									Science and Engineering Practices (SP / EP)							
Inv	**Inv Title**	**Part**	**Part Summary**	**Sessions**	**Content**	**NGSS Standards Addressed**	**Disciplinary Core Ideas (Framework)**	**Crosscutting Concepts**	**Asking questions (SP) / Defining problems (EP)**	**Developing and using models**	**Planning and carrying out investigations**	**Analyzing and interpreting data**	**Using mathematics and comp. thinking**	**Constructing explanations (SP) / Designing solutions (EP)**	**Engaging in argument from evidence**	**Obtaining, evaluating, and communicating information**
1	What Is Life?	**1**	**Living or Nonliving** Students observe the antics of a mysterious material when it is placed on water and record their observations. They work in groups to sort pictures of objects into living and nonliving categories, defining the characteristics that qualify objects as living. The pictures are displayed in class so that students can reevaluate their decisions as the course progresses. Students set up minihabitats for future study, using organic materials collected locally.	3	● Any free-living thing is an organism. ● All organisms exhibit common characteristics and have certain requirements: they grow, need energy (food) and water, exchange gases, respond to the environment,reproduce, eliminate waste, and need a suitable environment in which to live. ● Something can be dead only if it was once living.	MS-LS-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many differnt numbers and types of cells.	LS1-A (grade-band endpoint): Unicellular organisms (microorganisms), like multicellular organisms, need food, water, a way to dispose of waste, and an environment in which they can live. (MS-LS1)		**SP**					**SP**	**SP**	**SP**
1	What Is Life?	**2**	**Is Anything Alive in Here?** Students place five unidentified materials (sand, yeast, polyacrylate beads, radish seeds, and brine shrimp eggs) in different environments and observe what happens over several days. They determine if each material is living and record the evidence that supports their determinations. Students are introduced to the distinction between living, nonliving, dormant, and dead.	3	● Some organisms can become dormant to survive an unsuitable environment.	MS-LS-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many differnt numbers and types of cells.	LS1-A (grade-band endpoint): Unicellular organisms (microorganisms), like multicellular organisms, need food, water, a way to dispose of waste, and an environment in which they can live. (MS-LS1)		**SP**		**SP**	**SP**		**SP**	**SP**	**SP**
2	The Microscope	**1**	**Meet the Microscope** Students learn to handle and operate a microscope. They learn the parts of the microscope and the tools in the microscope kit. They observe print and simple objects to learn about image orientation. Students engage with a virtual microscope to reinforce care and use.	2	● A compound optical microscope is composed of a two-lens system (eyepiece and objective lens), a stage on which to mount the material being observed, a light source (lamp or reflected), and a focusing system. ● A microscope may reverse and invert images.			Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems. (MS-LS1-1)	**EP**	**SP**			**SP**			
2	The Microscope	**2**	**Field of View** Students are introduced to the concept of scale. They use small, transparent millimeter rulers to discover the diameter of the field of view at various magnifications. They use this information to estimate the size of two organisms at different magnifications. Practice with digital resources reinforces the skills learned.	2	● The field of view (FOV) is the diameter of the circle of light seen through the microscope. As the power increases, the FOV decreases. ● A microscope's optical power is the product of the magnification of the eyepiece and the objective lens.			Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural and designed structures/systems can be analyzed to determine how they function. (MS-LS1-2)	**EP**	**SP**			**SP**	**EP**		

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2	The Microscope	**3**	**Microscopic Life** Students use their microscopes to observe brine shrimp to confirm that they are living organisms. They estimate the size of the brine shrimp. This is the first opportunity for students to use the microscope to make scientific observations.	2	● The field of view (FOV) is the diameter of the circle of light seen through the microscope. As the power increases, the FOV decreases. ● A microscope's optical power is the product of the magnification of the eyepiece and the objective lens.			Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural and designed structures/systems can be analyzed to determine how they function. (MS-LS1-2)	**SP**	**SP**			**SP**		**SP**	
