Indiana Department of Education

Earth and Science Content Connectors

Science and Engineering Process Standards (SEPS)

The Science and Engineering Process Standards are the processes and skills that students are expected to learn and be able to do within the context of the science content. The separation of the Science and Engineering Process Standards from the Content Standards is intentional; the separation of the standards explicitly shows that what students are doing while learning science is extremely important. The Process Standards reflect the way in which students are learning and doing science and are designed to work in tandem with the science content, resulting in robust instructional practice.

Science and Engineering Process Standards		Content Connectors
SEPS.1 Posing questions (for science) and defining problems (for engineering)	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.	A practice of science is posing and refining questions that lead to descriptions and explanations of how the natural and designed world(s) work and these questions can be scientifically tested. Engineering questions clarify problems to determine criteria for possible solutions and identify constraints to solve problems about the designed world.

SEPS.2 Developing and using models and tools	A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models. Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.	A practice of both science and engineering is to use and construct conceptual models that illustrate ideas and explanations. Models are used to develop questions, predictions and explanations; analyze and identify flaws in systems; build and revise scientific explanations and proposed engineered systems; and communicate ideas. Measurements and observations are used to revise and improve models and designs. Models include, but are not limited to: diagrams, drawings, physical replicas, mathematical representations, analogies, and other technological models. Another practice of both science and engineering is to identify and correctly use tools to construct, obtain, and evaluate questions and problems. Utilize appropriate tools while identifying their limitations. Tools include, but are not limited to: pencil and paper, models, ruler, a protractor, a calculator, laboratory equipment, safety gear, a spreadsheet, experiment data collection software, and other technological tools.

SEPS.3 Constructing and performing investigations	Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.	Scientists and engineers are constructing and performing investigations in the field or laboratory, working collaboratively as well as individually. Researching analogous problems in order to gain insight into possible solutions allows them to make conjectures about the form and meaning of the solution. A plan to a solution pathway is developed prior to constructing and performing investigations. Constructing investigations systematically encompasses identified variables and parameters generating quality data. While performing, scientists and engineers monitor and record progress. After performing, they evaluate to make changes to modify and repeat the investigation if necessary.
SEPS.4 Analyzing and interpreting data	Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: "Does this make sense?" "Could my results be duplicated?" and/or "Does the design solve the problem with the given constraints?"	Investigations produce data that must be analyzed in order to derive meaning. Because data patterns and trends are not always obvious, scientists and engineers use a range of tools to identify the significant features in the data. They identify sources of error in the investigations and calculate the degree of certainty in the results. Advances in science and engineering makes analysis of proposed solutions more efficient and effective. They analyze their results by continually asking themselves questions; possible questions may be, but are not limited to: "Does this make sense?" "Could my results be duplicated?" and/or "Does the design solve the problem with the given constraints?"

SEPS.5 Using mathematics and computational thinking	In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	In both science and engineering, mathematics and computation are fundamental tools for representing physical variables and their relationships. They are used for a range of tasks such as constructing simulations; solving equations exactly or approximately; and recognizing, expressing, and applying quantitative relationships. Mathematical and computational approaches enable scientists and engineers to predict the behavior of systems and test the validity of such predictions. Scientists and engineers understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
SEPS.6 Constructing explanations (for science) and designing solutions (for engineering)	Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.	Scientists and engineers use their results from the investigation in constructing descriptions and explanations, citing the interpretation of data, connecting the investigation to how the natural and designed world(s) work. They construct or design logical coherent explanations or solutions of phenomena that incorporate their understanding of science and/or engineering or a model that represents it, and are consistent with the available evidence.

