

**Science  
NYSAA Frameworks**

**Grade 4**

**2016-17**

**New York State Alternate Assessment  
for Science and Social Studies**



**Standard and Essence(s)****Science – Grade 4****Standard 1:** Analysis, Inquiry, and Design (Scientific Inquiry)**Key Idea 2:** Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.

<b>Science Core Curriculum</b>	<b>Grade Level Indicators (GLI)</b>	<b>Essence(s) of Indicators</b>
Pg. 6	<p>S2.1 Develop written plans for exploring phenomena or for evaluating explanations guided by questions or proposed explanations they have helped formulate.</p> <p>S2.1a Indicate materials to be used and steps to follow to conduct the investigation and describe how data will be recorded (journal, dates and times, etc.)</p> <p>S2.2 Share their research plans with others and revise them based on their suggestions.</p> <p>S2.2a Explain the steps of a plan to others, actively listening to their suggestions for possible modification of the plan, seeking clarification and understanding of the suggestions and modifying the plan where appropriate</p> <p>S2.3 Carry out their plans for exploring phenomena through direct observation and through the use of simple instruments that permit measurement of quantities, such as length, mass, volume, temperature and time.</p> <p>S2.3a Use appropriate “inquiry and process skills” to collect data</p> <p>S2.3b Record observations accurately and concisely</p>	<ul style="list-style-type: none"> <li>• Plan and develop procedures for exploration</li> <li>• Identify materials needed for exploration</li> <li>• Implement an exploration</li> <li>• Report observations</li> </ul>

<b>Alternate Grade Level Indicators (AGLIs)</b>		<b>Science – Grade 4</b>	<b>AGLI 1</b>
<b>Standard 1:</b> Analysis, Inquiry, and Design (Scientific Inquiry)			
<b>Key Idea 2:</b> Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.			
<b>ALTERNATE GRADE LEVEL INDICATORS (AGLIs)</b>			
<b>Less Complex</b>		◀ ..... ◀ ..... ◀ ..... ▶ ..... ▶ ..... ▶	<b>More Complex</b>
<p>The student will:</p> <ul style="list-style-type: none"> <li>recognize a scientific tool used in a scientific investigation (41111)</li> <li>attend to someone conducting a single step for a scientific investigation (41112)</li> <li>complete a single step of a scientific investigation (41113)</li> <li>recognize the general outcome of the procedure (41114)</li> </ul>	<p>The student will:</p> <ul style="list-style-type: none"> <li>identify the purpose of a scientific tool and/or material needed for a scientific investigation (41121)</li> <li>complete two steps of a scientific investigation (41122)</li> <li>recognize the planning steps of a scientific investigation (41123)</li> <li>identify a quantitative result of a scientific investigation (41124)</li> <li>sequence the steps of a scientific investigation (41125)</li> </ul>	<p>The student will:</p> <ul style="list-style-type: none"> <li>gather scientific tools and materials that will be needed for a scientific investigation (41131)</li> <li>plan a scientific investigation (41132)</li> <li>implement the steps of a scientific investigation (41133)</li> <li>report specific results of a scientific investigation (41134)</li> </ul>	

# Assessment Tasks Science – Grade 4

# AGLI 1

**Standard 1:** Analysis, Inquiry, and Design (Scientific Inquiry)

**Key Idea 2:** Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.

## ASSESSMENT TASKS (ATs)

Assessment tasks are organized from less complex to more complex in accordance with AGLI ordering. Tasks must be used as written, cannot be modified, and no original tasks can be used for assessment.

