South Dakota Extended Content and Alternate Academic Achievement Descriptors for Students with Significant Cognitive Disabilities

Science Extended Content

Board Approved
January 24, 2006

Special Education Programs
Mission Statement

Special Education Programs located in the South Dakota Department of Education advocates for the availability of the full range of personnel, programming, and placement options, including early intervention and transition services, required to assure that all individuals with disabilities are able to achieve maximum independence upon exiting from school.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

Science Grade K

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
K.P.1.1. Students are able to use senses to describe solid objects in terms of physical attributes.

Extended Content:
K.A.P.1.1. Students are able to use senses to recognize solid objects by a physical attribute.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use senses to identify solid objects by a physical attribute.	• Given three objects, students will choose object according to specific attributes. **Examples:** "Show me", "Point to", "Indicate" the square, blue object, flat object, etc…
Applying: Students are able to use senses to recognize solid objects by a physical attribute.	• Given solid objects with various physical attributes, the student will sort the objects according to similar attributes. **Examples:** 1. Hard and hard 2. Big and big 3. Red and red
Developing: Students are able to use senses to recognize similarities between solid objects.	• When given 3 objects, students will choose 2 that are the same. • Match solid objects.
Introducing: Students are able to use senses to explore solid objects.	• Given solid objects, the student will touch/play/explore through various sensory modes.

General Education Standard:
K.P.1.2. Students are able to identify water in its solid and liquid forms.

Extended Content:
K.A.P.1.2. Students are able to recognize water in its liquid form.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to illustrate water in its liquid form.	• Illustrate water in its liquid form. **Examples**: Swimming pool, waterfall, lake, fountain
Applying: Students are able to recognize water in its liquid form.	• Given liquids, student will indicate its form. **Examples**: Matching, pictures, etc…
Developing: Students are able to explore water in its liquid form.	• Using their senses, students will explore water. **Examples:** Water table, drinking water, use a switch, to look at various forms of water
Introducing: Students are able to attend to exploration of water in its liquid form by others.	• Students will attend to others as they explore water. **Example:** Play at water table, rubber squirt toys

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
K.L.1.1. Students are able to sort living from non-living things.

Extended Content:
K.A.L.1.1. Students are able to recognize living from non-living things.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify living and non-living things.	• Given pictures of living and non-living things, students will match them. **Examples:** File folder games, computer software programs, etc.
Applying: Students are able to recognize living from non-living things.	• Upon being shown two objects, the student will choose the living/non-living object. **Examples:** 1. Living vs. stuffed animal 2. Plastic plant vs. real plant
Developing: Students are able to explore various living and non-living things.	• Through their senses, the student will manipulate objects. **Examples:** Plants, animals, fish, rocks, pencil, seashell, etc…
Introducing: Students are able to explore various living things.	**Examples:** Plants, small furry animals, fish, etc…

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard:
K.E.1.1. Students are able to describe simple Earth patterns in daily life.

Extended Content:
K.A.E.1.1. Students are able to recognize the difference between day and night.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify an activity of day and at night**.**	• Using pictures, the student will indicate if an activity is a day time or night time activity.
Applying: Students are able to recognize the difference between day and night.	• Matching activities. **Example:** Pictures related to day/night time activities • Coloring activities. • Discuss and show pictures of day/night.
Developing: Students will be able to explore pictures of day and night.	• Given a cue of day and night, student will respond by giving a picture of day and night. **Example:** Turn lights off/on to indicate day and night.
Introducing: Students will be able to respond to illustrations/media depicting day and night.	• Using computer technology, the student will explore examples of day and night. **Examples:** Computer story books, IntelliKeys, etc…

SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: Mastery is not expected at this grade level.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

Science Grade 1

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
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Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
1.P.1.1. Students are able to categorize objects by physical attributes such as color, size, and shape.

Extended Content:
1.A.P.1.1. Students are able to recognize objects by color and shape.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify objects by color and shape.	• Given three objects, students will choose object according to color and shape. **Example:** "Show me", "Point to", "Indicate" the red square, blue circle, etc…
Applying: Students are able to recognize objects by color and shape.	• Given objects with various colors, the student will sort objects according to color. • Given objects with various shapes, the student will sort objects according to shape.
Developing: Students are able to explore objects by color or shape.	• Given games and puzzles, the student will match the color or shape.
Introducing: Students are able to respond to objects by shape.	• When given objects of various shapes, students will manipulate them. **Examples:** Ball, block, triangle-shaped block • Using computer technology, students will attend to shapes of objects.

General Education Standard:
1.P.1.2. Students are able to compare objects in terms of heavier or lighter.

Extended Content:
1.A.P.1.2. Students are able to recognize objects in terms of heavier or lighter.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify objects in terms of heavier or lighter.	• When presented with three objects, the student will put in order from lightest to heaviest.
Applying: Students are able to recognize objects in terms of heavier or lighter.	• When presented with two objects, the student will choose the heavier/lighter object. **Example:** Paper weight and paper, "give (indicate to) me the heavier object".
Developing: Students are able to explore objects together in terms of heavier and lighter.	• When presented with two objects, the student will explore differences between heavier versus lighter objects. **Examples:** 1. Rock vs. feather 2. Book vs. paper
Introducing: Students are able to explore objects in terms of heavier or lighter.	• Given light objects, students will explore them. **Examples:** Feather duster, paper, • Given heavy objects, students will explore them. **Examples:** Wrap student in weighted blanket, leg weights

General Education Standard:
1.P.1.3. Students are able to predict how common materials interact with water.

Extended Content:
1.A.P.1.3. Students are able to demonstrate objects sinking or floating in water.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to determine which objects will sink or float in water.	• Given objects, the student will determine whether it sinks or floats in water.
Applying: Students are able to demonstrate objects sinking or floating in water.	• Given two objects, the student will choose whether the objects will sink or float.
Developing: Students are able to recognize whether objects sink or float in water.	• Given objects, the student will explore which ones will sink or float.
Introducing: Students are able to explore objects in water.	• Using materials, students will feel different objects in a water container. **Examples:** Sand, rubber duck, rocks, paper clip, etc….

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standard:
1.P.2.1. Students are able to describe relative positions of objects.

Extended Content:
1.A.P.2.1. Students are able to demonstrate the relative positions of objects.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify the relative positions of objects.	• After listening to a book with positional words, the student will illustrate the positional words. **Example:** Cut and paste, draw, using Intellikeys (communication device) etc…
Applying: Students are able to demonstrate the relative positions of objects.	• Given positional words, the student will place the object according to the given word. **Example:** "Place the ball under the cup."
Developing: Students are able to locate the relative positions of objects.	• Given positional words, the student will be able to locate the object. **Examples:** "Point to…" "Show me…" and etc...
Introducing: Students are able to imitate relative positions of objects.	• Students will play games requiring positional skills. **Example:** Peek-a-boo and find the object.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
1.L.1.1. Students are able to discover life needs of green plants.

Extended Content:
1.A.L.1.1. Students are able to identify that green plants need water/sun to live.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate that green plants need water and sun to live.	• Given materials, students will grow green plants (provide water and sunlight).
Applying: Students are able to identify that green plants need water/sun to live.	• Given two choices, students will choose which item is appropriate for a plant. **Example:** Water vs. milk, sunlight vs. darkness, etc…
Developing: Students are able to recognize that green plants need water and sun to live.	• Given two plants, students will take care of one and not the other. • Match pictures of food plants need to a plant.
Introducing: Students use senses to explore green plants**.**	• Access pictures of green plants on computer. • Intellikeys- hit switch to explore a growing plant. • Touch different plants at different growing stages.

General Education Standard:
1.L.1.2. Students are able to identify the parts of a plant.

Extended Content:
1.A.L.1.2. Students are able to identify the stem and leaves of a plant.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe the stem and leaves of a plant.	• Student will illustrate and label the stem and leaves of a plant.
Applying: Students are able to identify the stem and leaves of a plant.	• When asked, students will indicate the stem and leaves of a plant. • Match names of stem and leaf to corresponding part.
Developing: Students are able to recognize the stem and leaves of a plant.	• Sort stems from leaves. **Example**: Bring in various stems and leaves of plants.

Introducing: Students are able to explore the stem and leaves of a plant.	• Given a plant, students will use their senses to explore. • Hit switch to explore/view different parts of plants.

General Education Standard:
1.L.1.3. Students are able to list life needs of people and other animals.

Extended Content:
1.A.L.1.3. Students are able to recognize that animals have life needs.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will identify the life needs of animals.	• Using pictures, student will choose the correct needs of animals. • When presented with pictures/objects, students will match the animals and their life needs.
Applying: Students are able to recognize that animals have life needs.	• After attending to books on animal care, students will discuss/share information the life needs of animals. • When presented with magazine pictures, the students will choose animals and their life needs and present in a form of a collage.
Developing: Students will be able to recognize pictures/objects of animal life needs.	• When presented with pictures/objects students will indicate which are life needs.
Introducing: Students will be able to explore the life needs of animals.	• Using computer technology, students will respond to representation of pictures depicting life needs of animals.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standard:
1.L.2.1. Students are able to describe physical similarities and differences between parents and offspring.