SEPS.7 Engaging in argument from evidence	Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.	Scientists and engineers use reasoning and argument based on evidence to identify the best explanation for a natural phenomenon or the best solution to a design problem. Scientists and engineers use argumentation, the process by which evidence-based conclusions and solutions are reached, to listen to, compare, and evaluate competing ideas and methods based on merits. Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to evaluate claims.
SEPS.8 Obtaining, evaluating, and communicating information	Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.	Scientists and engineers need to be communicating clearly and articulating the ideas and methods they generate. Critiquing and communicating ideas individually and in groups is a critical professional activity. Communicating information and ideas can be done in multiple ways: using tables, diagrams, graphs, models, and equations, as well as, orally, in writing, and through extended discussions. Scientists and engineers employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.

Content Standards

Indiana Earth and Space Science	Content Connectors

Standar d 1: The Univers	**ES.1.1** Construct an explanation detailing how space can be studied by observing all frequencies of the electromagnetic radiation with differentiated telescopes and observational tools.	**ES.1.1.a.1** Construct an explanation detailing how space can be studied by observing all frequencies of the electromagnetic radiation with differentiated telescopes and observational tools.

For the high school science courses, the content standards are organized around the core ideas in each particular course. Within each core idea are indicators which serve as the more detailed expectations within each of the content areas.

	ES.1.2 Describe the expanding universe theory, also known as the "Big Bang Theory," based on observed astronomical evidence including: The Doppler Effect, red shift, Hubble's Law, and the cosmic microwave background.	**ES.1.2.a.1** Describe the expanding universe theory, also known as the "Big Bang Theory," based on observed astronomical evidence including: The Doppler Effect, red shift, Hubble's Law, and the cosmic microwave background.
	ES.1.3 Create a diagram, flowchart, or written explanation that details the cooling of energy into protons and early elements, and early elements into superstars and galaxies. Explain the role of gravitational attraction in the formation of stars and galaxies from clouds of these early elements.	**ES.1.3.a.1** Create a diagram, flowchart, or written explanation that details the cooling of energy into protons and early elements, and early elements into superstars and galaxies.
		ES.1.3.a.2 Explain the role of gravitational attraction in the formation of stars and galaxies from clouds of these early elements.
	ES.1.4 Differentiate between the life cycles of stars of different masses found on the HertzsprungRussell Diagram. Differentiate between low, medium (including our sun), and high mass stars by what elements can be produced, and therefore whether or not they can achieve red giant phase or go supernova.	**ES.1.4.a.1** Differentiate between the life cycles of stars of different masses found on the Hertzsprung-Russell Diagram. Differentiate between low, medium (including our sun), and high mass stars by what elements can be produced, and therefore whether or not they can achieve red giant phase or go supernova.
	ES.1.5 Illustrate the hierarchical relationship and scales of stars, planetary systems including multiplestar systems, star clusters, galaxies, and galactic groups in the universe.	**ES.1.5.a.1** Illustrate the hierarchical relationship and scales of stars, planetary systems including multiple-star systems, star clusters, galaxies, and galactic groups in the universe.