AT Alignment to AGLI	Assessment Tasks	POSSIBLE Datafolio Products and Verifying Evidence Assessment Strategies
AT41111A	The student will recognize a scientific tool by indicating the tool appropriate for a specific scientific investigation. (e.g., choose a tool for a scientific investigation of air temperature at various times in a day: pencil vs. thermometer; choose a tool for a scientific investigation of distance traveled by an object: chalk vs. yardstick)	<ul style="list-style-type: none"> <li>Student work product with the student-circled scientific tool for a specific scientific investigation (e.g., the thermometer for the temperature investigation, the yardstick for the distance investigation)</li> <li>DCS (multi-step) with steps describing student performance selecting scientific tool(s), with an indication of the associated scientific investigation</li> </ul>
AT41111B	The student will recognize a scientific tool that was used, after observing a scientific investigation.	<ul style="list-style-type: none"> <li>Student work product with pictures of tools, some used and some not used, where the student circles the scientific tool(s) that was used in the investigation</li> </ul>
AT41111C	The student will recognize the tool used to investigate the temperature of water by indicating the thermometer.	<ul style="list-style-type: none"> <li>Digital video of the student selecting, from a set of choices, the tool to investigate water temperature</li> <li>Student work product indicating an investigation, with pictures of a thermometer(s) and distractor(s). Student circles, marks, gazes at, etc. the thermometer</li> </ul>
AT41112	The student will observe the teacher completing a single step of a scientific investigation.	<ul style="list-style-type: none"> <li>DCS (time-segment) of student performance in observing to the teacher completing a single step of a scientific investigation for 10 second increments</li> </ul>
AT41113A	The student will complete a single step of a scientific investigation that involves two or more steps.	<ul style="list-style-type: none"> <li>Sequenced, captioned, and dated photographs of the student placing salt in a tin can after the teacher placed ice in the tin can, to discover how dew or frost is formed</li> </ul>
AT41113B	Student will complete a single step of the scientific investigation of plant growth. (e.g., choose a material that could be used to increase plant growth)	<ul style="list-style-type: none"> <li>DCS (multi-step) with steps describing student performance and indicating an investigation choosing water, soil, and plant placement in the classroom</li> <li>Sequenced, captioned, and dated photographs showing student adding water, soil, and/or placing the plant in the sunlight as part of an investigation</li> </ul>

## Assessment Tasks

AT41114	The student will recognize the general outcome of an investigation, once it is complete.	<ul style="list-style-type: none"> <li>• Student work product in which the student selects the correct picture or symbol depicting the general outcome of a scientific investigation and then the student glues it onto the worksheet</li> <li>• DCS (multi-step) with steps describing student performance in selecting the appropriate outcome of an investigation, when given a set of choices</li> </ul>
AT41121A	The student will identify the purpose of a tool or material needed for a specific scientific investigation.	<ul style="list-style-type: none"> <li>• Sequenced, captioned, and dated photographs of the student selecting one purpose of a thermometer for an investigation of water temperature</li> <li>• Student work product showing a tool/material and purpose related to a specific scientific investigation, with a line drawn by the student to match them up, or selecting a picture of the tool from a set of choices</li> </ul>
AT41121B	The student will identify the purpose of a scientific tool, when given a tool and a set of possible purposes to choose from. (e.g., when given “scale,” the student selects “tells which is heavier”)	<ul style="list-style-type: none"> <li>• Student work product where the student circles or places a thumbprint on the correct purpose of a given scientific tool</li> </ul>
AT41121C	The student will identify the purpose of a material needed for a specific scientific investigation	<ul style="list-style-type: none"> <li>• DCS (multi-step) with steps describing student performance in identifying a set of materials for a specific scientific investigation, given the choice between a material and a distractor</li> </ul>
AT41122A	The student will complete two or more steps of a specific scientific investigation. (e.g., in an investigation of objects sinking and floating—step 1: identify the objects to use, step 2: put the objects in a bucket with water, and step 3: observe the results)	<ul style="list-style-type: none"> <li>• Sequenced, captioned, and dated photographs of the student completing two steps of a specific scientific investigation</li> </ul>
AT41122B	The student will complete, with a partner, two steps of a specific scientific investigation. (e.g., Precipitation investigation [1] the student and partner getting a cylinder/ yardstick (gathering material), [2] the student and partner placing the cylinder in the lawn/yardstick in the snow, and [3] the student and partner observing the teacher measuring the precipitation)	<ul style="list-style-type: none"> <li>• DCS (multi-step) with steps describing student performance completing two steps, with a partner, of a specific scientific investigation</li> <li>• Sequenced, captioned, and dated photographs of the student completing 2 steps of a specific scientific investigation with a partner</li> </ul>
AT41123	The student will recognize two or more planning steps of a scientific investigation. (e.g., the student indicates, from a sequence of photos, the ones that show the planning steps [e.g., ask a question, do background research, construct a hypothesis, plan the investigation]; given a list of investigation steps, student circles the planning steps)	<ul style="list-style-type: none"> <li>• Student work product of the student selecting photo(s) of the planning steps of an investigation</li> <li>• DCS (multi-step) with steps describing student performance in indicating a planning step of a scientific investigation from a set of choices</li> </ul>