Extended Content:
1.A.L.2.1. Students will recognize physical similarities between parents and offspring.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will identify two physical similarities between parents and offspring.	• When given pictures of body parts, students will indicate at least two similarities between parents and offspring.
Applying: Students will recognize physical similarities between parents and offspring.	• Bring in pictures of families to discuss similarities between parent/child.

Developing: Students will recognize physical features between parents and offspring.	• When presented with pictures, of parents and offspring, students will match according to features. **Example:** Match pictures of baby animals to their parent, etc…
Introducing: Students will explore physical features between parents and offspring.	• Using computer technology, the students will respond to pictures of parents and their offspring. **Examples:** 1. Explore book: Are you my mother? 2. Use switch to answer yes/no if animal could be mother.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard:
1.L.3.1. Students are able to relate characteristics of plants and animals that allow them to live in specific habitats.

Extended Content:
1.A.L.3.1 Students are able to identify an animal in its habitat.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to identify two animals and their habitats.	• When presented with pictures, students will label two animals to their habitats. **Examples:** 1. Whale and ocean 2. Lizard and desert
Applying: Students will be able to identify an animal in its habitat.	• Given pictures, students will match the animal to its habitat.
Developing: Students will recognize that an animal has a habitat.	• After attending to stories read, the students will discuss/respond to questions about animals and their habitats.
Introducing: Students will explore an animal in its habitat.	• Using computer technology, the students will respond/explore illustration of animals in their habitat.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard:
1.E.1.1. Students are able to recognize changes in weather over time.

Extended Content:
1.A.E.1.1. Students are able to recognize today's current weather.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize two details of today's current weather.	• Using pictures, students will indicate on a calendar two details of the daily current weather.
Applying: Students are able to recognize today's current weather.	• Using pictures/words, students will select correct response. **Examples:** Sunny, cloudy, raining, snowing
Developing: Students are able to recognize whether it is sunny or rainy.	• Taken outside, student will experience daily weather.
Introducing: Student will respond to representations/ illustrations of the current weather.	• Using computer devices, students will attend to representation of weather.

General Education Standard:
1.E.1.2. Students are able to describe rocks in terms of properties.

Extended Content:
1.A.E.1.2 Students are able to recognize a rock.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to discriminate a rock from another item.	• When given various objects, students will choose the rocks. **Examples:** Rocks, coins, candy, balls, acorns, etc…
Applying: Students are able to recognize a rock.	• When taken outside or given an exploration box, students will locate rocks.
Developing: Students will explore pictures and examples of rocks.	• Attend to various pictures/rocks. • Using pictures, students will match rocks. **Examples:** Match pictures of rocks by color, shape, size, etc.
Introducing: Students are able to explore various rocks.	• Using senses, students will manipulate various rocks.

SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: Mastery is not expected at this grade level.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

SCIENCE GRADE 2

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

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Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
2.P.1.1. Students are able to classify solids in terms of the materials they are made of and their physical properties.

Extended Content:
2.A.P.1.1. Students are able to recognize solids in terms of rough or smooth texture.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify solids in terms of rough or smooth texture.	• Given two objects, the student will indicate whether the texture is rough or smooth.
Applying: Students are able to recognize solids in terms of rough or smooth texture.	• Given objects of rough or smooth textures, students will match rough to rough and smooth to smooth. **Examples:** 1. Sandpaper to sand paper 2. Paper to paper
Developing: Students are able to explore solids with rough or smooth textures.	• When presented with two textures, the student will discover rough versus smooth.
Introducing: Students are able to respond to various texture solids.	• Given smooth and rough textures, student will explore the differences. **Examples:** Sand paper, felt, paper, wood, bark, etc…

General Education Standard:
2.P.1.2. Students are able to describe visually observable properties of liquids and classify liquids by their physical properties.

Extended Content:
2.A.P.1.2. Students are able to recognize that liquids can change colors.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate changes in colors of liquids.	**Examples:** 1. Mix kool-aid with water 2. Mix food color with water
Applying: Students are able to recognize that liquids can change colors.	• Given various substances, students will indicate if the substance will change the color of water.
Developing: Students are able to explore the changes in the color of liquids.	• Given water and substances, students will mix, observe, or attend to substances to discover the changes in color. **Examples:** Paint, chocolate syrup, Kool-aid
Introducing: Students are able to explore liquids.	• Explore with water. • Move hands and feet through a liquid.

General Education Standard:
2.P.1.3. Students are able to identify mixtures of solid substances and ways to separate them.

Extended Content:
2.A.P.1.3. Students are able to recognize mixtures of solid substances.

Extended Content Grade level Achievement Descriptor	Target Skills
Advancing: Students are able to demonstrate a mixture of solid substances.	• Mix various solid substances. **Example:** Trail mix
Applying: Students are able to recognize mixtures of solid substances.	• When given a mixture of three substances, students will sort the solids.
Developing: Students are able to explore mixtures of solid substances.	• Discover different solid mixtures. **Examples:** Mix solids to form cookie dough
Introducing: Students are able to respond mixtures of solid substances.	• Manipulate/touch with various solid substances such as beans, marshmallows, cotton balls, etc…

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standard:
2.P.2.1. Students are able to demonstrate how moving objects exhibit different types of motion.

Extended Content:
2.A.P.2.1. Students are able to compare moving objects of fast and slow motion.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify fast and slow motion of moving objects.	• Given one fast and one slow moving object, student will indicate the speed of the object.
Applying: Students are able to compare moving objects of fast and slow motion.	• Given one fast and one slow moving object, student will choose the fast/slow object when prompted.
Developing: Students are able to recognize that moving objects move fast or slow.	• Given moving objects, students will explore fast motion. **Examples:** Toy cars and tops • Given moving objects, students will explore slow motion. **Examples:** Honey and snails.
Introducing: Students are able to explore how moving objects exhibit different types of motion.	• Manipulate moving objects such as cars, tops, balls, etc…

General Education Standard:
2.P.2.2. Students are able to predict the effects of magnets on other magnets and other objects.

Extended Content:
2.A.P.2.2. Students are able to identify the effects of magnets on other objects.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare effects of magnets on other objects.	• Given two materials, student will choose the one that will attract the magnet.

Applying: Students are able to identify the effects of magnets on other objects.	• Indicate if an object will attract a magnet.
Developing: Students are able to recognize effects of magnets on various materials.	• Given various materials, the student will explore the effects of magnets on each material such as paper, wood, paper clips, scissors, etc…
Introducing: Students are able to explore the function of magnets.	• Given a magnet, student will pick up or observe metal objects with assistance.

Indicator 3: Analyze interactions of energy and matter.

General Education Standard:
2.P.3.1. Students are able to compare sounds in terms of high pitch, low pitch, loud and soft (volume).

Extended Content:
2.A.P.3.1. Students are able to recognize sounds/vibrations in terms of loud and soft (volume).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate loud and soft (volume).	• Talk with loud and soft voices. • Create a loud or soft sound using an object.
Applying: Students are able to recognize sounds/vibration in terms of loud and soft (volume).	• Using a T-chart and pictures, student will choose if the picture indicates a loud or soft sound and place the picture in the correct column. **Examples:** Drums, cutting paper, whistle, vacuum, sweeping, etc… • Use cassette tape from Sound Lotto game to indicate if sound is loud or soft.
Developing: Students are able to indicate loud and soft volume.	• Given two sounds, the student will indicate the loud or soft sound. **Examples:** 1. Talk loud vs. whisper 2. Rolling ball vs. bouncing ball
Introducing: Students are able to respond to sounds/vibrations.	• Given loud and soft sounds, student will show a response. **Examples of responses:** Laughter, screaming, gestures, etc...

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
2.L.1.1. Students are able to classify plants according to similarities and differences.

Extended Content:
2.A.L.1.1. Students are able to recognize different shapes of leaves.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to identify leaves according to the shape of the leaves.	• Indicate different shapes of leaves.
Applying: Students will be able to recognize different shapes of leaves.	• When given pictures/models, students will match different shapes of leaves.
Developing: Students will be able to explore different shapes of leaves.	• Using their senses, students will attend to the presentation/activity of different shapes of leaves.
Introducing: Students will be able to respond to different shapes of leaves.	• Using their senses, students will respond with vocalization/movement to the representations of different shapes of leaves such as spider plant and fern. • Switch activity to view different illustrations of leaves.

General Education Standard:
2.L.1.2. Students are able to classify people and animals according to similarities and differences.

Extended Content:
2.A.L.1.2. Students are able to recognize animals according to similarities.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to identify three types of animals according to similarities.	• Given illustrations of 3 types of animals, student will indicate the animal's similarities.
Applying: Students are able to recognize animals according to similarities.	• When given pictures, students will match similar kinds of animals. **Examples:** Color, size, habitat, etc…
Developing: Students will be able to explore similar types of animals.	• Attend and respond to games and stories of similar animals.

Introducing: Students will be able to respond to animals.	• Using computer technology, students will respond to representation of kinds of similar animals. • Use switch to access different pictures of similar animals.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standard:
2.L.2.1. Students are able to describe how flowering plants go through a series of orderly changes in their life cycle.

Extended Content:
2.A.L.2.1. Students are able to recognize a basic life cycle of a plant.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to label the basic life cycle of a plant.	• Illustrate and label or sequence the basic life cycle of a plant.
Applying: Students are able to recognize a basic life cycle of a plant.	• Using pictures, students will match them to the life cycle of a plant.
Developing: Students are able to explore the basic life cycle of a plant.	• Attend to a story of the life cycle of a plant.
Introducing: Students are able to respond to the different stages of a plant life cycle.	• Using computer technology, students will respond to representation of a plant life cycle.

