

ELL CO-OP PLC WIDA/GSE Alignment Project

Earth/Space Science

ESS1 The Earth and Earth materials, as we know them today, have developed over long periods of time, through constant change processes.

S:ESS1:8:2.2	COMPOSITION AND FEATURES: Use geological evidence provided to support the idea that Earth's crust/lithosphere is composed of plates that move.
Level 1 Entering	Cut out and label the seven continents from a map of the present-day world; rearrange them to show the world in the mid Mesozoic era, and then show how the continents moved apart.
Level 2 Beginning	Match descriptive sentences to the appropriate mid Mesozoic era or present-day map (e.g., <i>Continents are together; Continents are apart</i>).
Level 3 Developing	Identify diagrams of different types of plate movement from oral descriptions (e.g., <i>Plates collide</i> or <i>Plates move apart</i>); then write a sentence to describe each diagram, using a word bank.
Level 4 Expanding	Discuss in a small group, with the support of maps, why earthquakes and volcanoes occur at the boundaries of tectonic plates; then report conclusions to the entire class.
Level 5 Bridging	Write an essay explaining the relationship between the locations of recurring earthquakes and volcanoes and the boundaries of tectonic plates, using technical language with the support of a word bank.

S:ESS1:8:5.2	PROCESSES AND RATES OF CHANGE: Explain how Earth events, abruptly and over time, can bring about changes on Earth's surface (e.g., landforms, ocean floor, rock features, climate).
Level 1 Entering	Sort pictures of Earth events (e.g., earthquakes, volcanoes, tsunamis, tornadoes, wildfires, erosion) into <i>Abrupt/Sudden</i> or <i>Over Time</i> , given examples.
Level 2 Beginning	Label pictures of Earth events (e.g., earthquakes, volcanoes, tsunamis, tornadoes, wildfires, erosion, climate change), and match them with pictures showing the same area after the Earth event.
Level 3 Developing	Compare <i>Before</i> and <i>After</i> pictures of an Earth event (e.g., earthquakes, volcanoes, tsunamis, tornadoes, wildfires, erosion, climate change); then write an explanation of how the event changed the Earth's surface, in pairs.
Level 4 Expanding	Predict how the Earth's surface will change if an Earth event (e.g., earthquakes, volcanoes, tsunamis, tornadoes, wildfires, erosion, climate change) occurs in a location shown in a picture, in a small group.
Level 5 Bridging	Conduct research about the fall of the Old Man of the Mountain and draw conclusions about the reasons for its fall.

S:ESS1:8:5.3	PROCESSES AND RATES OF CHANGE: Explain the role of differential heating or convection in ocean currents, winds, weather and weather patterns, atmosphere, or climate.
Level 1 Entering	Draw the ocean currents on a world map, using a textbook or the internet as a resource; then draw arrows showing the directions of the currents; choose the correct sentence to tell how ocean currents flow (e.g., <i>Currents flow to the north; Current flow to the south; Currents flow away from the equator.</i>)
Level 2 Beginning	Draw the ocean currents on a world map, using a textbook or the internet as a resource; then draw arrows showing the directions of the currents; write a sentence that tells how the currents flow (e.g., <i>Currents flow away from the equator</i> or <i>Currents flow toward the poles</i>).
Level 3	Draw the ocean currents on a world map, using a textbook or the internet as a

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Developing	resource; then draw arrows showing the directions of the currents; in a small group, explain why the currents flow the way they do.
Level 4 Expanding	Discuss with a partner how ocean currents are formed; then summarize the discussion in a written paragraph.
Level 5 Bridging	Complete a graphic organizer (e.g., 2-column notes) from an audio-visual source (e.g., video or online applet) about the role of differential heating or convection in currents and/or weather patterns.

S:ESS1:8:6. 4	ROCKS: Using data about a rock's physical characteristics, make and support an inference about the rock's history and connection to the rock cycle.
Level 1 Entering	Match descriptive words to pictures of rocks or rock samples (i.e. <i>shiny, with layers, holes, etc.</i>).
Level 2 Beginning	Identify and sort rocks from the teacher's oral description, given rock samples and a graphic organizer that includes the characteristics for each type of rock (igneous, sedimentary, metamorphic).
Level 3 Developing	Present an oral report on a rock sample, stating its type and physical characteristics, with a partner.
Level 4 Expanding	List the physical characteristics of the three major kinds of rocks (igneous, sedimentary, metamorphic), in a small group. Identify the type and discuss the history of three rock samples.
Level 5 Bridging	Infer from what stage in the rock cycle a sample rock came using its physical characteristics; explain the rock's history in writing, including details to support the inference made, given a diagram of the rock cycle.