Standard 2: The Solar System	**ES.2.1** Construct a flowchart with diagrams and descriptions outlining the nebular theory of solar system formation. Include the formation of one or more stars, planetesimals, protoplanets, Jovian and terrestrial planets, and other objects including satellites and small bodies.	**ES.2.1.a.**1 Construct a flowchart with diagrams and descriptions outlining the nebular theory of solar system formation. Include the formation of one or more stars, planetesimals, protoplanets, Jovian and terrestrial planets, and other objects including satellites and small bodies.
	ES.2.2 Describe the characteristics of the various kinds of objects in the solar system including planets, satellites, comets, asteroids, and protoplanets. Recognize that planets have been identified orbiting stars other than the sun, or exist outside of solar systems orbiting no sun at all. Describe the organization of our solar system including terrestrial and Jovian planets, asteroid belts, and the Oort Cloud.	**ES.2.2.a.1** Describe the characteristics of the various kinds of objects in the solar system including planets, satellites, comets, asteroids, and protoplanets.
		ES.2.2 .a.2 Describe the organization of our solar system including terrestrial and Jovian planets, asteroid belts, and the Oort Cloud.
		ES.2.2.a.3 Recognize that planets have been identified orbiting stars other than the sun, or exist outside of solar systems orbiting no sun at all.
	ES.2.3 Develop a model illustrating the layers and life span of the sun. Explain how nuclear fusion in the core produces elements and energy, which are both retained through convection and released to space, including Earth, through radiation. Additionally, elements heavier than iron cannot form in stars, and form only as a result of supernovae.	**ES.2.3.a.1** Develop a model illustrating the layers and life span of the sun.
		ES.2.3.a.2 Explain how nuclear fusion in the core of the sun produces elements and energy, which are both retained through convection and released to space, including Earth, through radiation.
	ES.2.4 Use mathematical and/or computational representations to demonstrate the motions of the various kinds of objects in our solar system including planets, satellites, comets, and asteroids. Explain that Kepler's Laws determine the orbits of those objects and know that Kepler's Laws are a direct consequence of Newton's Law of Universal Gravitation together with his laws of motion.	**ES.2.4.a.1** Use mathematical and/or computational representations to demonstrate the motions of the various kinds of objects in our solar system including planets, satellites, comets, and asteroids.
		Explain that Kepler's Laws determine the orbits of those objects and know that Kepler's Laws are a direct consequence of Newton's Law of Universal Gravitation together with his laws of motion.

	ES.2.5 Explain how scientific theory changes over time with the introduction of new information and observational data. Use works from ancient Greeks such as Ptolemy, and other astronomers including Copernicus, Brahe, Kepler, and Galileo to demonstrate the effect of observational data and scientific discussion on our understanding of the mechanics and motion of our solar system.	**ES.2.5.a.1** Explain how scientific theory changes over time with the introduction of new information and observational data. Use works from ancient Greeks such as Ptolemy, and other astronomers including Copernicus, Brahe, Kepler, and Galileo to demonstrate the effect of observational data and scientific discussion on our understanding of the mechanics and motion of our solar system.

Standard 3: Earth Cycles and Systems	**ES.3.1** Create flowcharts that show the exchange of carbon and oxygen between the lithosphere, hydrosphere, biosphere, and atmosphere, including carbon dioxide and methane. Explain how human activities such as farming and industry, temperature change in oceans, and natural processes such as volcanic eruptions can speed or slow the cycling from reservoirs within the solid earth and oceans into the atmosphere.	**ES.3.1.a.1** Create flowcharts that show the exchange of carbon and oxygen between the lithosphere, hydrosphere, biosphere, and atmosphere, including carbon dioxide and methane.
		ES.3.1.a.2 Explain how human activities such as farming and industry, temperature change in oceans, and natural processes such as volcanic eruptions can
		speed or slow the cycling from reservoirs within the solid earth and oceans into the atmosphere.
	ES.3.2 Create diagrams and flowcharts that show the cycling between the lithosphere, hydrosphere, biosphere, and atmosphere for nitrogen. Complete the same for phosphorus, excluding the atmosphere. Explain how human activities can alter the amounts of both phosphorus and nitrogen between these layers.	**ES.3.2.a.1** Create diagrams and flowcharts that show the cycling between the lithosphere, hydrosphere, biosphere, and atmosphere for nitrogen. Complete the same for phosphorus, excluding the atmosphere.
		ES.3.2.a.2 Explain how human activities can alter the amounts of both phosphorus and nitrogen between the lithosphere, hydrosphere, biosphere, and atmosphere.
	ES.3.3 Analyze and explain how events on one side of the world can alter temperature and precipitation around the globe. Analyze and explain the possible	**ES.3.3.a.1** Analyze and explain how events on one side of the world can alter temperature and precipitation around the globe.

	effects of natural and human-driven processes on our atmosphere and climate.	**ES.3.3.a.2** Analyze and explain the possible effects of natural and human-driven processes on our atmosphere and climate.
	ES.3.4 Evaluate the use of sustainable versus nonrenewable resources. Explain the consequences of overuse and continued increased consumption of limited resources. Analyze and evaluate the benefits of researching, designing, and developing sustainable resources for private use and industry.	**ES.3.4.a.1** Evaluate the use of sustainable versus nonrenewable resources. Explain the consequences of overuse and continued increased consumption of limited resources.
		ES.3.4.a.2 Analyze and evaluate the benefits of researching, designing, and developing sustainable resources for private use and industry.