General Education Standard:
2.L.2.2. Students are able to compare life cycles of various living things.

Extended Content:
2.A.L.2.2. Students are able to recognize a life cycle of an animal.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to label the different stages of an animal's life cycle.	• Illustrate/sequence the different stages of an animal's life cycle.
Applying: Students are able to recognize a life cycle of an animal.	• Given pictures, students will match pictures to sequence a life cycle of an animal.
Developing: Students will be able to explore a life cycle of an animal	• Attend and respond to stories of an animal's life cycle. **Examples:** Butterfly, frog, beetle, etc…
Introducing: Students will be able to respond to a life cycle of an animal.	• Using computer technology, students will access a switch, respond or attend to representation of an animal life cycle.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard:
2.L.3.1. Students are able to describe ways that plants and animals depend on each other.

Extended Content:
2.A.L.3.1. Students are able to recognize animals that depend on plants for food.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to identify animals that eat plants.	• Use a T-chart to indicate animals and the food they eat. **Examples**: 1. Cow and grass 2. Horse and grass
Applying: Students are able to recognize animals that depend on plants for food.	▪ Using pictures, students will match animals to the food they depend on.
Developing: Students will be able to explore animals that depend on plants for food.	• Attend to stories of animals and the food they eat.
Introducing: Students will be able to respond to illustrations of animals that depend on plants for food.	• Access a switch to view illustrations of animals and food they eat. • Use senses to explore the physical attributes of the animal and the food they eat. **Examples:** Feel hay, grass, oats, corn

General Education Standard:
2.L.3.2. Students are able to associate adaptations in plants and animals in response to seasonal changes.

Extended Content:
2.A.L.3.2. Students are able to recognize an animal that adapts to a seasonal change by hibernation.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to identify an animal that hibernates.	• When given choices, student will indicate the animals that hibernate.
Applying: Students are able to recognize an animal that adapts to a seasonal change by hibernation.	• Given pictures, students will sort animals that do hibernate and animals that do not hibernate.
Developing: Students will be able to explore animals that hibernate.	• Using a blanket and a table, students will pretend to hibernate .
Introducing: Students will be able to respond to the concept of hibernation.	• Using computer technology, students will respond to representations of animals hibernating. • Respond to sensory activities that depict the process of hibernation.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard: **2.L.3.3. Students are able to recognize what it means for a species to be extinct or endangered.** **Extended Content:** **2.A.L.3.3. Students are able to recognize an extinct species.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to label that a species no longer exists.	• Create a representation of an extinct species. • Using a T-chart, student will indicate if the species is extinct or not.
Applying: Students are able to recognize an extinct species.	• When given pictures, students will match extinct species.
Developing: Students will explore pictures of extinct species.	• Attend to stories of extinct species.
Introducing: Students will respond to illustrations/media of extinct species**.**	• Using computer technology, student will respond to a representation of extinct species. • Explore manipulative of extinct species.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard: **2.E.1.1. Students are able to describe types and patterns of weather during different seasons**. **Extended Content:** **2.A.E.1.1. Students are able to recognize different types of weather.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students will be able to identify different types of weather.	• Students will indicate types of weather on a calendar. **Example:** Weather graph
Applying: Students are able to recognize different types of weather.	• When given pictures, students will match types of weather. **Examples:** 1. Rainy to rainy 2. Sunny to sunny

Developing: Students will be able to explore different types of weather.	• When taken outside, the students will experience different types of weather. • Attend to stories about different types of weather.
Introducing: Students will be able to respond to different types of weather.	• Using computer technology, the students will respond by movement/vocalization to illustrations of weather types.

General Education Standard:
2.E.1.2. Students are able to identify and locate geological features using maps and globes.

Extended Content:
2.A.E.1.2. Students are able to recognize different geological features on maps.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will label two different geological features on maps.	• Given two labels, student will correctly place on tactile map.
Applying: Students are able to recognize different geological features on maps.	• Given a geographic term, student will match the correct feature.
Developing: Students will explore differences of two geological features.	• Given a tactile map, the student will distinguish between features. **Examples:** 1. Mountain vs. river 2. Lake vs. flat lands • Match geological features.
Introducing: Students will explore geological features on maps.	• Given a tactile map, the student will touch mountains, rivers, lakes, and flat lands. (assistance may be needed)

General Education Standard:
2.E.1.3. Students are able to recognize and distinguish between forms of water in the Earth system.

Extended Content:
2.A.E.1.3. Students are able to recognize lakes and rivers.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to recognize a lake or a river on a map.	• When given a map, the student will indicate lake and river.
Applying: Students are able to recognize lakes and rivers.	• When given pictures of lakes and rivers, students will match the pictures.
Developing: Students will be able to explore a lake and river.	• When given a tactile map of lake/river, students will respond with their senses. • Attend to stories including lakes and rivers.

Introducing: Students will be able to respond to a presentation about a lake and river.	• Using computer technology/tactile map, students will respond to the presentation of lake and river by movement/vocalization. • Tactilely explore a model of a river or lake.

SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY STANDARDS

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

Note: Mastery is not expected at this grade level.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

SCIENCE GRADE 3

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
3.P.1.1. Students are able to describe physical properties of matter using the senses (touch, smell, etc.).

Extended Content:
3.A.P.1.1. Students are able to identify physical properties of matter using the senses (touch, smell, etc.).

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to differentiate between physical properties of matter using the senses (touch, smell, etc.).	• Classify matter according to the physical properties. **Examples:** See color; feel size, shape, hardness, smell, etc. • Label items as solids or liquids.
Applying: Students are able to identify physical properties of matter using the senses (touch, smell, etc.).	• Identify the physical properties of an item by category. **Example:** An orange is round, smooth, scented. • Differentiate between a solid and a liquid by sorting.
Developing: Students are able to recognize physical properties of matter using the senses (touch, smell, etc.).	• Match identical pictures of solids and liquids. **Examples:** Juice-juice, ball-ball
Introducing: Students are able to respond to physical properties of matter using the senses (touch, smell, etc.).	• Respond to various sensory stimuli. **Examples:** Scented jars, light box, computer activities, sound activities, music, light touch, deep pressure, vibration, food • Explore various solid and/or liquid objects through any of the sensory modes.

General Education Standard:
3.P.1.2. Students are able to use tools to relate composition to physical properties.

Extended Content:
3.A.P.1.2. Students are able to use tools to recognize the makeup of matter.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use a variety of tools to observe the makeup and changes of matter.	• Demonstrate use of tools to complete an experiment. **Examples:** Thermometer, magnifying glass, microscope, scale, measuring cups • Recognize changes in matter from one state to another. **Example:** Ice cube, ice cream, marshmallows, melting crayons
Applying: Students are able to use tools to recognize the makeup of matter.	• Given two tools, the student will choose the appropriate tool to complete an experiment. • Observe a change in matter. **Example:** Snowman, ice cube, baking a cake
Developing: Students are able to use tools to explore matter.	• Explore a variety of tools. **Example:** Use a water table and sand table to dump and pour. • Imitate the use of tools to facilitate a change in matter. **Example:** Pretend to use a hammer or hand mixer.

Introducing: Students are able to explore the use of tools.	• Explore a variety of tools through the use of assistive technology. • Under supervision, use an adapted tool to facilitate a change in matter. **Example:** Micro switch to operate blow dryer to melt an ice cube.

General Education Standard:
3.P.1.3. Students are able to demonstrate how a different substance can be made by combining two or more substances.

Extended Content:
3.A.P.1.3. Students are able to demonstrate how a different substance can be made by combining two substances.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate how a different substance can be made by combining more than two substances.	• Conduct an experiment. • Follow a recipe using a combination of solids and liquids.
Applying: Students are able to demonstrate how a different substance can be made by combining more than two substances.	• Combine a solid and a liquid to create a mixture. **Example:** Play dough, Oobleck (cornstarch and water), Silly Putty, • Label as a mixture or substances. **Example:** Each item in the trail mix is a substance, but when combined they create a mixture.
Developing: Students are able to combine substances.	• Combine a variety of solids or liquids to create a mixture. **Example:** Nestlé's Quik and milk, cereal and milk, salad and salad dressing • Stir and mix to facilitate change. • Label as a mixture or substance. **Example:** Able to control unit hooked to blender or mixer, picture cues, switches
Introducing: Students are able to demonstrate responses to different mixtures.	• Through manipulation/touch explore different mixtures. • Using assistive technology, select substances to create mixtures.

Indicator 3: Analyze interactions of energy and matter.

General Education Standard:
3.P.3.1. Students are able to define energy and differentiate between sources of renewable and non-renewable energy.