S:ESS1:8:7. 3	WATER: Explain the processes that cause cycling of water into and out of the atmosphere and their connections to our planet's weather patterns.
Level 1 Entering	Draw a picture of the water cycle and label the processes that cause it (<i>evaporation, condensation, precipitation</i>), using a word bank.
Level 2 Beginning	Draw a picture of the water cycle, label the processes that cause it (<i>evaporation, condensation, precipitation</i>), using a word bank if necessary, and describe to a partner what happens during each process.
Level 3 Developing	Match scientific terms (e.g., <i>run-off, ground water</i>) to a diagram of the water cycle.
Level 4 Expanding	Discuss in a small group and then write a report that explains phenomena such as the rain shadow in terms of the water cycle.
Level 5 Bridging	Create Frayer models of vocabulary such as <i>condensation, evaporation</i> , based on teacher-led discussion, video clips, the overhead projector, and other visual supports.

ESS2 The Earth is part of a solar system, made up of distinct parts, which have temporal and spatial interrelationships.

S:ESS2:8: 1.4	EARTH, SUN, AND MOON: Explain the temporal or positional relationships between or among the Earth, Sun and Moon (e.g., night/day, seasons, year, tide).
Level 1 Entering	Follow teacher's oral directions for using models of the sun and Earth to show the relative positions of the Earth for day and night, and for summer and winter.
Level 2 Beginning	Match pictures of day/night, winter/spring/summer/fall, and high/low tide with labeled drawings of the earth's rotation, the earth's tilt and revolution around the sun, and the moon's revolution around the earth, with a partner.
Level 3	Read a simple article about the seasons; then do a Cloze activity, in pairs, based

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Developing	on the article.
Level 4 Expanding	Discuss in a small group how the positions of the Earth, sun, and moon create day and night, seasons of the year, and tides, using manipulatives; then write a short paragraph summarizing each relationship.
Level 5 Bridging	Write short essays, using diagrams, explaining how the positions of the Earth, sun, and moon create day and night, seasons of the year, and tides.

ESS3 The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time.

S:ESS2:8:3.4	SOLAR SYSTEM: Compare and contrast planets based on data provided about size, composition, location, orbital movement, atmosphere, or surface features (includes moons).
Level 1 Entering	Color, cut out, and paste on a register tape the 8 planets in order, with a partner and using a reference sheet.
Level 2 Beginning	Make ordered graphs of planets, by size, distance from the sun, and length of orbit/year, with a partner and using reference sheets.
Level 3 Developing	Create a Venn diagram, in a small group, to compare and contrast the composition of the planets, using data from the eighth grade science NECAP exam.
Level 4 Expanding	Compare and contrast the Earth with either Mercury or Neptune, in a small group, using data supplied by the teacher; then individually write two paragraphs summarizing the similarities and differences.
Level 5 Bridging	Produce a brochure in which you include data about any planet, other than Earth, on which you would most like to live; include a short essay in which you defend your choice.

S:ESS2:8:3.5	SOLAR SYSTEM: Explain how gravitational force affects objects in the Solar System (e.g., moons, tides, orbits, satellites).
Level 1 Entering	Complete an oral cloze activity, describing which objects are acted upon by the sun and the earth's gravity, following a teacher demonstration.
Level 2 Beginning	Act out, in groups of three, how the gravitational forces of the Earth, Moon, and Sun act on each of them to keep them in their places.
Level 3 Developing	Create a poster with captions, with a partner, showing how the moon affects tides.
Level 4 Expanding	Identify the main points from a passage in the textbook about how gravitational force affects objects in the Solar System, using two-column notes, with the first column provided by the teacher.
Level 5 Bridging	Explain in writing how gravity affects objects in the Solar System (e.g., planets, moons, satellites).