Standard 4: The Atmosphere	**ES.4.1** Create a model that shows the composition, distribution, and circulation of gases in Earth's atmosphere. Show how carbon and oxygen cycles affect the composition through gas exchange with organisms, oceans, the solid earth, and industry.	**ES.4.1.a.1** Create a model that shows the composition, distribution, and circulation of gases in Earth's atmosphere. Show how carbon and oxygen cycles affect the composition through gas exchange with organisms, oceans, the solid earth, and industry.

	ES.4.2 Create models to demonstrate the circulation, retention, and reflection of heat in regards to the atmosphere, solid land, and bodies of water including lakes and oceans. Demonstrate the effects of cities, various terrain, cloud cover, sea ice, and open water on albedo. Examine local and global heat exchanges, including land & sea breezes, lake effects, urban heat islands, and thermohaline circulation.	**ES.4.2.a.1** Create models to demonstrate the circulation, retention, and reflection of heat in regard to the atmosphere, solid land, and bodies of water including lakes and oceans. Demonstrate the effects of cities, various terrain, cloud cover, sea ice, and open water on albedo. Examine local and global heat exchanges, including land & sea breezes, lake effects, urban heat islands, and thermohaline circulation.
	ES.4.3 Create a presentation that demonstrates the process of the water cycle on both local and global scales. Illustrate the process of water cycling both from the solid earth to the atmosphere and around the solid earth. Examine the interaction of ground	**ES.4.3.a.1** Create a presentation that demonstrates the process of the water cycle on both local and global scales. Illustrate the process of water cycling both from the solid earth to the atmosphere and around the solid earth.

	water, surface water, and ocean circulation. Illustrate the effects of human activity on water systems.	**ES.4.3.a.2** Examine the interaction of ground water, surface water, and ocean circulation. Illustrate the effects of human activity on water systems.
	ES.4.4 Create a model to demonstrate how the Coriolis Effect influences the global circulation of the atmosphere. Explain how changes in the circulation of the atmosphere and oceans can create events such as El Niño and La Niña.	**ES.4.4.a.1** Create a model to demonstrate how the Coriolis Effect influences the global circulation of the atmosphere. Explain how changes in the circulation of the atmosphere and oceans can create events such as El Niño and La Niña.
	ES.4.5 Chart and explain the changes in weather as it relates to humidity, air pressure, and temperature. Explain how these factors result in local wind patterns and cloud cover. Explain the origin, life cycle, and behavior of weather systems, especially severe weather. Create an emergency plan for severe storms, both summer and winter.	**ES.4.5.a.1** Chart and explain the changes in weather as it relates to humidity, air pressure, and temperature. Explain how these factors result in local wind patterns and cloud cover.
		ES.4.5.a.2 Explain the origin, life cycle, and behavior of weather systems, especially severe weather.
		ES.4.5.a.3 Create an emergency plan for severe storms, both summer and winter.
	ES.4.6 Differentiate between weather and climate. Examine long term, natural climate change and periods of glaciation as influenced by Milankovitch Cycles due to the gravity of other solar system bodies (obliquity and precession of axis and eccentricity of orbit). Explain how these are different from any	**ES.4.6.a.1** Differentiate between weather and climate.
		ES.4.6.a.2 Examine long term, natural climate change and periods of glaciation as influenced by Milankovitch Cycles due to the gravity of other solar
	short term (less than thousands of years) changes to climate.	system bodies (obliquity and precession of axis and eccentricity of orbit). Explain how these are different from any short term (less than thousands of years) changes to climate.
	ES.4.7 Create diagrams or models to demonstrate the effect of the gravitational pull of the sun and moon on Earth's oceans. Explain the difference between	**ES.4.7.a.1** Explain the difference between daily (high and low) tides and monthly (spring and neap) tides.

