

Brunswick School Department
Grade 3
Earth in the Universe

Essential Understandings	<ul style="list-style-type: none">▪ The Earth is part of a vast universe.▪ Cycles occur on Earth.
Essential Questions	<ul style="list-style-type: none">▪ What is a universe?▪ What is in the earth's solar system?▪ What is a cycle?▪ What are some physical (non-living) cycles on earth (e.g., water, day and night, phases of the moon, tides)?▪ What is the water cycle?
Essential Knowledge	<ul style="list-style-type: none">▪ Our universe consists of all matter and energy, including the earth and galaxies.▪ The Earth's solar system consists of a sun, eight planets, their moons and other object.▪ The Earth, moon, sun, stars, planets, and galaxies have relative positions.▪ The sun is the only star in our solar system.▪ Each of the planets revolves around the sun in its own specific path.▪ It takes 24 hours for the Earth to make one complete rotation on its axis.▪ The Earth's revolution takes about one year (365 days).▪ The moon revolves around the earth.▪ The Earth's rotation causes day and night.▪ The changing view of the moon is called the moon's phases.▪ Ocean tides are caused by the pull of gravity between the Earth, the moon, and the sun.▪ A cycle is a repeated event.▪ Many changes on Earth occur in cycles.▪ The seasons are due to the tilt of the earth rotating on its axis.▪ The same water molecules are being cycled over and over again.▪ Scientists use tools to conduct investigations, gather data, and answer questions.▪ Scientists use evidence to develop and communicate theories and understandings.

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Vocabulary	<ul style="list-style-type: none">▪ <u>Terms:</u><ul style="list-style-type: none">○ cycle, galaxy, universe▪ <u>Planets:</u><ul style="list-style-type: none">○ Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune▪ <u>Phases of The Moon:</u><ul style="list-style-type: none">○ new, waxing (crescent), full, waning(crescent), ocean, tides, gravity, gibbous▪ <u>Water Cycle:</u><ul style="list-style-type: none">○ water molecule, cloud, precipitation, evaporation, transpiration, condensation▪ <u>Seasons:</u><ul style="list-style-type: none">○ axis, tilt, revolution, rotation, hemisphere
Essential Skills	<ul style="list-style-type: none">▪ Locate the relative position of the sun, moon and the planets.▪ Define rotation, axis, and revolution and its relationship with the earth and sun.▪ Identify some physical (non-living) cycles.▪ Identify some patterns of change in our solar system.▪ Explain how the seasons change.▪ Explain the water cycle.▪ Make a table or graph to illustrate the phases of the moon or some other pattern.▪ Plan and conduct an investigation using appropriate tools.▪ Use data to develop and communicate outcomes.

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<p style="text-align: center;">Related Maine Learning Results</p>	<p><u>Science</u></p> <p>A. Unifying Themes</p> <p>A3.Constancy and Change</p> <p>Students identify and represent basic patterns of change in the physical setting, the living environment, and the technological world.</p> <ol style="list-style-type: none"> a. Recognize patterns of change including steady, repetitive, irregular, or apparently unpredictable change. b. Make tables or graphs to represent changes. <p>B. The Skills and Traits of Scientific Inquiry and Technological Design</p> <p>B1.Skills and Traits of Scientific Inquiry</p> <p>Students plan, conduct, analyze data from, and communicate results of investigations including fair tests.</p> <ol style="list-style-type: none"> a. Pose investigable questions and seek answers from reliable sources of scientific information and from their own investigations. b. Plan and safely conduct investigations including simple experiments that involve a fair test. c. Use simple equipment, tools, and appropriate metric units of measurement to gather data and extend the senses. d. Use data to construct and support a reasonable explanation. e. Communicate scientific procedures and explanations. <p>D. The Physical Setting</p> <p>D1. Universe and Solar System</p> <p>Students describe the positions and apparent motions of different objects in and beyond our solar system and how these objects can be viewed from Earth.</p> <ol style="list-style-type: none"> a. Show the locations of the sun, Earth, moon, and planets and their orbits. <p>D2.Earth</p> <p>Students describe the properties of Earth's surface materials, the processes that change them, and cycles that affect the Earth.</p> <ol style="list-style-type: none"> a. Explain the effects of the rotation of Earth on the day/night cycle, and how that cycle affects local temperature. b. Describe the various forms water takes in the air and how that relates to weather.
<p style="text-align: center;">Sample Lessons And Activities</p>	<ul style="list-style-type: none"> ▪ Make a chart of the phases of the moon (chart daily phases). ▪ Make a biosphere using soil, grass seed and water in a 2 liter plastic bottle. ▪ Demonstrate the day/night cycle using models (ex. globe and flashlight).
<p style="text-align: center;">Sample Classroom Assessment Methods</p>	<ul style="list-style-type: none"> ▪ Sequence the order of the planets starting at the sun. ▪ Illustrate the water cycle. ▪ Using a model demonstrate the movement of the moon and Earth relative to the sun.

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Sample Resources	<ul style="list-style-type: none"> ▪ <u>Publications:</u> <ul style="list-style-type: none"> ○ <u>Can You Hear A Shout In Space?</u> - Melvin Berger ○ <u>The Children's Space Atlas</u> - Robin Kerrod ○ <u>A Day In Space</u> - Suzanne Lord ○ <u>Is There and Outer Space?</u> - Franklyn Branley ○ <u>The Magic School Bus: Out Of This World</u> - Johanna Cole ○ <u>The Magic School Bus: Lost In The Solar System</u> - Joanna Cole ○ <u>Magic Tree House: Space</u> -William Osborne ○ <u>Magic Tree House: Midnight on the Moon</u> -William Osborne ○ <u>The Moon</u> - Paulette Bourgeois ○ <u>The Moon Book</u> - Gail Gibbons ○ <u>Our Solar System and Beyond</u> - Q.L. Pearce ○ <u>Planet Earth, Inside/Out</u> - Gail Gibbons ○ <u>Planets</u> - Penny Lane Publications ○ <u>The Planets in our Solar System</u> - Franklyn Branley ○ <u>Seeing Stars</u> - James Muirden ○ <u>Solar System</u> - Gregory Vogt ○ <u>Space</u> - Juliette Underwood ○ <u>A Star Is Not A Planet and Other Mix-Ups In Space</u> - Melvin Berger ○ <u>Stargazers</u> - Gail Gibbons ○ <u>Stars and Constellations</u> - Raman Prinja ○ <u>What's Out There? A Book About Space</u>, L. Wilson ▪ <u>Videos:</u> <ul style="list-style-type: none"> ○ <u>All About The Solar System</u> ○ <u>Exploring Our Solar System</u> ○ <u>Eyewitness Planets</u> ○ <u>The Magic School Bus Gets Lost In Space</u> ○ <u>The Magic School Bus Goes To The Waterworks</u> ○ <u>The Solar System</u> ○ <u>The Solar System A First Look</u> ○ <u>Space, Earth and Atmosphere</u> ○ <u>Sun, Earth, Moon</u> ○ <u>The Universe and Us</u>
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