S:ESS2:8:4.1	VIEW FROM EARTH: Explain how technological advances have allowed scientists to re-evaluate or extend existing ideas about the Solar System.
Level 1 Entering	Match pictures of technological advances that have helped extend ideas about the Solar System (e.g., Hubble Telescope, Mars Rovers, communications satellites, space missions, etc.) with their names, using visual aids.
Level 2 Beginning	Create a poster, with a partner, showing various technological advances, using a handout or textbook; label the advances; present the poster to the class.
Level 3 Developing	Create a chart contrasting technological advances that extend our knowledge of the stars and the planets with those that improve life on Earth, using data provided by the teacher, with a partner.

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Level 4 Expanding	Research, with a partner and using the internet, a particular technological advance (e.g., Hubble Telescope, Mars Rovers, communications satellites, space missions); create and present a poster showing how this technological advance has helped extend knowledge about the Solar System.
Level 5 Bridging	Discuss in a written essay how one particular technological advance (e.g., Hubble Telescope, Mars Rovers, communications satellites, space missions) has helped scientists extend their ideas about the Solar System, using a textbook or the internet.

Life Science

LS1 All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).

S:LS1:8:1.2	CLASSIFICATION: Describe or compare how different organisms have mechanisms that work in a coordinated way to obtain energy, grow, move, respond, provide defense, enable reproduction, or maintain internal balance (e.g., cells, tissues, organs and systems).
Level 1 Entering	Draw pictures on a chart to show the differences between how plants and animals obtain energy, grow, and move, given examples.
Level 2 Beginning	List how a specific animal (e.g., human, fish, earthworm) obtains energy, grows, and moves, given a picture of the animal in its environment; share the list with others in a small group.
Level 3 Developing	Compare and contrast how different organisms (e.g., skunk and opossum) accomplish the same goals of providing defense or enabling reproduction in different ways, working in small groups and using a graphic organizer; share the graphic organizer with other groups.
Level 4 Expanding	Research, in a small group, how different organisms obtain energy, grow, move, provide defense, and enable reproduction; then complete a graphic organizer showing the information collected.
Level 5 Bridging	Summarize in a short composition how a particular organism maintains internal balance, using technical language, with the support of a word bank.

S:LS1:8:2.4	LIVING THINGS AND ORGANIZATION: Explain relationships between or among the structure and function of the cells, tissues, organs, and organ systems in an organism.
Level 1 Entering	Sequence labeled picture cards for <i>cell</i> , <i>tissue</i> , <i>organ</i> , and <i>organ system</i> .
Level 2 Beginning	Identify labeled picture cards of <i>cells</i> , <i>tissues</i> , <i>organs</i> , and <i>organ systems</i> that match descriptive phrases read aloud by a partner or the teacher (e.g., heart card goes with <i>An organ is a system of tissues working together</i>).
Level 3 Developing	Complete sentence frames, given a word bank of specific types of cells, tissues, organs, and systems (e.g., <i>The _____ work together to make up the circulatory system.</i>).
Level 4 Expanding	Describe, in writing or to a small group, the organization of a specific organ system such as the circulatory system, based on a diagram of the system, using the words <i>cell</i> , <i>tissue</i> , <i>organ</i> , and <i>organ system</i> .
Level 5 Bridging	Write a short essay explaining the relationship among the structure and function of cells, tissues, and organs, of two specific organ systems of the body (e.g., muscular and skeletal), and explain how they work together, with the support of diagrams and word banks.

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S:LS1:8:2.5	LIVING THINGS AND ORGANIZATION: Using data and observations about the biodiversity of an ecosystem, make predictions or draw conclusions about how the diversity contributes to the stability of the ecosystem.
Level 1 Entering	Label components of an ecosystem (e.g., a pond), given a picture, and draw arrows between interconnected parts, with the support of a word bank and working with a partner.
Level 2 Beginning	Compare pictures of stable and unstable ecosystems; then match each to a simple sentence explaining factors that could cause the change in stability (e.g., a healthy pond with a variety of plants and an unhealthy pond overgrown with one type of plant).
Level 3 Developing	Complete a graphic organizer about an ecosystem and the factors that influence it, from an oral description; then identify an appropriate conclusion regarding its stability, from multiple choices.
Level 4 Expanding	Discuss in a small group what happens when an essential component of an ecosystem is changed (e.g., the water temperature of a pond changes and kills the algae in the pond), using a picture of the ecosystem; then write a paragraph summarizing the discussion.
Level 5 Bridging	Predict in a written essay what will happen when a new predatory fish is introduced into a pond ecosystem, with the support of a word bank.