	daily (high and low) tides and monthly (spring and neap) tides. Explain how monthly tides relate to the revolution of the moon, and therefore, its phases.	**ES.4.7.a.2** Create diagrams or models to demonstrate the effect of the gravitational pull of the sun and moon on Earth's oceans.
		ES.4.7.a.3 Explain how monthly tides relate to the revolution of the moon, and therefore, its phases.

Standard 5: The Solid Earth	**ES.5.1** Construct a lab to analyze minerals based on their physical and chemical properties. Explain how rocks may contain many minerals, one mineral, or no minerals, and minerals can be made of either single elements (such as gold) or compounds (such as silicates).	**ES.5.1.a.1** Construct a lab to analyze minerals based on their physical and chemical properties. Explain how rocks may contain many minerals, one mineral, or no minerals, and minerals can be made of either single elements (such as gold) or compounds (such as silicates).
	ES.5.2 Create a rock cycle flowchart or diagram that demonstrates the processes involved in the formation, breakdown, and reformation of igneous, sedimentary, and metamorphic rock. Show how each type can melt and reform igneous rock, undergo the various metamorphic processes, and undergo physical and chemical weathering to form sedimentary rock.	**ES.5.2.a.1** Create a rock cycle flowchart or diagram that demonstrates the processes involved in the formation, breakdown, and reformation of igneous, sedimentary, and metamorphic rock. Show how each type can melt and reform igneous rock, undergo the various metamorphic processes, and undergo physical and chemical weathering to form sedimentary rock.
	ES.5.3 Construct a model that demonstrates the difference between weathering, erosion, transportation of material, deposition, and new soil and sedimentary rock formation. Differentiate between types of physical and chemical weathering.	**ES.5.3.a.1** Construct a model that demonstrates the difference between weathering, erosion, transportation of material, deposition, and new soil and sedimentary rock formation. Differentiate between types of physical and chemical weathering.
	ES.5.4 Differentiate between relative and absolute geological time. Detail how sedimentary rock can be	**ES.5.4.a.1** Differentiate between relative and absolute geological time.
	dated based on relative-age dating and positioning, while igneous formations can be radiometrically dated. Differentiate between radiocarbon dating used for organic materials and other types of radiometric dating for inorganic rock formation.	**ES.5.4.a.2** Detail how sedimentary rock can be dated based on relative-age dating and positioning, while igneous formations can be radiometrically dated.
		ES.5.4.a.3 Differentiate between radiocarbon dating used for organic materials and other types of radiometric dating for inorganic rock formation.

	ES.5.5 Create a timeline detailing the processes that have occurred in Indiana to create mostly sedimentary bedrock. Explain how changing sea levels, climate, and glaciation have shaped Indiana geology.	**ES.5.5.a.1** Create a timeline detailing the processes that have occurred in Indiana to create mostly sedimentary bedrock. Explain how changing sea levels, climate, and glaciation have shaped Indiana geology.
	ES.5.6 Create models or diagrams to show how plate movement and sea level changes have changed continental land masses over time. Include the creation and destruction of inland seas, sedimentary rock formations including evaporites and biochemical formations, and the shaping and destruction of surface features.	**ES.5.6.a.1** Create models or diagrams to show how plate movement and sea level changes have changed continental land masses over time. Include the creation and destruction of inland seas, sedimentary rock formations including evaporites and biochemical formations, and the shaping and destruction of surface features.

