2010: Commonly Assessed Science AAGSEs

SPT	Inquiry Construct	AAGSE Description	Sample Investigation	Student Demonstration of Inquiry Construct	Data Collection Inquiry Construct	Student Demonstration of Knowledge	Data Collection Knowledge
GRADE 4							
04-4	**Observe/ Question** Make and describe observations in order to ask questions, and/or make predictions related to the science investigation	LS 1.2.1a Identify one or more conditions a plants need in order to grow and survive	**O/Q**- Observe different plants in the school. Describe the plants in terms of color, health, and location. Develop a prediction. **P**-Determine a location of where light/no light occur at school- put one plant in each location. **C**- Take data once a week on the two plants (color, size, health) **A**- After 1 month, evaluate the data to see the condition that led to the greatest growth and survival of the plant.	Students observe and describe the visited plants (O/Q) 1- Plant looks _____ (color) 2- Plant looks _____ (healthy, not healthy) 3- Plant is located _____ Near sunlight/not near light 4-Prediction: I think plants need ____ to grow and survive (sun/ no sun)	Evaluate the accuracy and level of assistance of each student's skills in the four step task analysis.	After taking data for a month, have students use their data to determine which conditions (light/no light) supported the plants to grow and survive.	Evaluate the accuracy and level of assistance needed to identify the plant with best growth & survival and the conditions it experienced.
04-4	**Observe/ Question** Make and describe observations in order to ask questions, and/or make predictions related to the science investigation	LS 1.2.1a Identify one or more conditions a plants need in order to grow and survive	**Modified for a student with more severe disabilities** **O/Q**-Observe different plants in the school. Describe the plants as healthy (MJ symbol soft with a soft tactile symbol added) or dead (MJ symbol hard with a hard tactile symbol added). Students assist with developing a prediction, "Plants near window are healthier." **P**-Determine where at school windows/no light occur- put one plant in each spot **C**- Take data once a week on the two plants plant (health/ dead). Students can place the tactile symbol on a classroom chart each week. **A**- After 1 month, count how many "healthy" symbols for the sun plant and no-sun plant. To answer the research question.	Students observe by touching the visited plants (O/Q). Students are asked to describe the healthy plant (by touching the "healthy" symbol from a field of two symbols). Students are asked "where are the healthy plants?" Student responds by touching the window.	Students are evaluated in their accuracy and level of assistance to: Make observations by touching the healthy/dead symbol and identifying the location by touching the window.	After touching each healthy plant, students identify the conditions (sun) that they need by touching the window.	Evaluate accuracy and level of assistance in determining that sun is needed for the healthy plant.
04-5	**Conducting** Follow procedures, using equipment or measurement devices accurately as appropriate for collecting and/or recording qualitative or quantitative data	PS 3.2.1a Identify objects that are and are not attracted to magnets	**O/Q**-Students are introduced to the magnet wand and see how magnetism is tested. They can test fridge magnets and are introduced to the vocabulary of "attract" and "not attract." The students develop a research question, "What objects are attracted to magnets?" **P**-Students take a walk around the school to collect 20 objects to test. They prepare for the experiment by dividing the objects into groups of 5. **C**- Students follow a 3 step procedure to test each object for magnetism. **A**- Students compare their results to answer their research question to identify the objects that are attracted to magnets.	Students follow a three step procedure to collect and record their magnetism data: Step 1: get an object to test Step 2: test with the magnet wand- determine if the object is attracted Step 3: record the results *on a chart *in a labeled "attract" bowl or "not attract" bowl	Evaluate the accuracy and level of assistance of students on how the student completes the three step procedure.	In step 2, students determine the magnetism of each item. This is used to evaluate the AAGSE PS 3.2.1a	Evaluate accuracy and level of assistance in determining whether the object attracted or did not attract to the magnet wand.

SPT	Inquiry Construct	AAGSE Description	Sample Investigation	Student Demonstration of Inquiry Construct	Data Collection Inquiry Construct	Student Demonstration of Knowledge	SPT
04-5	**Conducting** Follow procedures, using equipment or measurement devices accurately as appropriate for collecting and/or recording qualitative or quantitative data	PS 3.2.1a Identify objects that are and are not attracted to magnets	**Modified for a student with more severe disabilities** **O/Q**-Students are introduced to the magnet wand and see how magnetism is tested. They can test fridge magnets and are introduced to the vocabulary of attract (an MJ symbol of "together" with two objects attached together added to the symbol) and "not attract" (a MJ symbol of "apart" with two objects apart added to the symbol). The students assist in developing a research question, "What objects are attracted to magnets?" **P**-Students take a walk around the school to collect 20 objects to test. They prepare for the experiment by dividing the objects into 5 bags. **C**- Students follow a 3 step procedure to test each object for magnetism. **A**- Students compare their results to answer their research question to identify the objects that are attracted to magnets.	Students follow a three step procedure to collect and record their magnetism data: Step 1: grab an object to test Step 2: test with the magnet wand- determine if the object is attracted/not attract by hitting a one-step talking switch with the symbol attached. Step 3: record the results by putting the object in the correct bowl (bowls labeled with an "attract" or "not attract" symbol.	Evaluate the accuracy and level of assistance of students on how the student completes the three step procedure.	In step 2, students determine the magnetism of each item. This is used to evaluate the AAGSE PS 3.2.1a	Evaluate accuracy and level of assistance in determining whether the object attracted or did not attract to the magnet wand.