S:LS1:8:3.6	REPRODUCTION: Compare and contrast sexual reproduction with asexual reproduction.
Level 1 Entering	Label <i>cell</i> , <i>division</i> , <i>fertilization</i> , <i>asexual</i> , and <i>sexual</i> on diagrams of reproduction through cell division and reproduction through cell merging, with a partner.
Level 2 Beginning	Sequence descriptive sentences and diagrams according to the steps in mitosis and meiosis, in a small group.
Level 3 Developing	Complete a Venn diagram, with a partner, to compare and contrast features of sexual and asexual reproduction (e.g., cells merging vs. dividing; amount of time and energy needed, distribution of genetic material).
Level 4 Expanding	Write short sentences comparing and contrasting sexual and asexual reproduction (e.g., <i>Asexual reproduction is fast. Sexual reproduction is slow.</i>).
Level 5 Bridging	Discuss in a small group the advantages and disadvantages of each kind of reproduction; then write an individual short essay summarizing the discussion.

S:LS1:8:3.7	REPRODUCTION: Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring.
Level 1 Entering	Match traits that children in a family picture inherited from each parent (e.g., curly or straight hair; eye color; height, skin color) with the appropriate parent.
Level 2 Beginning	List, with a partner, traits that were inherited from the mother and traits inherited from the father (e.g., curly or straight hair; eye color; height, skin color), based on a family picture.
Level 3 Developing	Predict a child's eye color, hair color, or other trait, given a list of dominant and recessive traits and hypothetical parents, with the support of pictures.
Level 4 Expanding	Discuss in small groups data on blood types of a father and mother, supplied by the teacher, and predict what possible blood types their children might have.
Level 5 Bridging	Explain in writing what possible blood types children might have, based on data on the parents' blood types (supplied by the teacher).

LS2 Energy flows and matter recycles through an ecosystem.

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S:LS2:8:1. 3	ENVIRONMENT: Using data and observations, predict outcomes when abiotic/biotic factors are changed in an ecosystem.
Level 1 Entering	Identify pictures from teacher's oral descriptions of effects of biotic/abiotic change (e.g., effect of lack of water on plants).
Level 2 Beginning	Give examples of how plants and animals respond to change in biotic/abiotic factors, such as fire, drought, or an oil spill.
Level 3 Developing	Compare and contrast an ecosystem before and after a change in biotic/abiotic factors, in small groups and with the support of pictures.
Level 4 Expanding	Chart data on the amount of water given to plants and the effect on the plants in a lab; draw conclusions with a partner.
Level 5 Bridging	Predict from data on monthly rainfall or temperature the effects on a given ecosystem.

S:LS2:8:2. 2	FLOW OF ENERGY: Given a scenario, trace the flow of energy through an ecosystem, beginning with the sun, through organisms in the food web, and into the environment (includes photosynthesis and respiration).
Level 1 Entering	Label features on a chart showing the flow of energy through an ecosystem, using a word bank.
Level 2 Beginning	Draw arrows to show the flow of energy on a chart and match with a simple description of each stage, with a partner.
Level 3 Developing	Provide a description of a simple ecosystem (e.g., for a pond: <i>Fish eat microorganisms, birds eat fish, larger birds eat smaller birds</i>), from an illustration.
Level 4 Expanding	Summarize orally or in writing a diagram showing the flow of energy (e.g., sun nourishes crops on a farm; cow eats grass; people drink milk and eat meat; people have energy).
Level 5 Bridging	Create a poster showing the flow of energy through an ecosystem, including photosynthesis and respiration; present the poster to the class.

