

Objectives:

- Students will be able to describe the sun and how it affects life on Earth in oral and/or written form.
- Students will know the sun is the central and largest body in the solar system and is composed primarily of hydrogen and helium.
- Students will know energy comes from the sun to Earth in the form of light.

Language Objectives:

- Students will be able to identify comparatives and superlatives, describing planets relative to the sun (close, far, hot, cold, colder, coldest)

Materials:

picture cards, photographs, two index cards, straight pin, globe, flashlight

Book:

Inside the Sun

Whole Group (Levels 1, 2, and 3)

Introduction/Background/Motivation:

- Review facts about the sun.
- Discuss how the distances from the sun affects the possibility of life on other planets.
- On the board, list the planets and their distance from the sun. Discuss how Pluto is no longer considered a planet, but is now called a "dwarf planet." Write the following planets and distances from the sun: Pluto – 3,688 million miles, Neptune – 2,794, Uranus- 1,784, Saturn – 887, Jupiter -483, Mars – 142, Earth – 93, Venus – 67, Mercury – 36
- Cut ribbon the following lengths to represent the planets' distances. Pluto will be 30 ft.; Neptune 23 ft.; Uranus, 15 ft.; Saturn 7 ft.; Jupiter, 4 ft.; Mars 14 in.; Earth 9 in.; Venus 7 in.; Mercury 3 in.
- Attach one end of each piece of ribbon to a central point that will represent the sun.
- Have students represent the planets and hold the other end of the ribbon.
- Have students share how it would be on each planet (cold, hot, bright, dark).
- Have students walk around the sun to demonstrate the word "orbit."
- Discuss distance from the sun by introducing the words far, farther, farthest, close, closer, closest, cold, colder, coldest, hot, hotter, hottest.
- Pass out the above words written on large index cards to students and have them stand next to planets that match up with the appropriate word (for example, hottest and closest index cards should be standing next to Mars)
- Read *Inside the Sun*

ELD LEVELS

Level 1 – Beginning

Target Vocabulary:

energy, galaxy, light, solar system, spiral, temperature

Guided Instruction:

- Review the solar system (sun, planets) and show how the sun is the central and largest body in the solar system.
- Write the word *sun* and circle it. Write the vocabulary words and describe how each relates to the sun.
- Introduce vocabulary by using visuals, writing the words, and demonstrating them. Example: *Demonstrate what a spiral is (draw a spiral on the board, and make a spiraling hand motion). Ask students to make a spiral motion with their fingers or hand.*
- Introduce the word *temperature* by discussing today's temperature. Talk about hot and cold, and ask students if they think the sun is hot or cold.

Independent Activity:

- Have students draw a sun. Inside the sun, have students write words or draw pictures about what the sun means to them.
- Have students discuss how the sun affects them. Write their responses on sentence strips and have students copy them and read them on their own.
- Have students use the word cards and match the definitions or pictures with the words.

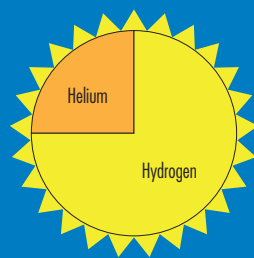
Levels 2 and 3 – Early Intermediate and Intermediate

Target Vocabulary:

galaxy, spiral, energy, helium, hydrogen, pressure, colder, coldest, hotter, hottest, farther, farthest, closer, closest

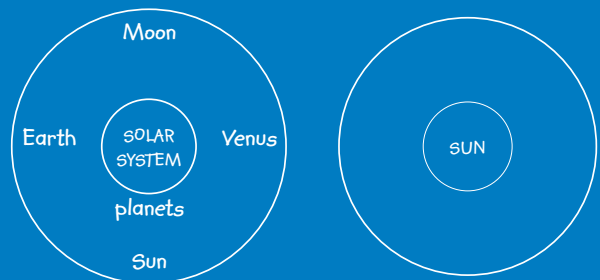
Guided Instruction:

- Review the vocabulary words by showing pictures of images representing each word.
- Discuss how the sun is made up of many different gases.
- Discuss how three-quarters of the sun is made up of hydrogen gas and one-quarter of the sun is made up of helium gas.
- Demonstrate this using graphic organizers or a pie chart.



- Have students complete a circle map. In the middle circle, have students write solar system or sun. Have students write in the larger circle words that describe the solar system or the sun.

Examples:



Create a table similar to the one below. Have students fill out the following table by putting an X or a check mark in the appropriate box.