## Assessment Tasks

AT41124	<p>The student will identify a quantitative result from a specific scientific investigation. (e.g., given data from weather forecasts and distractors, the student identifies the quantitative information connected to crop growth or failure)</p>	<ul style="list-style-type: none"> <li>• Student work sample with picture cards representing quantitative result(s) glued in the result space for a specific investigation</li> <li>• DCS (multi-step) with steps describing student performance identifying the quantitative result(s) of a specific scientific investigation</li> </ul>
AT41125	<p>The student will sequence two or more steps of a specific scientific investigation. (e.g., placing photographs, or sentence strips, of the scientific investigation steps in the correct order)</p>	<ul style="list-style-type: none"> <li>• Student work product of photographs or sentence strips sequenced to show the steps of a specific scientific investigation</li> </ul>
AT41131	<p>The student will select and gather scientific tools and materials needed to conduct a specific scientific investigation. (e.g., placing tools in a bin; selecting pictures of tools on an interactive white board and moving them to a virtual bin)</p>	<ul style="list-style-type: none"> <li>• DCS (multi-step) with steps describing student performance gathering scientific tools and materials needed for the steps of an investigation on magnetic and non-magnetic items</li> <li>• Student work product of the interactive board print out, including a notation describing how the student selected images of scientific tools and materials for a specific investigation by dragging and dropping them in a virtual bin</li> </ul>
AT41132	<p>The student will plan a scientific investigation by determining the steps needed to test a given hypothesis. (e.g., selecting from a set of steps and distractors, the student will organize the steps needed to investigate which objects will sink)</p>	<ul style="list-style-type: none"> <li>• Student work product showing the given hypothesis and order of the student's set of selections of steps of the investigation</li> </ul>
AT41133	<p>The student will implement the steps of a scientific investigation by performing an experiment. (e.g., test whether ice melts in the refrigerator; test which objects are magnetic from a set of magnetic and non-magnetic objects)</p>	<ul style="list-style-type: none"> <li>• Digital video of the student performing the steps of the scientific investigation</li> <li>• DCS (multi-step) with steps describing student performance implementing steps of a scientific investigation testing whether ice melts in various locations in the classroom</li> </ul>
AT41134A	<p>The student will report the results of a scientific investigation. (e.g., use a tally to illustrate the results of scientific investigation; place objects on a bar graph according to the results of a scientific investigation; answer questions explaining the results of a scientific investigation)</p>	<ul style="list-style-type: none"> <li>• Student work product that contains student-created pictures that illustrate the results of the experiment</li> <li>• Student work product of the student's responses to questions about the investigation</li> </ul>

**Standard and Essence(s)****Science – Grade 4****Standard 4:** The Living Environment**Key Idea 3:** Individual organisms and species change over time.

Science Core Curriculum	Grade Level Indicators (GLI)	Essence of Indicators
Pg. 18–19	<p><b>3.1 Describe how the structures of plants and animals complement the environment of the plant or animal.</b></p> <p>3.1a Each animal has different structures that serve different functions in growth, survival, and reproduction.</p> <ul style="list-style-type: none"> <li>• wings, legs, or fins enable some animals to seek shelter and escape predators</li> <li>• the mouth, including teeth, jaws and tongue, enables some animals to eat and drink</li> <li>• eyes, nose, ears, tongue, and skin of some animals enable the animals to sense their surroundings</li> <li>• claws, shells, spines, feathers, fur, scales, and color of body covering enable some animals to protect themselves from predators and other environmental conditions, or enable them to obtain food</li> <li>• some animals have parts that are used to produce sounds and smells to help the animal meet its needs</li> <li>• the characteristics of some animals change as seasonal conditions change (e.g., fur grows and is shed to help regulate body heat; body fat is a form of stored energy and it changes as the seasons change)</li> </ul> <p>3.1b Each plant has different structures that serve different functions in growth, survival, and reproduction.</p> <ul style="list-style-type: none"> <li>• roots help support the plant and take in water and nutrients</li> <li>• leaves help plants utilize sunlight to make food for the plant</li> <li>• stems, stalks, trunks, and other</li> <li>• similar structures provide support for the plant</li> <li>• some plants have flowers</li> <li>• flowers are reproductive structures of plants that produce fruit, which contains seeds</li> <li>• seeds contain stored food that aids in germination and the growth of young plants</li> </ul> <p>3.1c In order to survive in their environment, plants and animals must be adapted to that environment.</p> <ul style="list-style-type: none"> <li>• seeds disperse by a plant’s own mechanism and/or in a variety of ways that can include wind, water, and animals</li> <li>• leaf, flower, stem, and root adaptations may include variations in size, shape, thickness, color, smell, and texture</li> <li>• animal adaptations include coloration for warning or attraction, camouflage, defense mechanisms, movement, hibernation, and migration</li> </ul> <p><b>3.2 Observe that differences within a species may give individuals an advantage in surviving and reproducing.</b></p> <p>3.2a Individuals within a species may compete with each other for food, mates, space, water, and shelter in their environment.</p> <p>3.2b All individuals have variations, and because of these variations, individuals of a species may have an advantage in surviving and reproducing.</p>	<ul style="list-style-type: none"> <li>• Understand that animals and plants have different structures that are essential for growth, reproduction, and survival</li> <li>• Understand that animals and plants adapt to their environment</li> </ul>

