

Sun, Moon and Earth

Key idea: The sun, moon and Earth are all connected and related

Activity One: The sun takes a vacation

Activity Card

The sun, moon and Earth are connected in many ways. The sun gives us light every day and helps to warm our Earth. The light from the sun also reflects off the moon to make it stand out in our night sky. Use the information provided and your information from class (what you already know) to help answer the following question.

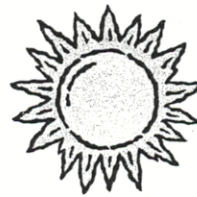
- ❖ What would happen to the Earth and the moon if the sun did not shine for one week in the month of February?

Questions to think about:

- How would you know if the moon were still in the solar system?
- How would this affect people's every day lives?
- How would the time of year affect what would happen?

Your Task: Create a model using the provided materials to display your answers and thoughts.

Materials: flashlight, clay, grass(dead and fake), paper, shoebox, straws, aluminum foil, buttons, paper tubes, cereal boxes, thermometer



Evaluation Criteria

- ✓ Your model shows more than one idea your group has thought of.
- ✓ Your model shows how the Earth and people will be affected.

Sun, Moon and Earth

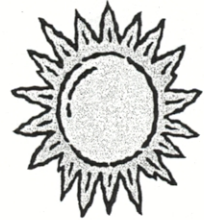
Key Idea: The sun, moon and Earth are all connected and related.

Activity One: The sun takes a break

Resource Card

Helpful Information

- The sun gives the Earth light and heat each day.
- The sun helps plants to grow.
- The sun still gives the Earth light and heat on a cloudy day.
- The moon reflects the sun's light and this is why the moon appears bright at night.
- It takes 8 minutes for the sun's light to reach the Earth.



Space

Key Idea: The Earth, Moon, and Sun are connected and related.

Activity 2: Who needs whom?

Activity Card

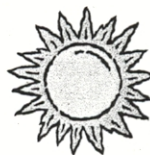
The Earth, Moon, and Sun are very important to each other. Can you imagine what our solar system would be like if one was missing? All of them have decided that they have had enough of our solar system. They have decided to go away and explore other galaxies and solar systems, one at a time. The sun has decided to go and explore first. The Earth and Moon are sad but are all set to say goodbye. Suddenly they begin to realize how much they need the sun and decide to hold a debate for the entire solar system. In this debate, the Earth and Moon need to prove to the sun that they need it to stay. This debate must prove how important the sun is or the sun might decide to leave and the Earth and Moon may be in great danger!

MATERIALS:

Paper, pencils, books, nametags.

PROCEDURE:

1. First, you must decide who is going to be the Sun, Moon, and Earth. The entire group must help find important information in the resource books. It may be helpful to take notes as you go. It will also be helpful to choose a debate moderator. This person will keep the debate going smoothly and will make sure everybody gets a chance to speak. A debate summarizer will also be important. This person can help to keep track of all the important points made during the debate. So, when the Earth explains why the Sun can't leave, the summarizer will keep track of that.
2. The Earth, Moon, and Sun will all take turns *pretending* they are going to leave the solar system. The other two will have to tell the group why this object can't leave the solar system. They will have to explain what would happen to them if this object actually left.
3. Keep going until all three, the Earth, Moon, and Sun, have pretended to leave the solar system. Prepare your debates or information in a way that is easiest to make a convincing argument explaining what would happen to the remaining two if one was to leave.



Space

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Activity 2: Who needs whom?

Resource Card

To complete this activity, use what you have learned during our Space unit and the books that are provided.

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Activity Three: Moon Mission

Activity Card

In 1969 people from the USA first visited the moon. They had to wear specially designed suits so they could breathe and be comfortable. Without these suits they would not have survived because the surface of the moon is very different than the surface of the Earth.

Discuss:

- What adaptations would a person need to have to live comfortably on the moon?
- What changes might need to be made on the moon so it could support life?

Your Task: Build a model of what a community would look like if we could build one on the moon.

➤ Things to think about:

- How would we breathe?
- What would we eat while we lived there/how could we grow food?
- What would we use as shelter?
- What would we do for fun?
- How would we get water?

Materials: clay, paper, shoebox, straws, aluminum foil, buttons, paper tubes, cereal boxes, plastic bowl/dish, fake grass, balloons, anything else your group finds useful that teachers approve of



Evaluation Criteria

- ✓ Model shows how to eat/drink, breathe, and have shelter on the moon.
- ✓ Model clearly shows your group's plan for survival on the moon.

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Activity Three: Moon Mission

Resource Card

Helpful Information

- There is no atmosphere on the moon so there is no oxygen.
- The moon has less gravity than the Earth. If you weigh 60 pounds on Earth you will only weigh 10 pounds on the moon.
- There is no water on the moon.
- There is no soil on the moon that could be used to grow food.
- The moon gets much hotter and also much colder than the Earth.



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Activity 4: Space-mobile!

Activity Card

The Earth, Moon, and Sun are connected and related but have very different features. The atmosphere, temperature, amount of gravity, and surface conditions are just a few of the major differences between them. Your group has decided that they would like to be able to travel to and move around on all three of these places. Your job is to investigate how such travel could take place and to create a space-mobile to help you reach this goal.

MATERIALS:

Cereal boxes, toilet paper rolls, tin foil, chips, egg cartons, cardboard, pipe cleaners, other helpful materials that may be in the room.

PROCEDURE:

1. Together, discuss what features your space-mobile would have to have in order for you to be able to travel to and around the Earth, Moon, and Sun.
2. Create a space-mobile out of the box of materials. (It does not have to look or run like the automobiles we are used to.)
3. Be able to explain how each part of the space-mobile helps you out in each place.



Space

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Activity 4: Space-Mobile!

Resource Card

- The Earth has a special mixture of gases that surrounds and protects it.
- The Sun provides the Earth with plenty of heat and light.
- The Earth has 1.7 million plant and animal species and probably many more that have not been discovered yet.
- The Sun can be as hot as 27 million degrees in its center.
- The Sun is much bigger than any planets in the solar system.
- The Sun's energy comes to Earth as our heat and light.
- The Moon is made of rock and has no air or water.
- We, on Earth, can often see the phases of the moon, these phases can be seen when we are looking at the sunlit part of the moon as it orbits the Earth.
- In the daytime, the Moon gets very hot. The temperature reaches 250 degrees because there is no air to protect the Moon from the Sun.
- At night the Moon gets icy cold and can get to 290 degrees below zero.
- The Moon's gravity causes the high and low tide.
- The Moon uses the sun's rays to light up the sky.

Name _____

Date _____

1. How are the Earth, Moon, and Sun important to each other?
Give examples.

2. What are important things you would need to live on either the Sun or the Moon?