Extended Content:
3.A.P.3.1. Students are able to identify sources of renewable and non-renewable energy.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to differentiate between sources of renewable and non-renewable energy.	• Sort objects according to renewable and non-renewable sources. • Categorize classroom objects that use energy into renewable and non-renewable sources using a T-chart or graph.
Applying: Students are able to identify sources of renewable and non-renewable energy.	• Match different sources of renewable and non-renewable energy with an object. **Example:** Kite-wind, pinwheel-wind, coal-heat, movement-water • Identify objects in the classroom that use energy. **Example:** CD player, computer, fan, pencil sharpener
Developing: Students are able to recognize sources of energy.	• Observe the movement of wind energy. **Example:** Kite, pinwheel • Match different sources of energy. **Example:** Wind, water, coal, oil
Introducing: Students are able to respond to sources of energy.	• Access a switch hooked up to various examples of energy sources. **Example:** Fan**,** waterfall, light bulb • Explore different types of energy through visual, auditory and tactile technology. **Example:** IntelliKeys

General Education Standard:
3.P.3.2. Students are able to demonstrate how sound consists of vibrations and pitch.

Extended Content:
3.A.P.3.2. Students are able to recognize that sound consists of vibrations and pitch.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate how sound consists of vibrations and pitch. *(Continued on next page)*	• Experiments with vibrations through various means to demonstrate an understanding of vibrations. **Example:** Tuning fork, rubber band • Experiments with pitch through various means to

	demonstrate an understanding of pitch. **Example:** pitch pipe, recorders, water glasses
Applying: Students are able to recognize that sound consists of vibrations and pitch.	• Uses appropriate voice for situations to recognize the difference between loud and soft sounds. **Example:** Outside/inside voice, feel vibrations from vocal chords • Experiments with vibrations through various means to recognize an understanding of vibrations. **Example:** Tuning fork, feel vibrations from vocal chords
Developing: Students are able to distinguish between vibrations and pitch.	• Listen to various musical pieces and indicate pitch by raising their hand to indicate a pitch. **Example:** Student indicates with hand, head, etc. if pitch is high or low. • Experiences vibrations through senses. **Example:** Feel vibration from: 1. Turning bass up on music 2. Stand by building as planes take off 3. Machinery sounds at a construction site
Introducing: Students are able to respond to loud and soft sounds.	• Responds to loud and soft sounds. • Responds to feel of vibrations on musical instruments. **Example:** Somatron (mat infused with vibration and pitch for music)

General Education Standard:
3.P.3.3. Students are able to identify how sound is used as a means of communication.

Extended Content:
3.A.P.3.3. Students are able to identify that sound is used as a means of communication.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify how sound is used as a means of communication.	• Relates a response to a specific sound. **Examples:** Recess bell rings – line up, fire alarm go outside • Gives examples of kinds of communication. **Examples:** Telephone ringing, train whistle, voices
Applying: Students are able to identify that sound is used as a means of communication.	• Make a sound to start an activity. **Example: "**When Jimmy claps (or signals), we will eat his birthday treat."
Developing: Students are able to identify various sounds.	• Matches sound to a specific object. **Example:** Sound Lotto, computer programs, IntelliKeys • Matches sound to a source. **Example:** Fire alarm, kitchen timer, dryer, microwave

Introducing: Students are able to respond to various sounds.	• Demonstrates a differential response to specific environmental sounds. **Example:** Student jumps at sound of sirens or alarms • Explores toys that produce sounds.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
3.L.1.1. Students are able to identify the basic structures, functions, and needs of plants in relation to their environment.

Extended Content:
3.A.L.1.1. Students are able to identify the basic needs of plants.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify basic structures and needs of plants.	• Identify stem, leaves, roots, flowers. • Using a diagram, student will link word/symbol to structure. • Identify sun, air, soil and water as needs of plants. • Conduct an experiment with variables of light, water or soil.
Applying: Students are able to identify the basic needs of plants.	• Take care of the basic needs of a plant. • Under supervision, conduct an experiment with variables of light, water or soil. **Example:** Put seed in a sealed plastic bag with damp paper towel and another seed in sealed plastic bag with dry paper towel.
Developing: Students are able to recognize the basic needs of plants.	• With supervision, take care of the basic needs of a plant. • Put together a puzzle depicting a plant.
Introducing: Students are able to explore plants.	• Attends to the different needs of plants using assistive technology. • Access technology to attend to pictures of different plants.

General Education Standard:
3.L.1.2. Students are able to identify characteristic features of animals and their related functions in relation to their environment.

Extended Content:
3.A.L.1.2. Students are able to identify characteristics of animals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize the purpose of an animal's feature in the environment.	• Indicate what the feature of an animal is to its function in the environment. **Example:** Fish has fins to swim, duck has webbed feet to swim, bird has wings to fly • Using technology, research an animal's feature and its function in the environment.
Applying: Students are able to identify characteristics of animals.	• Identify basic characteristics of animals. **Example:** Fish-fins, duck-webbed feet, • Match a feature to an animal.
Developing: Students are able to recognize characteristics of animals.	• Recognize basic characteristics of animals. • Match the characteristics of animals. • Sort picture cards.
Introducing: Students are able to explore characteristic features of animals.	• Using the senses, students will respond to animal characteristics. **Example:** Touch fur, feathers, scales, snake skin

General Education Standard:
3.L.1.3. Students are able to describe life cycles, including growth and metamorphosis, of familiar organisms.

Extended Content:
3.A.L.1.3. Students are able to recognize various life cycles.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate parts of a life cycle.	• Using technology, participate in science activities about the life cycle. **Example:** Websites, Kids Inspiration (software program) • Identify the parts of a butterfly's life cycle. **Example:** Egg, larva/caterpillar, cocoon/chrysalis, butterfly
Applying: Students are able to recognize various life cycles.	• Sequence the life cycle of an animal. • Classroom observation of life cycles. **Example:** Butterfly, frog
Developing: Students are able to recognize a life cycle. *(Continued on next page)*	• Participate in the reading of books based on life cycles. **Example:** Very Hungry Caterpillar

	• Match pictures of a life cycle.
Introducing: Students are able to explore a life cycle.	• Attend to books based on life cycles. **Example:** Very Hungry Caterpillar • Participate/attend to activities about the life cycle.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standard:
3.L.2.1. Students are able to explain how animals instinctively meet basic needs in their environment.

Extended Content:
3.A.L.2.1. Students are able to identify the basic needs of animals.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize how a specific animal adapts to the environment.	• Select a specific animal and identify its adaptation to the environment. **Example:** Snowshoe rabbit, chameleon, • Use library books to research different animals' adaptations.
Applying: Students are able to identify the basic needs of animals.	• Identify food, water and shelter as basic needs of an animal. • Take care of the basic needs of an animal. **Example:** Feed fish
Developing: Students are able to recognize the basic needs of animals.	• With supervision, take care of basic needs of an animal.
Introducing: Students are able to explore the basic needs of animals.	• Attends to the different needs of animals using assistive technology. • Access technology to attend to pictures of different animals eating, playing, and grooming.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard:
3.L.3.1. Students are able to describe how species depend on one another and on the environment for survival.

Extended Content:
3.A.L.3.1. Students are able to identify a specific relationship between a plant and animal.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe how plants and animals need each other. *(Continued on next page)*	• Use a graphic organizer to depict the relationship between plants and animals. **Examples:**

	1. Animal transports seeds. 2. Bees pollinate plants. • Using technology, research the relationship between plants and animals.
Applying: Students are able to identify a specific relationship between a plant and animal.	• Recognize the relationship between a plant and an animal. **Example:** Bees help flowers. • Match a picture of a bee to a flower. • Take a nature field trip to observe the specific relationship between a plant and animal.
Developing: Students are able to recognize a specific relationship between a plant and animal.	• Match identical pictures of relationships between a plant and an animal. **Example:** Picture of a bee/flower to a picture of a bee/flower • Participate in the reading of books that depict a relationship between a plant and an animal.
Introducing: Students are able to explore relationships between plants and animals.	• Attend to books that depict a relationship between a plant and an animal. • Use a switch to explore illustrations of the relationship between plants and animals.

General Education Standard:
3.L.3.2. Students are able to explain how environments support a diversity of plants and animals.

Extended Content:
3.A.L.3.2. Students are able to recognize different environments.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify different environments.	• Identify desert, ocean, rainforest. • Identify a living plant/animal that would survive in that specific environment. • Create a simple model of an environment.
Applying: Students are able to recognize different environments.	• Recognize living plant/animal that would survive in that specific environment. **Example:** Word bank, pictures • Sort plants/animals to the environments in which they belong.
Developing: Students are able to recognize an environment.	• Match plants/animals to different environments. • Sort pictures by what can be found in the environment. • Create an art project related to a different environment.
Introducing: Students are able to explore an environment.	• Dig through sand, mist on hands, grass clippings, shaved ice. • Respond to presentation of different elements of environments.

General Education Standard:
3.L.3.3. Students are able to describe ways humans impact air, water, and habitat quality.

Extended Content:
3.A.L.3.3. Students are able to recognize a way that people affect the environment.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize more than one way that people affect the environment.	• Recognize air and water pollution as ways people affect the environment. **Example:** Littering, car fumes
Applying: Students are able to recognize a way that people affect the environment.	• Recognize littering or pollution as a way people affect the environment.
Developing: Students are able to explore how people affect the environment.	• Recognize pictures/activities that reflect how people affect the environment.
Introducing: Students are able to respond to pictures/activities that reflect how people affect the environment.	• Respond to illustrations/sounds that affect the environment.

General Education Standard
3.L.3.4. Students are able to examine fossils and describe how they will provide evidence of change in organisms.