S:LS2:8:3. 6	RECYCLING OF MATERIALS: Given an ecosystem, trace how matter cycles among and between organisms and the physical environment (includes water, oxygen, food web, decomposition and recycling, but not carbon cycle nor nitrogen cycle).
Level 1 Entering	Match labeled diagrams of how matter cycles (e.g., pictures of a hemlock tree, a deer eats the needles, dies, decomposes, humus forms, hemlock tree grows) with vocabulary from a word bank (e.g., <i>water, oxygen, food web, decomposition, recycling</i>).
Level 2 Beginning	Describe the phases of matter cycling from a diagram, using general language.
Level 3 Developing	Sequence descriptive sentences and diagrams according to how matter cycles.
Level 4 Expanding	Explain the role of specific vocabulary words (e.g., <i>water, oxygen, food web, decomposition, recycling</i>) in the process of matter cycling, with a partner.
Level 5 Bridging	Explain in writing how matter cycles among organisms and the physical environment, using words from a word bank.

LS3 Groups of organisms show evidence of change over time (e.g. evolution, natural selection, structures, behaviors, and biochemistry).

S:LS3:8:2. 3	EVIDENCE OF EVOLUTION: Use a model, classification system, or dichotomous key to illustrate, compare, or interpret possible relationships among groups of organisms (e.g., internal and external structures, anatomical features).
Level 1	Sort pictures of organisms based on similarity in structures or anatomical features

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Entering	(e.g., put groups of related organisms together), with a partner.
Level 2 Beginning	Identify features that groups of related organisms have in common (e.g., birds and reptiles laying eggs, reptiles and frogs laying eggs, mammals and birds warm blooded, etc.), with a partner.
Level 3 Developing	Compare and contrast various mammals using pictures of skeletons, in a small group.
Level 4 Expanding	Classify skulls (carnivore, herbivore) using a dichotomous key and models.
Level 5 Bridging	Give reasons why an organism belongs to a particular classification (e.g., why a whale is a mammal), given a chart of characteristics of mammals, reptiles, fish, and amphibians.

S:LS3:8:3.5	NATURAL SELECTION: Cite examples supporting the concept that certain traits of organisms may provide a survival advantage in a specific environment and therefore, an increased likelihood to produce offspring.
Level 1 Entering	Match pictures of bird beaks and food sources (e.g., which birds would eat seeds, worms, insects, nectar, frogs, mice, etc.).
Level 2 Beginning	Sort an illustrated list of animals according to the environment in which they would be most likely to survive (e.g., snakes in desert, spotted fawns in sunny forest, etc.), with a partner.
Level 3 Developing	Identify traits that allow certain organisms to survive in a specific environment, with a partner.
Level 4 Expanding	Discuss in a small group the relationship between traits that allow organisms to survive and the increased likelihood of producing offspring.
Level 5 Bridging	Explain, with examples, why certain traits of a particular organism may provide a survival advantage in a specific environment.

LS4 Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

S:LS4:8:2.4	DISEASE: Use data and observations to support the concept that environmental or biological factors affect human body systems (biotic and abiotic).
Level 1 Entering	Describe the effects of environmental factors (e.g., poison ivy, sunburn, bug bites and stings, a scratch) on the skin, with a partner and with the support of a word bank.
Level 2 Beginning	Create a poster, with a partner, showing environmental or biological factors that harm the human body (draw or collect and label pictures).
Level 3 Developing	Identify environmental factors that increase risk of disease (e.g., heart, liver, etc.) in a small group and with the support of charts, notes, etc.
Level 4 Expanding	Explain in a small group how smoking affects the respiratory system, or how drugs affect the neurological system.
Level 5 Bridging	Read and summarize a short article about how an environmental or biological factor affect the human body.

S:LS4:8:3.3	HUMAN IDENTITY: Describe the major changes that occur over time in human development from single cell through embryonic development to new born (i.e., group of cells during the first trimester, organs form during the second, organs mature during the third).
Level 1 Entering	Sequence pictures of embryo development over time, with a partner; then point out changes from the teacher's oral descriptions.
Level 2	Describe developmental changes from embryo to newborn (e.g., growth of organs),

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Beginning	from pictures, with a partner and a word bank.
Level 3 Developing	Create a poster, with a partner, that compares and contrasts embryos at each trimester of human development, and label changes (e.g., growth of organs).
Level 4 Expanding	Discuss in a small group the changes that occur over time in embryo development; write three short paragraphs summarizing the discussion.
Level 5 Bridging	Explain in an essay the changes that occur in human development over the nine months of gestation.