<b>Alternate Grade Level Indicators (AGLIs)</b>		<b>Science – Grade 4</b>	<b>AGLI 2</b>
<b>Standard 4:</b> The Living Environment			
<b>Key Idea 3:</b> Individual organisms and species change over time.			
<b>ALTERNATE GRADE LEVEL INDICATORS (AGLIs)</b>			
<b>Less Complex</b>		◀ ..... ◀ ..... ◀ ..... ▶ ..... ▶ ..... ▶	<b>More Complex</b>
<p>The student will:</p> <ul style="list-style-type: none"> <li>distinguish between a plant and an animal (42211)</li> <li>identify a basic plant or animal structure (e.g., fin, wing, leg, arm, mouth, nose, eye, ear, root, stem, leaf, flower, seed, etc.) (42212)</li> <li>identify a plant or an animal found in a given place (42213)</li> <li>recognize the environment in which an organism is typically found (42214)</li> </ul>	<p>The student will:</p> <ul style="list-style-type: none"> <li>identify the function of a basic plant or animal structure (42221)</li> <li>identify the part that is missing from a specific plant or animal (42222)</li> </ul>	<p>The student will:</p> <ul style="list-style-type: none"> <li>identify that an animal or plant has different structures that are essential for growth, reproduction, and/or survival (42231)</li> <li>recognize how animals or plants adapt to their environment (42232)</li> </ul>	

**Assessment Tasks**

**Science – Grade 4**

**AGLI  
2**

**Standard 4:** The Living Environment

**Key Idea 3:** Individual organisms and species change over time.

**ASSESSMENT TASKS (ATs)**

Assessment tasks are organized from less complex to more complex in accordance with AGLI ordering. Tasks must be used as written, cannot be modified, and no original tasks can be used for assessment

AT Alignment to AGLI	Assessment Tasks	POSSIBLE Datafolio Products and Verifying Evidence Assessment Strategies
AT42211A	The student will distinguish between a plant and an animal. (e.g., given pictures of a flower and a cat, student asked to identify the plant by pointing to or eye gazing)	<ul style="list-style-type: none"> <li>Student work product of a scrapbook with pictures of the student’s choices on a page labeled plant</li> </ul>
AT42211B	The student will distinguish between a plant and an animal by sorting a group of pictures into categories.	<ul style="list-style-type: none"> <li>Student work product in which the student glues pictures of plants on one side of the page and labels them “plants” and glues pictures of animals on the other side of the page and labels them “animals”</li> <li>Sequenced, captioned, and dated photographs of the student showing (1) the student with one pile of pictures of plants and animals all together, (2) the student with some of the pictures sorted into the categories, (3) the final two piles of pictures under the categories of “plants” and “animals”</li> </ul>
AT42212A	The student will identify a basic structure of a plant. (e.g., selecting appropriate plant structure from a group of different structures, such as seed, leaf, flower, root, stem, desk, truck)	<ul style="list-style-type: none"> <li>Sequenced, captioned, dated photographs of the student selecting a structure from a group when the structures are named</li> </ul>
AT42212B	The student will identify a basic animal structure. (e.g. labeling a diagram of an animal with the basic structures such as fin, wing, leg, arm, mouth, nose, eye, ear)	<ul style="list-style-type: none"> <li>Student work product with labels placed on basic animal structures</li> </ul>
AT42213	The student will identify a plant or animal found in a given environment. (e.g., given a water environment, student selects an animal [fish]; given a forest environment, student selects an animal [bear]; given a desert environment, student selects a plant [cactus]; given an ocean environment, student selects a plant [seaweed])	<ul style="list-style-type: none"> <li>Student work product with given environment, student pastes image(s) of an animal and/or plant associated with that environment</li> </ul>