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GRADE 8							
SPT	Inquiry Construct	AAGSE Description	Sample Investigation	Student Demonstration of Inquiry Construct	Data Collection Inquiry Construct	Student Demonstration of Knowledge	Data Collection Knowledge
08-1	**Planning** Identify information/ evidence that needs to be collected and/or tools to be used in order to answer the question and/or check a prediction	LS 1.1.3 Distinguish plants from animals	**O/Q**-Students observe plants and animals and develop a list of "characteristics". Students will develop a hypothesis such as "Plants have leaves and animals move" **P**- Students select the characteristics they will investigate and will label a data chart with the characteristics and animals/plants they choose to test. **C**- Students follow a 3 step procedure to test each object and identify each item as a plant or animal. **A**- Students compare their results to evaluate their hypothesis.	Students identify the characteristics of animals and plants. Example: Students must complete a planning worksheet such as: Animals have the following 2 characteristics: _____ and _____ Plants have the following 2 characteristics: _____ and _____	Students are evaluated on the accuracy and level of assistance needed to identify the characteristics to test (i.e. presence of leaves, movement, fur) to determine plants from animals in their investigation.	After students observe each object and determine if they are an animal or plant.	Evaluate accuracy and level of assistance in determining whether the object is an animal or a plant.
08-1	**Planning** Identify information/ evidence that needs to be collected and/or tools to be used in order to answer the question and/or check a prediction	LS 1.1.3 Distinguish plants from animals	**Modified for a student with more severe disabilities** **O/Q**-Students observe plants and animals and develop a list of "characteristics". Students will develop a hypothesis such as "Plants have leaves." Animals have fur." (Leaf symbol = MJ symbol <Leaf> with a actual leaf attached. Fur = MJ symbol for fur with piece of fur added). **P**- Students select the 2 characteristics (fur, leaf, and two distracter symbols) they will investigate and will label a data chart with the characteristics. **C**- Students follow a 3 step procedure to test each object and identify each item as a plant or animal. **A**- Students compare their results to evaluate their hypothesis.	Students identify the characteristics of animals and plants. Example: Students must complete a planning worksheet such as: Animals have _____(fur) (from field of two) Plants have _____(leaves) (from field of two)	Students are evaluated on the accuracy and level of assistance needed to identify the characteristics to test (i.e. presence of leaves, movement, fur) to determine plants from animals in their investigation.	After students observe each object and determine if they are an animal or plant.	Evaluate accuracy and level of assistance in lacing the object in the correct bowl (animal=MJ animal symbol with a fur tactile marker) or plant (MJ plant symbol with a leaf marker).
08-2	**Conducting** Use data to summarize results	ESS 1.2.13a Use observations and one or more data collection tools to describe daily weather	**O/Q**-Students are introduced to the rain gauge and thermometer and what each tool is used for. The students develop a research question "When will it be the hottest?" When will it be the rainiest?" When will it be the sunniest? **P**- Students develop a schedule of who will be assigned each day to collect data. They develop a chart to record daily data and a classroom chart to keep a running total of each day's data (sun, temperature, rain) **C**- Students record observations and data from the rain gauge and thermometer and observations (presence of sun) on their daily weather chart then chart it on the classroom chart. At the end of each week, students use their data to summarize their results.	Using the data, the students developed a summary statement that gives the total number of days of rain and the average temperature for each week.	Students are evaluated on the accuracy and level of assistance needed to use the data to create a summary statement each week.	Students use the thermometer and rain gauge to describe daily weather.	Students are evaluated on their accuracy and level of assistance needed to make observations, use the thermometer and rain gauge to describe daily weather.

			A- Students compare their results to determine the month of more rain and higher temperature to answer their research question.				
GRADE 8							
SPT	**Inquiry Construct**	**AAGSE Description**	**Sample Investigation**	**Student Demonstration of Inquiry Construct**	**Data Collection Inquiry Construct**	**Student Demonstration of Knowledge**	**Data Collection Knowledge**
08-2	**Conducting** Use data to summarize results	ESS 1.2.13a Use observations and one or more data collection tools to describe daily weather	**Modified for a student with more severe disabilities** **O/Q**-Students are introduced to the rain gauge and what the tool is used for. The students develop a research question "Will it rain for 2 days each week in April? **P**- Students develop a schedule of who will be assigned each day to collect data. They will develop a classroom chart to keep a running total of each day's data by putting 5 boxes side by side on the wall. **C**- Each day, students go outside and feel the rain gauge: a tool that collects rain. Students feel the rain gauge, and record WET (MJ symbol for wet with a wet sponge attached) or DRY (MJ symbol for dry with a dry sponge attached). Students take their selected symbol to the class chart and place their symbol in the day's box. At the end of each week, students use their data to summarize their results by counting the number of WET symbols. **A**- Students use their summary to answer their research question at the end of the month.	During the conducting phase of the investigation, students summarize their weather data each week by: Adding the total days of rain (WET) each week to complete a summary statement.	Students are evaluated on the accuracy and level of assistance needed to summarize their data (count the number of WET days) each week.	Students use rain gauge to describe daily weather.	Students are evaluated on their accuracy and level of assistance needed to make observations, using the rain gauge to describe daily weather.