S:LS4:8:3.4	HUMAN IDENTITY: Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring.
Level 1 Entering	Match traits that children in a family picture inherited from each parent (e.g., curly or straight hair; eye color; height, skin color) with the appropriate parent.
Level 2 Beginning	List, with a partner, traits that were inherited from the mother and traits inherited from the father (e.g., curly or straight hair; eye color; height, skin color), based on a family picture.
Level 3 Developing	Predict a child's eye color, hair color, or other trait, given a list of dominant and recessive traits and hypothetical parents, with the support of pictures.
Level 4 Expanding	Discuss in small groups data on blood types of a father and mother, supplied by the teacher, and predict what possible blood types their children might have.
Level 5 Bridging	Explain in writing what possible blood types children might have, based on data on the parents' blood types (supplied by the teacher).

Physical Science

PS1 All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size/amount of substance).

S:PS1:8:1.6	COMPOSITION: Collect data or use data provided to infer or predict that the total amount of mass in a closed system stays the same, regardless of how substances interact (conservation of matter).
Level 1 Entering	Label a teacher-provided set of pictures showing a lab performed in class showing that matter is conserved (e.g., baking soda and vinegar), with a partner.
Level 2 Beginning	Match pictures depicting a lab performed in class showing matter that is conserved (e.g., baking soda and vinegar), to statements about the pictures.
Level 3 Developing	Engage in discussion (pair/share) about an activity that depicts the conservation of matter (e.g., baking soda and vinegar); then present a summary, including data, to the class.
Level 4 Expanding	Predict the results of an activity involving the conservation of matter (e.g., baking soda and vinegar), in a small group; use the data in graph or table form to evaluate the predictions.
Level 5 Bridging	Predict what will happen to matter when sugar is mixed with iced tea, after having done a salt and water solution activity; then explain the prediction in writing, using academic vocabulary and a graphic organizer.

S:PS1:8:1.7	Given graphic or written information, classify matter as atom/molecule or element/compound (not the structure of an atom).
Level 1 Entering	Identify orally a number of elements and a number of compounds (e.g., iron, salt, etc.), using real life objects.
Level 2	Create an atom and a molecule, with a partner, using gum drops; then state the

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Beginning	difference between them, using a graphic organizer.
Level 3 Developing	Classify materials as elements or compounds, atoms or molecules, given a list of common chemical formulas, the materials they represent, and the periodic table, in a small group.
Level 4 Expanding	Write a statement that explains the difference between an atom and a molecule, and an element and a compound, given a word bank.
Level 5 Bridging	Make a list of materials that are elements and another list of materials that are compounds; justify your decisions in writing, using a word bank.

S:PS1:8:2.4	PROPERTIES: Investigate the relationships among mass, volume and density.
Level 1 Entering	Identify orally the tools used to measure mass and volume; identify the units used to state mass and volume; match the terms <i>mass</i> and <i>volume</i> to the measuring activity performed, using an illustrated handout.
Level 2 Beginning	Describe orally how the properties of mass and volume change when additional air is blown into a balloon, with a partner and using a word bank.
Level 3 Developing	Write a short paragraph describing the difference between two objects of the same volume but different mass, after discussion with a partner and using a word bank.
Level 4 Expanding	Summarize in writing the steps and results of a lab involving displacement and density, using a word bank and with a partner.
Level 5 Bridging	Predict whether an object will float or sink, given its density, and justify your choice.

S:PS1:8:2.5	PROPERTIES: Given data about characteristic properties of matter (e.g., melting and boiling points, density, solubility), identify, compare, or classify different substances.
Level 1 Entering	Match teacher statements (e.g., <i>the melting point of water</i>), to illustrations of thermometers.
Level 2 Beginning	Sort actual substances based on some characteristic properties by putting the substances into pre-labeled groups (e.g. magnetic, dense, soluble), with a partner; then make lists of the substances in each group.
Level 3 Developing	Compare and contrast actual substances, based on their characteristic properties (e.g., magnetic/non-magnetic), to create a Venn diagram, working in small groups.
Level 4 Expanding	Classify substances and orally explain the common properties of each group (e.g., dense or not dense), working with a partner.
Level 5 Bridging	Explain in writing the reasons for classifying a substance as dense.