Extended Content
3.A.L.3.4. Students are able to recognize a fossil.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify a fossil.	• Given a model, match a picture. **Example:** bone to a dinosaur • Create a fossil. **Example:** Using Plaster of Paris, create a fossil from leaves, shell, bones, etc.
Applying: Students are able to recognize a fossil.	• Sort fossils from non-fossils.
Developing: Students are able to explore fossils.	• Match pictures of fossils. • Using various media, explore various fossils.
Introducing: Students are able to manipulate fossils.	• Using senses, explore various fossils.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard:
3.E.1.1. Students are able to define the difference between a rock and a mineral.

Extended Content:
3.A.E.1.1. Students are able to identify physical properties of rocks.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe physical properties of rocks.	• Sort and label rocks by their physical properties. **Example:** Color, size, texture • When given choices, identify three rocks.
Applying: Students are able to identify physical properties of rocks.	• Match rocks by similar physical properties. (color, size, texture) • When given choices, identify two rocks by their properties.
Developing: Students are able to explore physical properties of rocks.	• Recognize different physical properties of rocks. **Example:** Is it hard? Is it soft? What is the color? • Select a rock from a variety of items.
Introducing: Students are able to respond to physical properties of rocks.	• Explore the different physical properties of rocks. **Example:** Tactile exploration of the rocks. • Label an item as a rock. **Example:** Use picture cues, voice output, object cues, computer.

General Education Standard:
3.E.1.2. Students are able to describe how humans use Earth's natural resources.

Extended Content:
3.A.E.1.2. Students are able to recognize two natural resources.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize three natural resources that people use.	• Categorize from a group of pictures types of natural resources and their uses. **Example**: Water – drinking, cleaning, or transportation • Recognize that a natural resource can take on various forms. **Example:** Tree-paper-napkin
Applying: Students are able to recognize two natural resources.	• Identify natural resources by choosing from picture cues.
Developing: Students are able to recognize one natural resource.	• Match pictures of natural resources. **Example**: Picture to picture • Find items in classroom that came from natural resources.

Introducing: Students are able to participate in activities involving natural resources.	• Use a switch to activate pictures of natural resources. **Examples:** Use IntelliKeys, Internet files, Powerpoint. • Participate in planting a fruit tree.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standard:
3.E.2.1. Students are able to identify the Earth as one of the planets that orbit the Sun.

Extended Content:
3.A.E.2.1. Students are able to recognize Earth as the planet upon which they live.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize the location of the Sun and Earth.	• Select Sun and Earth from a visual representation such as map or globe. • Create a visual of Sun and Earth demonstrating location of each.
Applying: Students are able to recognize Earth as the planet upon which they live.	• Identify physical features of Earth. **Example:** 1. Earth is round, blue, white, green 2. Look at visual representation - globes, videos • Responds correctly to yes or no questions. **Example:** Do you live on Earth? Is the Earth round?
Developing: Students are able to recognize Earth.	• Given picture cards, students will select pictures of Earth. • Recognize physical features of Earth. • Match identical pictures of Earth.
Introducing: Students are able to respond to a visual presentation of Earth.	• Attend to illustrations/books about Earth. **Example:** Picture of Earth on computer screen, picture of Earth on IntelliKeys, etc.

General Education Standard:
3.E.2.2. Students are able to recognize changes in the appearance of the Moon over time.

Extended Content:
3.A.E.2.2. Students are able to recognize two phases of the moon.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify three phases of the moon. *(Continued on next page)*	• Identify a new moon. • Identify a full moon. • Identify a half moon.

	• Recognize the moon doesn't change shape.
Applying: Students are able to recognize two phases of the moon.	• Identify a new moon. • Identify a full moon.
Developing: Students are able to recognize the moon.	• Recognize the features of the moon. **Examples:** White, glows, shadows, light side, dark side. Read Papa, Please Get the Moon for Me by Eric Carle • Match various phases of the moon. **Example**: Use picture cues to match various phases of the moon
Introducing: Students are able to respond to the moon through various visual aids.	• Using media, students attend to various pictures of the moon.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standard:
3.S.1.1. Students are able to recognize ways to recycle, reuse, and reduce consumption of natural resources.

Extended Content:
3.A.S.1.1. Students are able to recognize items to recycle.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize items that can be recycled and reused.	• Locate items that can be recycled. • Recognize different ways to reuse an item.
Applying: Students are able to recognize items to recycle.	• With a visual cue, sort recyclable and non-recyclable items. • Given a set of recyclable items, sort items into appropriate bin.
Developing: Students are able to recognize the symbols for recycling.	• Match recycling symbols. • Match product labels to recycling symbols.
Introducing: Students are able to recycle.	• Use assistive technology to recycle. **Example:** Hit a switch to crush cans or shred paper. • Through the use of assistive technology observe the sequence of recycling.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

SCIENCE GRADE 4

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
4.P.1.1. Students are able to describe observable physical changes and properties in matter.

Extended Content:
4.A.P.1.1. Students are able to recognize the stages of matter.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe the stages of matter.	• Using a class-generated graph, students will chart the change from a solid to a liquid. • Using a class-generate graph, students will chart the change from a liquid to a solid.
Applying: Students are able to recognize the stages of matter.	• Sequence the stages of matter with picture cues. • Participate in an experiment with the change from a solid to a liquid. **Example:** Melting a chocolate bar.
Developing: Students are able to observe the stages of matter.	• Observe an experiment with the change from a solid to a liquid. **Example:** Hold an ice cube and watch it melt. • Match picture cards. • Complete a puzzle depicting changes in matter.
Introducing: Students are able to explore the stages of matter.	• Explore stages of matter through senses/technology. **Example:** Touch an ice cube, observe steam

General Education Standard:
4.P.1.2. Students are able to explain how some physical properties remain the same as the mass is changed.

Extended Content:
4.A.P.1.2. Students are able to recognize the physical characteristics that remain the same as the size is changed.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify the physical characteristics that remain the same as the size is changed.	• Communicate the characteristics that remain the same while the size changes. **Example:** Scattered crayons and bundled crayons, -- color, odor and texture don't change with size.
Applying: Students are able to recognize the physical characteristics that remain the same as the size is changed.	• Sort objects with similar characteristics but different sizes. **Example:** Baseball and golf ball (same color but different sizes) • Conduct experiments in which the physical properties stay the same while the size changes. **Example:** Breaking suckers, breaking candy bar or cookie, varying bouncy ball sizes
Developing: Students are able to discriminate the physical characteristics of an item that has changed in size.	• Match big items with little items of similar characteristics.
Introducing: Students are able to explore physical characteristics as objects change in size.	• Explore the physical similarities of objects that are big and small. **Examples:** 1. Rock vs. sand 2. Coconut flake vs. whole coconut

General Education Standard:
4.P.1.3. Students are able to differentiate between the states of matter caused by changes in temperature using water.

Extended Content:
4.A.P.1.3. Students are able to recognize two states of water.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize three states of water.	• Experiment with heating and cooling of water. • Illustrate the three states of water. • Sequence the three states of water. **Example:** Sequence - solid, liquid, gas (ice, water, vapor)
Applying: Students are able to recognize two states of water.	• Experiment with the liquid and solid states of water. **Example:** Kool-Aid=popsicles • Sort pictures by liquid or solid state.
Developing: Students are able to recognize one state of water.	• Match identical pictures of the liquid state of water.
Introducing: Students are able to explore the different states of water.	• Explore different states of water using senses. **Examples:** Water table, steam, ice • Respond to presentation of the different states of water.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standard:
4.P.2.1. Students are able to demonstrate how forces act over a distance.

Extended Content:
4.A.P.2.1. Students are able to identify forces.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate forces.	• Locate forces on the playground or in the classroom. • Experimenting with forces in the classroom. **Example:** Magnets, fan
Applying: Students are able to identify forces.	• Match picture cards. • Select an appropriate force for a specific activity. **Example:** Closing a book, pushing the chair in, closing the desk top
Developing: Students are able to recognize forces.	• Use everyday objects to experiment with forces. **Example:** Pushing door, rolling ball • Explore with objects. **Example:** Blowing through a straw, Hot Wheel cars
Introducing: Students are able to explore how forces act.	• Activate a switch to demonstrate or observe a force. **Example**: Fan

Indicator 3: Analyze interactions of energy and matter.

General Education Standard:
4.P.3.1. Students are able to identify materials as being conductors or insulators of electricity.

Extended Content:
4.A.P.3.1. Students are able to identify conductors and insulators of electricity.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to distinguish between conductors or insulators of electricity.	• Create a T-chart of conductors and insulators. **Example:** Provide a box of materials and the student chooses the conductors and insulators. • Participate in experiments that demonstrate good/poor conductors and insulators. **Example:** Light bulb
Applying: Students are able to identify conductors and insulators of electricity.	• Label an item that is a conductor. • Label an item that is an insulator.
Developing: Students are able to recognize conductors and insulators of electricity.	• Turn on/off items. • Match pictures that are sources of energy to items that require energy.
Introducing: Students are able to participate in experiments with conductors or insulators of electricity.	• Use a switch in order to participate in an activity that conducts electricity.

General Education Standard:
4.P.3.2. Students are able to construct and define a simple circuit.