3	The Cell	**1**	**Discovering Cells** Students look at elodea and discover cells. They may also find something else in the water that they will identify as living, based on their definition.	2	● The cell is the basic unit of life. All living things are made up of one or more cells. ● Every cell has structures that enable it to carry out life's functions.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1) LS1.A: Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. (MS-LS1-2)	**SP**	**SP**			**SP**		**SP**	
3	The Cell	**2**	**Paramecia** Students start a detailed investigation into paramecium structures and behaviors. Students recognize paramecia as single-celled organisms.	2	● The cell is the basic unit of life. All living things are made up of one or more cells. ● Every cell has structures that enable it carry out life's functions. ● Both single-celled and multicellular organisms exhibit all the characteristics of life. ● Asexual reproduction is a method of reproduction that results in offspring with identical genetic information.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1) LS1.A: Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. (MS-LS1-2)	**SP**	**SP**			**SP**	**SP**	**SP**	
3	The Cell	**3**	**Microworlds** Students explore the minihabitats they created to appreciate the diversity in aquatic microorganisms. Students consider where life in the minihabitats came from and recognize that the organisms they observed were always present, only dormant.	1	● Both single-celled and multicellular organisms exhibit all the characteristics of life. ● Some organisms can become dormant to survive in an unsuitable environment.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1)	**SP**	**SP**			**SP**	**SP**		
3	The Cell	**4**	**Human Cheek Tissue** Students rub the interior surfaces of their cheeks, prepare wet mounts, and view the cheek tissue with microscopes. They see cells and discuss the relationship between cells and human beings.	3	● The cell is the basic unit of life. All living things are made up of one or more cells. ● Every cell has structures that enable it to carry out life's functions. ● Both single-celled and multicellular organisms exhibit all the characteristics of life.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1) LS1.A: Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. (MS-LS1-2)	**SP**	**SP**			**SP**	**SP**	**SP**	

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4	Domains	1	**Comparing Living Things** Students consider if they are most like bacteria, fungi, or archaea. They set up cultures of mold and bacteria to help explore that question. They prepare a spore print from a mushroom cap to observe in Part 3. Students determine that while cells are made of cell structures, those structures are made of even simpler components, molecules and atoms.	2	● Cells are made of cell structures, which are, in turn, made of molecules, which are made of atoms.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1) LS1.A: Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2) LS1.B: Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (MS-LS3-2)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. (MS-LS1-2)	**SP**	**SP**	**SP**		**SP**			**SP**
4	Domains	2	**Bacteria** Over the course of several days, students make observations of the cultures they started in Part 1. They look for evidence that bacteria are living organisms and find out more about the role bacteria play on Earth. Students sample various foods that bacteria had a part in creating. The structures and functions of bacterial cells are introduced as a way to help students consider how like bacteria they are.	3	● Bacteria, fungi, and archaea demonstrate all the characteristics of life.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1) LS1.A: Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2) LS1.B: Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (MS-LS3-2)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. (MS-LS1-2) Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems. (MS-LS1-1)	**SP**	**SP**	**SP**	**SP**	**SP**	**SP**	**SP**	**SP**
4	Domains	3	**Fungi** Students examine the bread mold cultures they prepared, eat samples of fungi or foods that were prepared using fungi, and learn more about fungal cell structures and functions.	2	● Bacteria, fungi, and archaea demonstrate all the characteristics of life.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1) LS1.A: Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. (MS-LS1-2)	**SP**	**SP**	**SP**	**SP**		**SP**	**SP**	**SP**