	Hot	Cold	Close to sun	Far from sun
Mercury	X		X	
Pluto				
Venus				
Neptune				
Uranus				
Earth				

Closure – Whole Group:

- Ask students to tell you about the sun. Ask questions: What is the sun? How does it affect us? Do you think the sun is good for people? Do you think the sun helps Earth? What would happen if we had no sun?
- Discuss how the sun provides energy in the form of light. Ask students to give examples of how it benefits them and write responses on the board or chart paper.
- Discuss the concept of daylight and night in different areas of the world.
- Using a globe and flashlight, demonstrate how the sun causes day and night by shining the flashlight on the globe. Remind students that it is daylight where the sun is shining and nighttime where the sun is not shining.
- Spin the globe slowly and ask students to predict what will happen next.
- Discuss the fact that the sun shines all the time but we cannot always see it because Earth is spinning and the sun shines on different parts of the world at different times.
- Discuss how this affects climates and lifestyles.

Extended Activities:

- Review vocabulary words and have students match the words with the definitions written on sentence strips.
- Have students write and illustrate their own books about the sun using this text and other resources. Provide orange and yellow construction-paper circles for the pages. Have students staple their cover and pages together. Ask them to include two or three related facts per page. Write a few facts to model what to include. For example:

The sun is made of hydrogen and helium.

Earth and eight other planets and their moons travel around the sun.

The sun provides us with light.

Recommended Literature Books:

- Branley, Franklyn M. *The Sun: Our Nearest Star*. New York: HarperCollins Children's Book Group, 2002.
- Fowler, Allan. *Energy from the Sun*. Danbury, CT: Scholastic Library Publishing, 1998.
- Sorensen, Lynda. *Sun*. Vero Beach, FL: Rourke Publishing, LLC, 1993.

Web Sites:

- Views of the Solar System: Sun <http://www.solarviews.com/eng/sun.htm>
- Astronomy for kids http://www.kidsastronomy.com/solar_system.htm
- Jet Propulsion Laboratory (JPL) Solar system <http://www.jpl.nasa.gov/solar-system/index.cfm>

Comprehension Strategy:

- Write the title of the book's first chapter on the board or chart paper. Ask students to predict what they think the chapter will be about. Write their responses on the board.
- Read the chapter to the class.
- Ask students what the main ideas were.
- Refer to their previous responses and cross out or erase any response that was not correct. Circle the correct predictions.
- Discuss the main ideas and come up with one or two main concepts from the chapter.

Independent Activity:

- Divide the class into four groups and assign each group one of the remaining chapters.
- Give each group chart or poster paper. Have them write their chapter title at the top.
- Have each group carry out the above Comprehension Strategy activity on their assigned chapter.

Level 3 – Advanced

Independent Activity:

- Ask students to summarize the main concepts in each chapter. Have students write a paragraph for each of the chapters.
- Assign pairs to read and discuss their summaries with each other.
- Have students write a Diamente Poem (refer to Teachers Manual)

Line 1: Sun (noun as a subject)

Line 2: ____ ____ (two adjectives describing sun)

Line 3: ____ ____ ____ (three related verbs or participles ending in -ing)

Line 4: ____ ____ ____ ____ (four nouns related to sun)

Line 5: ____ ____ ____ (three verbs opposite sun)

Line 6: ____ ____ (two adjectives opposite)

Line 7: ____ (one noun that is the opposite).

TESOL:

Grades Pre-K–3, 4–8:

- Goal 1, Standard 3 – To use English to communicate in social settings: Students will use learning strategies to extend their communicative competence.
- Goal 2, Standard 1 – To use English to achieve academically in all content areas: Students will use English to interact in the classroom.

- Goal 2, Standard 2 – To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form.
- Goal 2, Standard 3 – To use English to achieve academically in all content areas: Students will use appropriate learning strategies to construct and apply academic knowledge.

NATIONAL SCIENCE STANDARDS:

Grades K–4 Earth and Space Science:

Content Standard D – As a result of activities in grades K–4, all students should develop understanding of: Objects in the sky- The sun, moon, stars, clouds, birds, and airplanes all have properties, locations, and movements that can be observed and described. The sun provides the light and heat necessary to maintain the temperature of Earth.

Grades 5–8 Earth and Space Science:

Content Standard D – As a result of activities in grades 5–8, all students should develop understanding of: Structure of Earth

system Landforms are the result of a combination of constructive and destructive forces. Constructive forces include crustal deformation, volcanic eruption, and deposition of sediment, while destructive forces include weathering and erosion.

Earth is the third planet from the sun in a system that includes the moon, the sun, eight other planets and their moons, and smaller objects, such as asteroids and comets. The sun, an average star, is the central and largest body in the solar system. Most objects in the solar system are in regular and predictable motion. Those motions explain such phenomena as the day, the year, phases of the moon, and eclipses.

NATIONAL ENGLISH LANGUAGE ARTS STANDARDS:

Standard 4 – Students adjust their use of spoken, written, and visual language (e.g. conventions, style, vocabulary) to communicate effectively with variety of audiences and for different purposes.