Extended Content:
4.A.P.3.2. Students are able to recognize a simple circuit.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify a simple circuit.	• Participate in experiments that demonstrate simple circuits. • Using a word bank, label parts of a simple circuit.
Applying: Students are able to recognize a simple circuit.	• Choose items that are needed to complete a simple circuit. **Example:** When provided a box of materials, the student chooses items that can be used to create a simple circuit. • Observe experiments that demonstrate a simple circuit.
Developing: Students are able to recognize some parts of a simple circuit. *(Continued on next page)*	• Recognize materials that could be used in a simple circuit. **Example:** Battery, wire, bulb • Match identical pictures of materials used in a

	simple circuit. **Example:** Battery-battery, bulb-bulb
Introducing: Students are able to participate in experiments that demonstrate a simple circuit.	• Use a switch to activate a simple circuit.

General Education Standard:
4.P.3.3. Students are able to use magnets, electromagnets, magnetic fields, and compasses to explore magnetic energy.

Extended Content:
4.A.P.3.3. Students are able to use magnets to demonstrate attraction and repulsion.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize the capabilities of magnets.	• Explore the everyday use of magnets. **Examples:** Electric can opener, cabinet doors, paper clip holder, white boards • Visuals/pictures/videos/websites of magnetic use in the world. **Examples:** Garbage crane, lifter used to demolish cars. • Participate in experiments that demonstrate the capabilities of magnets. **Example:** Will two magnets pick up more than one?
Applying: Students are able to use magnets to demonstrate attraction and repulsion.	• Use magnets to choose items that attract. • Use magnets to choose items that repel. **Example:** Experiment with poles (S-S, N-N, N-S)
Developing: Students are able to use magnets to demonstrate items that attract.	• Use magnets to find items that attract. • Explore toys that demonstrate attraction. **Example:** Etch-A-Sketch, Magnadoodle, magnetic building blocks, Zingers
Introducing: Students are able to explore the force of magnets with teacher supervision.	• Participate in an activity that involves magnets. **Example:** Magnet and iron-fortified cereal. • Respond to presentation of magnets. • Explore different stimuli through magnets.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
4.L.1.1. Students are able to identify the basic systems (digestive, skeletal, muscular, nervous, respiratory, and circulatory) and major organs.

Extended Content:
4.A.L.1.1. Students are able to recognize various parts of the skeletal system.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify various parts of the skeletal system.	• Using a model, students will label parts of the skeletal system. • Using media, students will research the skeletal system.
Applying: Students are able to recognize various parts of the skeletal system.	• With supervision, trace body and use a word bank to label parts of the skeletal system. • Using media, students will research the skeletal system.
Developing: Students are able to recognize that the body is made of bones.	• Put a puzzle together depicting bones of the body. • Participate/imitate in songs and books about the bones of the body.
Introducing: Students are able to explore that the body is made of bones.	• Using senses, attend to songs and books about the bones of the body. • Use technology to explore illustrations/songs/book related to bones in the body.

General Education Standard:
4.L.1.2. Students are able to differentiate between vertebrates and invertebrates, and classify the five groups of vertebrates (mammal, reptile, amphibian, bird, and fish) based on characteristics.

Extended Content:
4.A.L.1.2. Students are able to recognize some animals have backbones.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize some animals do not have backbones.	• Use a classroom generated graphic organizer to sort animals with/without backbones. • Illustrate an animal without a backbone.

Applying: Students are able to recognize some animals have backbones.	• Recognize animals with backbones. **Examples:** Guest speaker, field trip, illustrations, books, media • Locate a backbone on an animal.
Developing: Students are able to recognize animals have bones.	• Put a puzzle together depicting animals with bones. • Color illustrations of animals with backbones. • Participate in songs and books about animals with bones.
Introducing: Students are able to explore animals with bones.	• Using senses, attend to songs and books about animals with bones. • Use technology to explore animals and their bones.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standard:
4.L.2.1. Students are able to identify behavioral and structural adaptations that allow a plant or animal to survive in a particular environment.

Extended Content:
4.A.L.2.1. Students are able to recognize animals that change to survive in a particular environment.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify animals that change to survive in a particular environment.	• Select visuals/create pictures to depict hibernation and migration. • Using media/books, research an animal that hibernates or migrates.
Applying: Students are able to recognize animals that change to survive in a particular environment.	• Select pictures depicting hibernation and migration. • Using media/books, locate an animal that hibernates or migrates.
Developing: Students are able to explore animals that change to survive in a particular environment.	• Match identical pictures of animals. **Example:** 1. Hibernating bear-hibernating bear 2. Migrating bird-migrating bird. • Participate in the reading of stories about hibernation and migration.
Introducing: Students are able to respond to animals that change to survive in a particular environment.	• Attend to a presentation of animals that change to survive.

General Education Standard:
4.L.2.2. Students are able to explain how a size of a population is dependent upon the available resources within its community.

Extended Content:
4.A.L.2.2. Students are able to identify a resource needed to support a community.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify resources needed to support their community.	• Identify banks, gas stations, grocery stores, schools, etc. as resources needed to support a community. • Class field trip around the community to identify resources. • Take tours of community resources.
Applying: Students are able to identify a resource needed to support a community.	• Answer questions related to what resources are created. • Answer questions about resources in the community. **Examples:** 1. Where do you go when you are sick? 2. Where do you buy groceries?
Developing: Students are able to recognize resources in a community.	• Attend to presentation of community resources. • Match pictures of community resources.
Introducing: Students are able to explore resources in the community.	• Class field trip around the community to explore resources. • Attend to pictures of community resources.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard:
4.L.3.1. Students are able to describe the flow of energy through food chains and webs.

Extended Content:
4.A.L.3.1. Students are able to recognize a basic food chain.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize the major parts of a food chain.	• Using a word bank, label parts of a food chain. • Using media, research a food chain. • Sequence picture cards of a food chain.
Applying: Students are able to recognize a basic food chain.	• Match pictures of a food chain. • Select visuals to create a food chain.
Developing: Students are able to explore basic food chains.	• Participate in reading of books about food chains. • Match picture cards of food chains.
Introducing: Students are able to respond to a presentation of a food chain.	• Attend to presentation of a food chain.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard:
4.E.1.1. Student is able to describe the basic stages of the water cycle.

Extended Content:
4.A.E.1.1. Student is able to identify different ways precipitation can occur within the water cycle.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Student is able to describe different ways precipitation can occur within the water cycle.	• Recognize different forms of precipitation in the basic water cycle. **Example:** Snow, rain, sleet, hail • Use visuals to create a picture of precipitation that can occur in the water cycle. • Use media /books to research different forms of precipitation that can occur in the water cycle.
Applying: Student is able to identify different ways precipitation can occur within the water cycle.	• Recognize different forms of precipitation in the basic water cycle. **Example:** Snow, rain, sleet, hail • Illustrate precipitation that can occur in the water cycle.
Developing: Student is able to recognize different ways precipitation can occur within the water cycle.	• Match identical pictures of precipitation. • Participate in the reading of books about precipitation. • Use technology to respond to questions/share information related to different ways precipitation can occur.
Introducing: Student is able to respond to a presentation depicting ways precipitation can occur within the water cycle.	• Respond to illustrations/reality of precipitation.

General Education Standard:
4.E.1.2. Students are able to describe how weather conditions and phenomena occur and can be predicted.

Extended Content:
4.A.E.1.2. The student is able to recognize the current weather condition.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: The student is able to identify the current weather condition.	• Use different media to check the current weather condition. • Graph the current weather condition.
Applying: The student is able to recognize the current weather condition.	• With assistance, use different media to check the current weather condition. • Using pictures, indicate the current weather condition. • Sort weather conditions with picture cues.
Developing: The student is able to recognize illustrations of the current weather condition.	• Match weather conditions with picture cues. • Participate in classroom routine of checking the current weather condition. • Match pictures of different weather condition.
Introducing: The student is able to respond to a question related to the current weather condition.	• Answer yes/no questions about the current weather condition by activating a switch.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standard:
4.E.2.1. Students are able to describe the motions of Earth, Sun, and Moon.

Extended Content:
4.A.E.2.1. The student will be able identify a globe.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: The student will be able to recognize the rotation of a globe.	• Carry out an activity involving rotation. **Example:** Role-play the rotation of the earth.
Applying: The student will be able to identify a globe.	• Label pictures of globes. **Example:** Word bank, picture cues • Distinguish a globe from various round objects.
Developing: The student will be able to recognize a globe.	• Match pictures of different globes. • Answer yes/no to questions about globes.
Introducing: The student will be able to respond to representations of the globe.	• Respond to various visual illustrations of a globe.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standard:
4.S.1.1. Students are able to describe how people continue to invent new ways of doing things, solving problems, and getting work done.

Extended Content:
4.A.S.1.1. The student will be able to recognize three versions of a particular invention.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: The student will be able to recognize the progression of a particular invention.	• Sequence picture cards. **Example:** Pictures of an antique phone, rotary phone, and cell phone. • With assistance, create a timeline. • Guest speakers to talk about progression of inventions. **Examples:** Grandparents, parents, retired teachers
Applying: The student will be able to recognize three versions of a particular invention.	• Explore different versions of the same product. • When presented with three pictures of the same item, student will indicate the most current. **Example:** Most current of an antique phone, rotary phone, or cell phone
Developing: The student will be able to recognize two versions of a particular invention.	• When presented with two pictures of the same item, student will indicate the most current. **Examples:** 1. Typewriter-computer 2. Rotary phone-cell phone • Explore different versions of the same product.
Introducing: The student will be able to respond to different versions of inventions.	• Respond/explore to different media versions of inventions through the use of assistive technology.