4	Domains	4	**Archaea: The Three Domains** The final contender for "most like humans" is introduced. Classification is used as a vehicle to understand why archaea are considered to be a unique group. Finally, students are prepared to choose which organism is most like humans.	3	● Bacteria, fungi, and archaea demonstrate all the characteristics of life. ● Life is classified into three different domains (Archaea, Bacteria, Eukaryota), depending upon cellular and molecular characteristics.	MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	LS1.A: All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1) LS1.A: Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (MS-LS1-2)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1) Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems. (MS-LS1-1)	**SP**	**SP**				**SP**	**SP**	**SP**
5	Plants: The Vascular System	1	**What Happened to the Water?** Students help design an investigation to find out what happens to the water when a stalk of celery sits in a vial of water overnight. They observe the results and consider where the water might have gone.	2	● Transpiration is the process by which water is carried through vascular plants from the roots to stomata, ensuring that all the cells have access to water.		LS1.A: In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3)		**SP**		**SP**	**SP**	**SP**	**SP**	**SP**	**SP**

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5	Plants: The Vascular System	**2**	**Looking at Plant Structures** Students observe that red food coloring flows through the vascular system of a celery stalk, turning the leaves and veins red. This suggests that water moves to the leaves and escapes. Students remove the xylem in celery and observe stomata in plant leaves. Students then set up a plastic bag to capture water as it exits a plant growing in the schoolyard.	2	● The vascular system of plants consists of xylem and phloem. ● Transpiration is the process by which water is carried through vascular plants from the roots to stomata, ensuring that all the cells have access to water.	MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	LS1.A: In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3)	Phenomena that can be observed at one scale may not be observable at another scale. (MS-LS1-1)	**SP**	**SP**	**SP**	**SP**		**SP**	**SP**	**SP**
5	Plants: The Vascular System	**3**	**Transpiration and Photosynthesis** Students collect the water captured in their plastic bag. This provides evidence that water, in the form of vapor, is escaping from the plant, most likely through the stomata. Students learn about the process of transpiration and turn their attention to how water is used in a plant to make food during photosynthesis. They are introduced to the levels of complexity in a multicellular organism.	4	● Transpiration is the process by which water is carried through vascular plants from the roots to stomata, ensuring that all the cells have access to water. ● The vascular system of plants consists of xylem and phloem. ● Plants use photosynthesis and aerobic cellular respiration to make usable energy from the Sun's energy. ● Cells are the building blocks of tissues, which are the building blocks of organs, which are the building blocks of organ systems, which are the building blocks of multicellular organisms.	MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.	LS1.A: In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3) LS1.C: Plants, algae (including phytoplankton), and many microorganisms use the energy from light to make sugars (food) from carbon dioxide from the atmosphere and water through the process of photosynthesis, which also releases oxygen. These sugars can be used immediately or stored for growth or later use. (MS-LS1-6) LS1.C: Within individual organisms, food moves through a series of chemical reactions in which it is broken down and rearranged to form new molecules, to support growth, or to release energy. (MS-LS1-7) PS3.D: The chemical reaction by which plants produce complex food molecules (sugars) requires an energy input (i.e., from sunlight) to occur. In this reaction, carbon dioxide and water combine to form carbon-based organic molecules and release oxygen. (secondary to MS-LS1-6) PS3.D: Cellular respiration in plants and animals involve chemical reactions with oxygen that release stored energy. In these processes, complex molecules containing carbon react with oxygen to produce carbon dioxide and other materials.	Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. (MS-LS1-3) Matter is conserved because atoms are conserved in physical and chemical processes. (MS-LS1-7) Within a natural system, the transfer of energy drives the motion and/or cycling of matter. (MS-LS1-6)	**SP**	**SP**				**SP**		**SP**
6	Plant Reproduction and Growth	**1**	**Lima Bean Dissection** Students soak a lima bean seed in warm water for a few minutes and then explore the structural adaptations of the seed to gather information about how a seed and newly germinated plant survive. Students add to their understanding that a dormant seed is alive.	1	● Flowering plants reproduce sexually, producing seeds, which contain dormant new plants.	MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	LS1.B: Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (secondary to MS-LS3-2)			**SP**	**SP**			**SP**		