AT42214	<p>The student will recognize the environment in which a given organism (animal or plant) is typically found.</p> <p>(e.g., Where is this plant found? [given a cactus], student recognizes environment [desert]; Where is this animal found? [given a gorilla], student recognizes environment [jungle])</p>	<ul style="list-style-type: none"> <li>Sequenced, captioned, and dated photographs of the student completing a diorama of the environment in which a given animal or plant lives</li> <li>Student work product where the student responds via eye gaze and the teacher documents the student's response to indicate that a bird's appropriate environment is the tree or bush.</li> </ul>
AT42221	<p>The student will identify the function of a given plant or animal structure.</p> <p>(e.g., given the structure of wings—student identifies from a set of function choices “for flying”; given the structure of roots—the student identifies from a set of choices “for taking in water”)</p>	<ul style="list-style-type: none"> <li>Student work product where the student glues pictures or symbols to fill in the blanks (e.g., birds have wings in order to <u>fly</u>; plants have roots in order to <u>take in water</u>) or matches function to the structures (by drawing lines)</li> <li>Digital video or audio of the student providing answers (using words, sign language, augmentative communication, etc.) to questions regarding the functions of plant or animal structures</li> </ul>
AT42222	<p>The student will identify the part that is missing on a diagram of a specific plant or animal.</p>	<ul style="list-style-type: none"> <li>Sequenced, captioned, and dated photographs of the student selecting the correct picture card to complete a diagram</li> <li>Student work product with the missing part drawn or glued onto the worksheet</li> </ul>
AT42231	<p>The student will identify two or more structures that an animal or a plant uses for growth, reproduction, and/or survival.</p>	<ul style="list-style-type: none"> <li>Student work product with reproductive or growth parts of a plant or animal labeled</li> <li>Digital video of the student naming (using words, sign language, augmentative communication, etc.) the structures essential for survival by using a model or a poster of a plant or animal</li> <li>Student work product that would show how the structures of a horse, cow, chicken, or other common farm animals are used for growth, reproduction, and/or survival</li> </ul>

<p>AT42232A</p>	<p>The student will recognize how two or more animals or plants adapt to their environment by selecting an adaptation(s) that occurs during a certain time of year. (e.g., animals get thicker fur in winter; bears hibernate; birds fly south; some plants go into a resting period; some trees drop their leaves; in spring, when the crocus plant detects lengthening days [more light] and warmer soil [temperature increase] it starts to flower and pushes out shoots; a forsythia plant releases a chemical that makes buds and causes shoots to start growing again)</p>	<ul style="list-style-type: none"> <li>• Student work product where the student glues pictures or symbols to partially completed sentences on a worksheet, such as: When the weather gets cold (in winter):             <ol style="list-style-type: none"> <li>1. Animal fur gets _____ (thicker/thinner)</li> <li>2. Birds _____ (fly south/ hibernate)</li> <li>3. Bears _____ (hibernate/fly south)</li> <li>4. Forsythias have a _____ (resting period/growth period)</li> <li>5. Red Maple trees _____ (flower/drop leaves)</li> </ol> </li> </ul>
<p>AT42232B</p>	<p>The student will recognize how two or more animals or plants adapt to their environment by indicating an adaptation or survival technique. (e.g., a chameleon changes color to match its environment, some insects look like a stick or dead leaf to match their environment, some desert plants have an oily coating that traps moisture)</p>	<ul style="list-style-type: none"> <li>• Student work product showing two or more animals or plants and their adaptations or survival techniques</li> </ul>