General Education Standard:
4.S.1.2. Students are able to explain how new ideas and inventions often affect people.

Extended Content:
4.A.S.1.2. The student will be able to identify a benefit of a new invention.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: The student will be able to identify how a new invention affected his/her life.	• Present new inventions. Student will identify how the invention has impacted his/her life. • Research a new invention on the internet and share a benefit.
Applying: The student will be able to identify a benefit of a new invention.	• When given pictures of new inventions, the student will indicate which invention is most beneficial to him/her. • Conduct a classroom poll to find out which version of an invention has the greatest benefits.
Developing: The student will be able to recognize an invention that has benefited people.	• Locate pictures of people using beneficial new inventions.
Introducing: The student will be able to respond to illustrations of inventions that have benefited people.	• Attend a presentation of media generated illustrations of new inventions that benefit people.

Indicator 2: Analyze the relationship/interactions among science, technology, environment, and society.

Note: Mastery is not expected at this grade level.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

SCIENCE GRADE 5

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science Standards

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

Note: Mastery is not expected at this grade level.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
5.P.1.1. Students are able to define matter on the basis of observable physical properties.

Extended Content:
5.A.P.1.1 Students are able to recognize that matter has weight.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to compare weight.	• Compare objects that have similar size and appearance, but different weight. • Compare two labeled objects of different weights.
Applying: Students are able to recognize that matter has weight.	• Observe the balance scale with and without weights. • Associate common everyday items with their exact weight. **Example:** 5lb can of coffee, a pound of butter
Developing: Students are able to utilize a balance scale.	• Experiment with a balance scale. **Example:** Students place objects on a scale and observe how the balance scale works. • Recognize the uses of a balance scale. **Examples**: Item weight, obtain equal amounts, compare objects
Introducing: Students respond to various weights.	• Using senses respond to various weight. **Example:** Hold various weights, view similar objects with different weights (1 piece of paper, a stack of paper)

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standard:
5.P.2.1. Students are able to identify forces in specific situations that require objects to interact, change directions, or stop.

Extended Content:
5.A.P.2.1. Students are able to identify how objects stop.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are to demonstrate how objects stop.	• Experiment with objects on ramps to observe stopping distance. **Example:** Match box cars • Experiment with objects on different surfaces to observe stopping distance. **Example:** Rolling a ball on different surfaces.
Applying: Students are able to identify how objects stop.	• Attend to visual presentations. **Examples:** Videos on friction, computer presentation, teacher presentation • Select surfaces of resistance from a pre-made list.
Developing: Students are to distinguish how objects move on different surfaces.	• Participate in an activity that demonstrates how objects move on different surfaces. **Examples:** Sand, tile floor, carpet, brick wall
Introducing: Students respond to different textures.	• Respond to textures through their senses. • Explore different surfaces within their environment.

General Education Standard:
5.P.2.2. Students are able to analyze the structure and design of simple and compound machines to determine how the machines make work easier by trading force for distance.

Extended Content:
5.A.P.2.2. Students are able to recognize that simple machines exist.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to label a simple machine.	• Select a simple machine from a group of items. **Example:** Spoon, measuring tools, computer, glass = orange, apple, leaf • Answer a yes or no question. **Example:** Is this a simple machine?
Applying: Students are able to recognize that simple machines exist.	• Attend to a presentation on simple machines. **Example:** Watch a video, computer program • Create a list of simple machines found within their environment.
Developing: Students are able to locate a simple machine.	• Match machine to machine. • Find simple machines in the classroom.
Introducing: Students explore simple machines.	• Explore simple machines through: **Example:** 1. Using a switch that is connected to videos, computer, etc. 2. Using a switch that is connected to a simple machine such as a blender or a film projector.

Indicator 3: Analyze interactions of energy and matter.

General Education Standard:
5.P.3.1. Students are able to demonstrate and explain how to measure heat flow into an object.

Extended Content:
5.A.P.3.1. Students are able to recognize how a thermometer works.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use a thermometer.	• Participate in classroom activities of reading indoor and outdoor thermometers. • Take body temperature. • Read a thermometer.
Applying: Students are able to recognize how a thermometer works. *(Continued on next page)*	• Place thermometer in liquids of varying temperatures. **Example**: Ice water to hot water • States (verbally, visually, or through technology

	devices) that the red line moves on a thermometer as temperature increases and decreases. • Select where red line is on the thermometer.
Developing: Students are able to locate a thermometer.	• Match a thermometer to a thermometer. • Select a thermometer out of group of objects.
Introducing: Students are able demonstrate a response to hot and cold.	• Respond to hot and cold stimulus.

General Education Standard:
5.P.3.2. Students are able to describe the Sun's ability to produce energy in the forms of light and heat.

Extended Content:
5.A.P.3.2. Students are able to manipulate tools to adjust the amount of light.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify that the sun produces light and heat.	• Participate in experiments that demonstrate the affects of light and heat from the sun. **Examples:** 1. Cooking a hotdog by placing it on foil and setting it in sunlight. 2. Building a snowman and watching it melt. 3. Dark and light construction. • State that the light from the sun produces warmth.
Applying: Students are able to manipulate tools to adjust the amount of light.	• Experiment with light. **Examples**: 1. Wearing sunglasses 2. Pulling up a shade
Developing: Students are able to identify that the sun produces light.	• State that light comes from the sun. • Match sun to pictures that represent a lighted object.
Introducing: Students are able to respond to the sun.	• Respond to sunlight through their senses (feel the heat, see the light).

General Education Standard:
5.P.3.3. Students are able to describe basic properties of light.

Extended Content:
5.A.P.3.3. Students are able to label the colors found in the spectrum of light.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize that the spectrum of light contains colors.	• Participate in experiments. **Examples**: Separate colors through the use of prisms • Illustrate a rainbow.

Applying: Students are able to label the colors found in the spectrum of light.	• Label various colors. • List the colors found in the spectrum of light.
Developing: Students are able to recognize the colors found in the spectrum of light.	• Match colors found in the spectrum of light. • Select colors found in the presented spectrum of light. **Example**: Color wheel, list of colors found in classroom
Introducing: Students are able to respond to colors.	• Respond to presentation of various colors. **Example:** Intelli-Keys, using a switch connected to pictures of colors

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
5.L.1.1. Students are able to describe the basic process of photosynthesis and the role of light as a source of energy in plants.

Extended Content:
5.A.L.1.1 Students will be able to recognize that plants need food.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to identify a diagram to show how plants get food.	• Label a diagram. **Example:** Label the roots, stem, flower, and leaf • Illustrate the flow of food traveling through a plant on a diagram.
Applying: Students will be able to recognize that plants need food.	• Experiment with watering a plant/not watering a plant. • Experiment with fertilizing a plant/not fertilizing a plant.
Developing: Students are able to identify a plant.	• Match picture cards. • Point to plants in environment.
Introducing: Students are able to explore visual and or tactile aids of plants.	• Touch/feel plants. • Respond to presentation of illustrations (tactile or visual) of plants.

Indicator 2: Analyze various patterns of inheritance and biological change.

General Education Standard:
5.L.2.1. Students are able to predict physical characteristics with family lineage.

Extended Content:
5.A.L.2.1 Students are able to identify pictures of offspring and their parents.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize that offspring resemble their parents.	• Match similar physical characteristics within families. • Illustrate family members.
Applying: Students are able to identify pictures of offspring and their parents.	• Identify offspring and their parents using pictures.
Developing: Students are able to recognize identical physical characteristics, of offspring and their parents, by visual aids.	• Match physical characteristics of offspring and their parents. **Examples:** 1. Feathers-feathers 2. Blonde hair-blonde hair • Sort pictures of by physical characteristics of offspring and their parents.
Introducing: Students will respond to illustrations of parents and their offspring.	• Respond to presentation of illustrations.

General Education Standard:
5.L.2.2. Students are able to describe structures and processes involved in plant reproduction.

Extended Content:
5.A.L.2.2. Students are able to identify basic parts of a plant.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify structures involved in plant reproduction.	• Label reproductive parts of the flower. • Demonstrate the process of pollination and seed distribution.
Applying: Students are able to identify basic parts of a plant.	• Label basic parts from diagram and word bank. • Activity of placing parts of plant to appropriate placement on grid.
Developing: Students are able to recognize the basic parts of a plant.	• Matching appropriate picture of plant parts to their same picture. • Attend to teacher demonstration of dissection of real plants and parts.
Introducing: Students explore basic parts of a plant.	• Use senses to explore a plant. **Example**: IntelliKeys-activate visuals of plant parts. Example (leaf, stem, roots, flower) • Feel various plants.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard:
5.A.3.1. Students are able to describe how natural events and/or human influences may help or harm ecosystems.

