

Maine Learning Results 2007	ESS Presentations
D. The Physical Setting	
D1 Universe and Solar System: Pre-K-2	
Students describe the movement of objects across the sky, as seen from Earth	
a. Describe how the sun and moon seem to move across the sky.	Shadows Weather
b. Describe the changes in the appearance of the moon from day to day.	The Moon
D1 Universe and Solar System: Grades 3-5	
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.	
a. Show the locations of the sun, Earth, moon, and planets and their orbits.	Our Solar System
b. Observe and report on observations that the sun appears to move across the sky in the same way every day, but its path changes slowly over the seasons.	Days and Seasons
c. Recognize that the sun is a star and is similar to other stars in the universe.	Our Solar System
D2 Earth: Pre-K-2	
Students describe Earth's weather and surface materials and the different ways they change.	
a. Explain that the sun warms the air, water, and land.	Weather
b. Describe the way in which weather changes over months.	Weather
c. Describe what happens to water left in an open container as compared to water left in a closed container.	
D2 Earth: Grades 3-5	
Students describe the properties of Earth's surface materials, the processes that change them, and cycles that affect the Earth.	
a. Explain the effects of the rotation of Earth on the day/night cycle, and how that cycle affects local temperature.	Weather Days and Seasons
b. Describe the various forms water takes in the air and how that relates to weather.	Weather Predicting the Weather Changing State
c. Explain how wind, waves, water, and ice reshape the surface of Earth.	Erosion, Transportation and Deposition
d. Describe the kinds of materials that form rocks and soil.	Rocks Soil
e. Recognize that the sun is the source of Earth's surface heat and light energy.	Weather
f. Explain how the substance called air surrounds things, takes up space, and its movement can be felt as wind.	
D3 Matter and Energy: Pre-K-2	

K-2 Product
3-5 Product

Students use observable characteristics to describe objects and materials and changes to physical properties of materials.	
a. Describe objects in terms of what they are made of and their physical properties.	Marvellous Materials Materials Matter
b. Describe changes in properties of materials when mixed, heated, frozen, or cut.	Changing Materials Hot and Cold
D3 Matter and Energy: Grades 3-5	
Students describe properties of objects and materials before and after they undergo a change or interaction.	
a. Describe how the weight of an object compares to the sum of the weight of its parts.	
b. Illustrate how many different substances can be made from a small number of basic ingredients.	
c. Describe properties of original materials, and the new material(s) formed, to demonstrate that a change has occurred.	Separating Mixtures
d. Describe what happens to the temperatures of objects when a warmer object is near a cooler object.	Insulators and Conductors
e. Describe how the heating and cooling of water and other materials can change the properties of the materials.	Changing State Separating Mixtures
f. Explain that the properties of a material may change but the total amount of material remains the same.	
g. Explain that materials can be composed of parts too small to be seen without magnification.	
D4 Force and Motion: Pre-K-2	
Students describe how objects move in different ways.	
a. Describe different ways things move and what it takes to start objects moving, keep objects moving, or stop objects.	Feel the Force Senses
b. Give examples of things that make sound by vibrating.	Sounds
D4 Force and Motion: Grades 3-5	
Students summarize how various forces affect the motion of objects.	
a. Predict the effect of a given force on the motion of an object.	Forces Friction
b. Describe how fast things move by how long it takes them to go a certain distance.	
c. Describe the path of an object.	

d. Give examples of how gravity, magnets, and electrically charged materials push and pull objects.	Magnets Gravity Forces Electromagnets
E. The Living Environment	
E1 Biodiversity: Pre-K-2	
Students describe similarities and differences in the observable behaviors, features, and needs of plants and animals.	
a. Describe similarities and differences in the way plants and animals look and the things that they do.	Animals and Plants Living Things
b. Describe some features of plants and animals that help them live in different environments.	Living Things
c. Describe how organisms change during their lifetime.	Growing Up Growing Plants
E1 Biodiversity: Grades 3-5	
Students compare living things based on their behaviors, external features, and environmental needs.	
a. Describe how living things can be sorted in many ways, depending on which features or behaviors are used to sort them, and apply this understanding to sort living things.	Habitats Adaptations
b. Describe the changes in external features and behaviors of an organism during its life cycle.	Growing Up Adaptations Plant Reproduction
E2 Ecosystems: Pre-K-2	
Students understand how plants and animals depend on each other and the environment in which they live.	
a. Explain that animals use plants and other animals for food, shelter, and nesting.	Living Things Habitats
b. Compare different animals and plants that live in different environments of the world.	Living Things Adaptations
E2 Ecosystems: Grades 3-5	
Students describe ways organisms depend upon, interact within, and change the living and non-living environment as well as ways the environment affects organisms.	
a. Explain how changes in an organism's habitat can influence its survival.	Habitats Adaptations Interdependence

b. Describe that organisms all over the Earth are living, dying, and decaying and new organisms are being produced by the old ones.	
c. Describe some of the ways in which organisms depend on one another, including animals carrying pollen and dispersing seeds.	Interdependence Food Chains Plant Reproduction
d. Explain how the food of most animals can be traced back to plants and how animals use food for energy and repair.	Food Chains
e. Explain how organisms can affect the environment in different ways.	Habitats Adaptations Interdependence Pollution
E3 Cells: Pre-K-2	
Students describe parts and wholes of living things, their basic needs, and the structures and processes that help them stay alive.	
a. List living things and their parts that are so small we can only see them using magnifiers.	Microorganisms
b. List the basic things that most organisms need to survive.	Living Things
c. Identify structures that help organisms do things to stay alive.	Living Things Growing Plants
E3 Cells: Grades 3-5	
Students describe how living things are made up of one or more cells and the ways cells help organisms meet their basic needs.	
a. Give examples of organisms that consist of a single cell and organisms that are made of a collection of cells.	Microorganisms
b. Compare how needs of living things are met in single-celled and multi-celled organisms.	
E4 Heredity and Reproduction: Pre-K-2	
Students describe the cycle of birth, development, and death in different organisms and the ways in which organisms resemble their parents.	
a. Give examples of how organisms are like their parents and not like them.	Growing Up
b. Describe the life cycle of a plant or animal (including being born, growing, reproducing, and dying).	Growing Up Growing Plants
E4 Heredity and Reproduction: Grades 3-5	
Students describe characteristics of organisms, and the reasons why organisms differ from or are similar to their parents.	
a. Name some likenesses between children and parents that are inherited, and some that are not.	

b. Explain that in order for offspring to look like their parents, information related to inherited likenesses must be handed from parents to offspring in a reliable manner.	
E5 Evolution: Pre-K-2	
Students describe similarities and differences between present day and past organisms that helped the organisms live in their environment.	
a. Describe some organisms' features that allow the organisms to live in places others cannot.	Adaptations
b. Explain how some kinds of organisms that once lived on Earth have completely disappeared, although they were similar to some that are alive today.	Fossils
E5 Evolution: Grades 3-5	
Students describe the fossil evidence and present explanations that help us understand why there are differences among and between present and past organisms.	
a. Explain advantages and disadvantages gained when some individuals of the same kind are different in their characteristics and behavior.	Adaptations
b. Compare fossils to one another and to living organisms according to their similarities and differences.	Fossils