S:PS1:8:2.6	PROPERTIES: Represent or explain the relationship between or among energy, molecular motion, temperature, and states of matter.
Level 1 Entering	Match pictures of molecular motion with the words <i>solid</i> , <i>liquid</i> , and <i>gas</i> , using a poster as a resource,
Level 2 Beginning	Create a poster in pairs, showing how changes in the temperature of water change the state of matter and/or the molecular motion; then define orally the 3 states of matter.
Level 3 Developing	Associate an increase in temperature with a change in state, using a textbook or handout; then summarize in writing.
Level 4 Expanding	Role-play the activities of a molecule as temperature increases and decreases, in a small group, using academic vocabulary from a word bank.
Level 5 Bridging	Explain in writing the relationship among temperature, molecular motion, and states of matter.

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PS2 Energy is necessary for change to occur in matter. Energy can be stored, transferred and transformed, but cannot be destroyed.

S:PS2:8:1.5	CHANGE: Given a real-world example, show that within a system, energy transforms from one form to another (i.e., chemical, heat, electrical, gravitational, light, sound, mechanical).
Level 1 Entering	Label the kinds of energy shown in a drawing, using a word bank.
Level 2 Beginning	Draw an incandescent light bulb and complete a cloze telling about the changes in form.
Level 3 Developing	Discuss with a partner the different kinds of energy involved in ringing a doorbell, and how energy changes from one form to another.
Level 4 Expanding	Create a model of an energy system, with a partner, and describe it to the class, using academic vocabulary from a word bank.
Level 5 Bridging	Write a description of the changes in energy from one form to another in a particular system.

S:PS2:8:2.2	CONSERVATION: Collect data or use data provided to infer or predict that the total amount of mass in a closed system stays the same, regardless of how substances interact (conservation of matter).
Level 1 Entering	Label a teacher-provided set of pictures showing a lab performed in class showing that matter is conserved (e.g., baking soda and vinegar), with a partner.
Level 2 Beginning	Match pictures depicting a lab performed in class showing matter that is conserved (e.g., baking soda and vinegar), to statements about the pictures.
Level 3 Developing	Engage in discussion (pair/share) about an activity that depicts the conservation of matter (e.g., baking soda and vinegar); then present a summary, including data, to the class.
Level 4 Expanding	Predict the results of an activity involving the conservation of matter (e.g., baking soda and vinegar), in a small group; use the data in graph or table form to evaluate the predictions.
Level 5 Bridging	Predict what will happen to matter when sugar is mixed with iced tea, after having done a salt and water solution activity; then explain the prediction in writing, using academic vocabulary and a graphic organizer.

S:PS2:8:3.6	ENERGY: Use data to draw conclusions about how heat can be transferred (convection, conduction, radiation).
Level 1 Entering	Label the three kinds of heat transfer in a picture of a kitchen (e.g., stove: <i>conduction</i> ; fan: <i>convection</i> ; radiator: <i>radiation</i>), using an illustrated handout.
Level 2 Beginning	Give examples of sources of heat, in a small group, and sort them into lists by kind of heat.
Level 3 Developing	Compare and contrast two or three kinds of heat transfer, using a Venn diagram and working with a partner.
Level 4 Expanding	Prepare and present a poster comparing the three kinds of heat transfer, with a partner.
Level 5 Bridging	Write a paragraph about each kind of heat transfer, giving examples and explaining how the transfer occurs.

PS3 The motion of an object is affected by force.

S:PS3:8:1.3	FORCES: Use data to determine or predict the overall (net) effect of multiple forces (e.g., friction, gravitational, magnetic) on the position, speed, and direction of motion of objects.
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Level 1 Entering	Chart information from trials demonstrating the effect of friction and gravity on the speed and direction of motion of an object, with a partner.
Level 2 Beginning	Describe orally the effect of a single force on the speed and/or direction of an object, after completing a data table from multiple trials.
Level 3 Developing	State reasons why a toy car goes farther when sent down a steeper slope, using a word bank.
Level 4 Expanding	Use data to predict the net effect of multiple forces on position, speed, and direction of motion of objects, with a partner, in writing..
Level 5 Bridging	Create a comic strip or a skit, using humor, to explain the effect of multiple forces on an object, such as a car or a body, including academic language.