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Grade 11							
SPT	**Inquiry Construct**	**AAGSE Description**	**Sample Investigation**	**Student Demonstration of Inquiry Construct**	**Data Collection Inquiry Construct**	**Student Demonstration of Knowledge**	**Data Collection Knowledge**
11-1	**Conducting** Use accepted methods for organizing, representing and/or manipulating data	ESS 2.1.1a Collect data to show that the sun warms the earth during daytime	**O/Q**- Students read a book about the sun and how it helps the earth get warm. They develop a research question, "Will the sun make the earth warmest at noon? **P**- Students develop a schedule of who will be assigned each hour to collect data. They develop a chart to record daily data and a classroom chart to keep a running total of temperatures on sunny days. **C**- On sunny days, students record data on their hourly temperature chart then charted it on the classroom chart. At the end of each day, students use their data to summarize their results. **A**- Students compare their results to determine the hour that the sun warms the earth the most during daytime.	During the conducting part of the investigation, students place their data on their hourly data chart and the time of the highest temperature on the classroom chart at the end of the day.	Students are evaluated on their accuracy and level of assistance needed in: 1- placing the data in the correct place on their hourly data chart 2- placing the data in the correct place on their classroom chart.	Students collect data on hourly temperature during sunny days.	Students are evaluated on their accuracy and level of assistance needed to collect data on the warmth of the sun during the daytime.
11-1	**Conducting** Use accepted methods for organizing, representing and/or manipulating data	ESS 2.1.1a Collect data to show that the sun warms the earth during daytime	**Modified for a student with more severe disabilities** **O/Q**- Students read a book about the sun and how it helps the earth get warm. They develop a research question, "Will the sun make the earth warmer? **P**- Students develop a schedule of who will be assigned each hour to collect data. They develop a chart to record daily data and a classroom chart to keep a running total of temperatures on sunny days. **C**- On sunny days, students record data on their hourly temperature chart (six boxes marked for each hour of the school day) then charted it on the classroom chart. At the end of each day, students use their data to summarize their results. **A**- Students compare their results to determine the hour that the sun warms the earth the most during daytime.	A modified thermometer can be used. In the morning, a marker could be put on the starting point of the thermometer. The area above the starting point can be marked "warmer" and the point below the starting point is "cooler". On sunny days, students read the thermometer and touch the part of the thermometer of the current temperature. If it is in the "warmer" area, students can select a "warmer" symbol (MJ symbol of hot with a hand warmer attached) from a field of two and place their data symbol on their hourly classroom chart at the end of the day.	Students are evaluated on their accuracy and level of assistance needed in representing their data by placing the data in the correct place on their classroom chart.	Students are evaluated on their ability to correctly indicate "warmer" or "cooler" based on the modified thermometer.	Students are evaluated on their accuracy and level of assistance in selecting the correct symbol/data about sun warming the earth.

Grade 11							
SPT	**Inquiry Construct**	**AAGSE Description**	**Sample Investigation**	**Student Demonstration of Inquiry Construct**	**Data Collection Inquiry Construct**	**Student Demonstration of Knowledge**	**Data Collection Knowledge**
11-2	**Analyzing** Use evidence to support and/or justify interpretations and/or conclusions or explain how the evidence refutes the hypothesis	PS 3.1.1h Describe how a different amount of force on the same object causes different amounts or speeds of movement	**O/Q**- Students read a book about force and motion. They are introduced to key vocabulary (force, motion, push) and develop a research question, "Which push object (force) will make the car move farthest?" **P**- Students collected object to connect to a pendulum to push the test car. Students identified the tools needed for this experiment: scale to weigh the push objects, ruler to measure the length of movement of the test car. **C**- Students swing the pendulum to push the test car and then measure the length of movement of the car. They repeat for the other objects. **A**- Students compare their results to determine which object pushed the car the furthest. They identified the weight of the object to answer their research question.	After all objects have been used to apply force to the test car, students complete a lab report: **LAB REPORT** 1-Circle the furthest distance on your data sheet: 2. What object made the car go furthest? _____ 3- Circle the shortest distance on your data sheet: 4-What object made the car move the least?_____ 5-Heavier objects pushed the test car _____ longer/shorter.	Students are evaluated on their accuracy and level of assistance needed to answer questions (1-4).	The AAGSE is evaluated in Question 5.	Students are evaluated on their accuracy and level of assistance needed to describe how different amounts of force cause different amounts of movement. (Question 5)