6	Plant Reproduction and Growth	**2**	**Environmental and Genetic Factors** Students investigate how increasing salinity affects the germination and growth of food crops. They compare four grains (corn, wheat, barley, and oats) to determine that the different grains have varying levels of salt tolerance. This leads to a discussion on genetic factors.	2	● Environmental and genetic factors affect the germination and growth of plants.	MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	LS1.B: Genetic factors as well as local conditions affect the growth of the adult plant. (MS-LS1-5) LS1.B: Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (secondary to MS-LS3-2)	Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. (MS-LS1-4),(MS-LS1-5)	**SP**		**SP**	**SP**		**SP**	**SP**	**SP**
6	Plant Reproduction and Growth	**3**	**Flowering-Plant Reproduction** Students dissect flowers to learn about flower structures and sexual reproduction. They sequence the steps of pollination and fertilization. Students consider methods of reproduction that non-flowering plants use.	2	● Flowering plants reproduce sexually, producing seeds, which contain dormant new plants.	MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	LS1.B: In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3) LS1.B: Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (secondary to MS-LS3-2)		**SP**	**SP**	**SP**			**SP**	**SP**	**SP**
6	Plant Reproduction and Growth	**4**	**Flowers and Pollinators** Students review flowers, pollination, and seed formation. They examine pollinator-attracting characteristics of a flower to determine possible pollinators.	3	● Flowering plants have characteristics that attract pollinators to ensure successful pollination and reproduction and pollinators are attracted to flowers that meet their needs.	MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.	LS1.B: Animals engage in characteristic behaviors that increase the odds of reproduction. (MS-LS1-4) LS1.B: Plants reproduce in a variety of ways, sometimes depending on animal behavior and specialized features for reproduction. (MS-LS1-4)	Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. (MS-LS1-4),(MS-LS1-5)	**SP**	**SP**	**SP**	**SP**		**SP**	**SP**	**SP**

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7	Insects	**1**	**Structure, Function, and Behavior** Students observe Madagascar hissing cockroaches. After making initial observations of cockroach structures and behaviors, students focus on specific structure/function and behavior/function relationships.	3	● The structures and behaviors of an organism have functions that enhance the organism's chances to survive and reproduce in its habitat.			Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. (MS-LS1-3)	**SP**	**SP**		**SP**			**SP**	**SP**
7	Insects	**2**	**Insect Systems** Students review the levels of complexity. They use online activities to compare the insect circulatory system to the plant vascular system and the human cardiovascular (circulatory) system.	1	● Cells are the building blocks of tissues, which are the building blocks of organs, which are the building blocks of organ systems, which are the building blocks of multicellular organisms. ● Insects have open circulatory systems that transport substances to and away from their cells.	MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	LS1.A: In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3)	Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. (MS-LS1-3)	**SP**	**SP**		**SP**		**SP**		**SP**
8	Diversity of Life	**1**	**Bioblitz** Students watch Secret Garden, a video that takes an amusing look at the life that exists "behind the scenes" in a British yard. Students explore their own locale to collect plants and animals and discover the unexpected diversity of life that exists.	4	● Biodiversity is the variety of life that exists in a particular habitat or ecosystem. ● Measuring biodiversity includes measuring both the variety of organisms and the number of organisms in a habitat or ecosystem.		LS2.C: Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health. LS4.D: Biodiversity is the wide range of existing life forms that have adapted to the variety of conditions on Earth, from terrestrial to marine ecosystems.		**SP**	**SP**					**SP**	**SP**
8	Diversity of Life	**2**	**What Is Life?** Students examine their Living/Nonliving class cards and find that there is one card that they have not been able to consider, the rhinovirus. They think about their own prior knowledge and then explore viruses in order to determine whether viruses are living organisms.	4	● Scientific debate regarding whether viruses are living is ongoing. ● All life on Earth is related.			Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems. (MS-LS1-1)	**SP**	**SP**				**SP**	**SP**	**SP**