when others ask questions.
3. Explore and pursue student-generated "how" questions.

## Grade Five

### Earth and Space Sciences

#### The Universe

1. Describe how night and day are caused by Earth's rotation.
2. Explain that Earth is one of several planets to orbit the sun, and that the moon orbits Earth.
3. Describe the characteristics of Earth and its orbit about the sun (e.g., three-fourths of Earth's surface is covered by a layer of water [some of it frozen], the entire planet surrounded by a thin blanket of air, elliptical orbit, tilted axis and spherical planet).
4. Explain that stars are like the sun, some being smaller and some larger, but so far away that they look like points of light.

## Grade Eight

### Earth and Space Sciences

#### The Universe

1. Describe how objects in the solar system are in regular and predictable motions that explain such phenomena as days, years, seasons, eclipses, tides and moon cycles.
2. Explain that gravitational force is the dominant force determining motions in the solar system and in particular keeps the planets in orbit around the sun.
5. Explain that the universe consists of billions of galaxies that are classified by shape.
6. Explain interstellar distances are measured in light years (e.g., the nearest star beyond the sun is 4.3 light years away).
8. Name and describe tools used to study the universe (e.g., telescopes, probes, satellites and spacecraft).

## Grade Nine

### Earth and Space Sciences

#### The Universe

2. Describe the current scientific evidence that supports the theory of the explosive expansion of the universe, the Big Bang, over 10 billion years ago.
3. Explain that gravitational forces govern the characteristics and movement patterns of the planets, comets and asteroids in the solar system.