Standard 6: Earth Processes	**ES.6.1** Construct a diagram or model that identifies and describes the physical and chemical properties of the crust, mantle, outer core, and inner core of Earth.	**ES.6.1.a.1** Construct a diagram or model that identifies and describes the physical and chemical properties of the crust, mantle, outer core, and inner core of Earth.
	ES.6.2 Explain how Earth's fluid outer core creates the magnetosphere and how this helps protect both humans and technology (such as satellites) from solar winds.	**ES.6.2.a.1** Explain how Earth's fluid outer core creates the magnetosphere.
		ES.6.2.a.2 Explain how the magnetosphere helps protect both humans and technology (such as satellites) from solar winds.
	ES.6.3 Construct a diagram and explanation showing the convection of Earth's mantle and its impact on the movements of tectonic plates. Explain how the	**ES.6.3.a.1** Construct a diagram and explanation showing the convection of Earth's mantle and its impact on the movements of tectonic plates.

	decay of radioactive isotopes and residual energy from Earth's original formation provide the heat to fuel this convective process, which, along with ridge push and slab pull, drive the movements of tectonic plates.	**ES.6.3.a.2** Explain how the decay of radioactive isotopes and residual energy from Earth's original formation provide the heat to fuel this convective process, which, along with ridge push and slab pull, drive the movements of tectonic plates.
	ES.6.4 Create a timeline to show the development of modern tectonic plate theory. Identify and explain how the evidence from the theory of continental drift, seafloor spreading, and paleomagnetism built upon each other to support tectonic plate theory.	**ES.6.4.a.1** Create a timeline to show the development of modern tectonic plate theory. Identify and explain how the evidence from the theory of continental drift, seafloor spreading, and paleomagnetism built upon each other to support tectonic plate theory.
	ES.6.5 Create models that demonstrate different types of orogeny resulting from plate tectonics. Show how the interactions between oceanic and continental plates create different geological features (such as volcanic island arcs or high altitude plateaus) depending on what types of plates are involved in the motions along different plate boundaries.	**ES.6.5.a.1** Create models that demonstrate different types of orogeny resulting from plate tectonics. Show how the interactions between oceanic and continental plates create different geological features (such as volcanic island arcs or high altitude plateaus) depending on what types of plates are involved in the motions along different plate boundaries.
	ES.6.6 Create models and differentiate between shield, composite, and cinder cone volcanoes. Explain how volcanoes form, how the chemical composition of lava affects the type of volcanoes formed, and how the location (such as hot spots or along continental or oceanic margins) can affect the types of magma present.	**ES.6.6.a.1** Create models and differentiate between shield, composite, and cinder cone volcanoes. Explain how volcanoes form, how the chemical composition of lava affects the type of volcanoes formed, and how the location (such as hot spots or along continental or oceanic margins) can affect the types of magma present.
	ES.6.7 Use models, diagrams, and captions to explain how tectonic motion creates earthquakes and tsunamis. Using resources such as indianamap.org, analyze how close the school is to known faults and liquefaction potential. Differentiate between intraplate fault zones such as the Wabash Valley	**ES.6.7.a.1** Use models, diagrams, and captions to explain how tectonic motion creates earthquakes and tsunamis.
		ES.6.7.a.2 Using resources such as indianamap.org, analyze how close the school is to known faults and liquefaction potential.

	Fault System and the more commonly discussed faults along tectonic margins.	**ES.6.7.a.3** Differentiate between intraplate fault zones such as the Wabash Valley Fault System and the more commonly discussed faults along tectonic margins.
	ES.6.8 Create an action plan detailing what to do in an emergency if an earthquake occurred near the school or home. Detail what should be kept in an earthquake preparation kit, how to prepare homes for earthquake safety, and what actions should be taken during and after an earthquake to ensure personal safety.	**ES.6.8.a.1** Create an action plan detailing what to do in an emergency if an earthquake occurred near the school or home. Detail what should be kept in an earthquake preparation kit, how to prepare homes for earthquake safety, and what actions should be taken during and after an earthquake to ensure personal safety.