Extended Content:
5.A.L.3.1 Students are able to identify that animals rely on plants to survive in the ecosystem.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify parts of an ecosystem.	• Label a diagram of an ecosystem. • Participate in establishing a set ecosystem. **Example:** Aquarium, terrarium
Applying: Students are able to identify that animals rely on plants to survive in the ecosystem.	• Match animal to food within a chart. • Illustrate a simple picture showing animal consuming plants.
Developing: Students are able to recognize the components of the ecosystem.	• Participate in teacher led demonstration of ecosystem. • Attend to video demonstration of habitats and ecosystems. • Attend to audio description of ecosystems.
Introducing: Students are able to attend to stimuli of ecosystems.	• Attend to presentation of stimuli from ecosystem. **Example:** Duck in pond, rabbit in grass

General Education Standard:
5.L.3.2. Students are able to using an energy pyramid model, analyze the roles of organisms to determine the transfer of energy.

Extended Content:
5.A.L.3.2. Students are able to recognize that living things rely on each other within the energy pyramid.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify an energy pyramid.	• Label energy pyramid. • Select an energy pyramid. **Example:** Given a group of illustrations, the student selects the energy pyramid.
Applying: Students are able to recognize that living things rely on each other within the energy pyramid.	• Attend to a presentation on how the energy pyramid works. • Role play. **Example:** The fox feeds on the rabbit, and the rabbit feeds on the grass. Students act as a fox, rabbit, and grass.

Developing: Students are able to identify components within the energy pyramid.	• Match components. **Example**: 1. Plant to plant 2. Animal to animal • Sort like components.
Introducing: Students are able to explore various components of the energy pyramid.	• Use senses to explore the components of an energy pyramid. **Example:** 1. Touch animals, grass, water 2. View pictures of example of an energy pyramid: Fox feeding on rabbit, rabbit eating grass

General Education Standard:
5.L.3.3. Students are able to describe how interrelationships enable some organisms to survive.

Extended Content:
5.A.L.3.3 Students are able to recognize how humans react to seasonal changes.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize how living things react to seasonal changes.	• Categorize how living things react to season changes. **Example:** 1. Animals that hibernate-animals that do not hibernate 2. Perennials-annuals • Create a list of what an animal does to prepare for different seasons.
Applying: Students are able to recognize how humans react to seasonal changes.	• Illustrate humans in different seasons. • Categorize how humans react to seasonal changes. **Example:** Items of clothing-season; activities-seasons
Developing: Students are able to identify items related to a season.	• Match items related to their season. **Examples:** Shovel-winter, swimsuit-summer, rake-fall, umbrella-spring • Participate in activities during different seasons.
Introducing: Students are able to explore items related to seasons.	• Using senses explore items related to seasons. **Example:** Touch/feel, view, listen to items related to seasons (leaves falling, lawn mower, water falling)

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard:
5.E.1.1. Students are able to describe the basic structure of Earth's interior.

Extended Content:
5.A.E.1.1. Students are able to identify the crust and mantle of the earth.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify the crust, mantle, and core of the earth.	• Using pictures or worksheets, label crust, mantle, and core. • Create/illustrate the crust, mantle and core of Earth.
Applying: Students are able to identify the crust and mantle of the earth.	• Using pictures or worksheets, label crust and mantle. • Manipulate objects in relation to crust and mantle. **Example:** Orange: peel-crust, fruit/meat-mantle
Developing: Students are able to recognize images of the crust and mantle of the earth.	• Match or sort images of the crust and mantle of the earth.
Introducing: Students are able to explore the earth's crust.	• Using senses explore the earth's crust. **Example:** Touch/feel Earth's various textures of the earth's crust (sand, soil, rocks) • Attend to presentation of illustrations/simulations of the earth's crust.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standard:
5.E.2.1. Students are able to describe the components (Sun, planets and moons) of the solar system.

Extended Content:
5.A.E.2.1. Students are able to locate three planets of the solar system.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to locate five planets of the solar system.	• Point to five planets. **Example:** Picture of solar system, individual images • Use models to locate five planets.

Applying: Students are able to locate three planets of the solar system.	• Point to three planets. **Example:** Picture of solar system, individual images • Use models to locate three planets.
Developing: Students are able to locate the sun, moon, and Earth.	• Point to the sun, moon, and earth. • Match identifiable pictures of sun, moon, and earth. **Example:** Picture of solar system, individual images • Use models to locate the sun, moon, and earth.
Introducing: Students are able to show a response to the sun, moon, and Earth.	• Using senses to respond to visual, tactile models of the sun, moon, and earth.

General Education Standard:
5.E.2.2. Students are able to explain how the Earth's rotation affects the appearance of the sky.

Extended Content:
5.A.E.2.2. Students are able to recognize that the earth's rotation creates day and night.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe what causes day and night on Earth.	• State that day and night are caused by the rotation (spinning) of the earth. **Example:** Verbally, through technology devices • Demonstrate the rotation of the earth causing day and night. **Example:** Globe and flashlight • Sequence the stages of Dawn-Dusk
Applying: Students are able to recognize that the earth's rotation creates day and night.	• Attend to demonstrations of Earth's rotation and the light's affect on the earth. • Sequence through computer programs. **Example:** Power point presentation (Dawn, morning, noon, afternoon, dusk, total darkness); Sunflower turns to face the sun
Developing: Students are able to recognize that the earth is constantly spinning.	• Imitate teacher demonstrations. **Example**: Spin the globe • Match picture of the earth spinning. • Attend to presentations. **Example:** Videos, computer programs, verbal discussions
Introducing: Students are able to engage an object in a spinning motion.	• Spin an object. **Example:** Switch-spins an object

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standard:
5.S.1.1. Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.

Extended Content:
5.A.S.1.1. Students are able to identify one mode of modern transportation.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify that there is more than one mode of modern transportation.	• Label transportation. **Example:** Pictures of transportation, models of transportation • List types of transportation. • State different modes of modern transportation.
Applying: Students are able to identify one mode of modern transportation.	• Label one mode of transportation. • State one mode modern transportation.
Developing: Students are able to recognize modes of modern transportation.	• Match a series of duplicate images of modes of modern transportation. • Participate in field trips to view/explore with senses modes of modern transportation.
Introducing: Students are able to explore modes of modern transportation.	• Using senses explore modes of modern transportation. **Example:** Ride in modern transportation, touch/feel transportation, view images of modern transportation

General Education Standard:
5.S.1.2. Students are able to describe how designing a solution may have constraints.

Extended Content:
5.A.S.1.2. Students are able to indicate that a problem exists.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize that scientific problems exist. *(Continued on next page)*	• Attend to a demonstration on solving a scientific problem. **Example:** Erosion (pouring water over soil, creates rivets, flooding = a problem) • Select scientific problems from lists, images.

	Example: Images of mudslides, flooding, broken light bulb
Applying: Students are able to indicate that a problem exists.	• Participate in teacher created problems. **Example:** Teacher tells student to write. Then the teacher turns off the lights. The student needs to respond (orally, technological devices) that he/she can not see. • Identify a problem using an illustration. • Respond to a student created problem. **Example:** Student spills paint, another student states (orally, technological devices) that paint has been spilled.
Developing: Students are able to identify a problem from stimuli.	• Using visuals, student sorts images/ of problems (flat tire). • Attend to problems within his/her environment. **Example:** Looks at other students engaged in problems: Student missed the bus, Student forgets his/her lunch, Student falls down.
Introducing: Students are able to engage in an activity that identifies problems.	• Participates in classroom activities that deal with problems. **Example:** Fire drill, starts raining during recess-go back into the class. • Uses technology to observe problems that need a response.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standard:
5.S.2.1. Students are able to explain the interrelationship of populations, resources, and environments.

Extended Content:
5.A.S.2.1. Students are able to identify an animal with its specific habitat.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify different animal wildlife habitats.	• Illustrate an animal wildlife habitat with specific components. **Example:** Food, shelter, different species • List different animal wildlife habitats. **Example:** Desert, prairie, forest, rain forest, pond
Applying: Students are able to identify an animal with its specific habitat.	• Match animal to their specific habitat. **Example:** Duck-pond, parrot-rain forest, prairie dog-prairie • Complete a graphic organizer.

Developing: Students are able to recognize an animal to its specific habitat.	• Manipulate pictures of animals within their specific habitat. • Match picture of an animal to habitat. • Attend to presentations of animals in the specific habitat. **Example**: Watch a video on animals interacting in their specific habitat.
Introducing: Students are able to explore wildlife.	• Using senses the student explores wildlife. **Example:** Touch/feel various wildlife (petting zoo, go to a farm, taxidermist); use a switch to view images of wildlife.

SCIENCE GRADE 6

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standard:
6.N.2.1. Students are able to pose questions that can be explored through scientific investigations.

Extended Content:
6.A.N.2.1. Students are able to answer a yes/no question about a supervised science experiment.

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to answer one question about a supervised science experiment.	• When presented with a question, students will tell an answer. **Example**: Is the chemical reaction warm or cold?

Applying: Students are able to answer a yes/no question about a supervised science experiment.	• When presented with a question, students will tell an answer. **Example:** Is the chemical reaction warm?
Developing: Students are able to participate in simple supervised science experiments.	• Participate in supervised experiments with peers.
Introducing: Students are able to observe science experiments.	• Observe supervised experiments with peers.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
6.P.1.1. Students are able to identify the subatomic particles that make up atoms.

Extended Content:
6.A.P.1.1. Students are able to label the proton(s) in an atom.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to label the proton(s) and neutron(s) in an atom.	• Given words and illustration, locate the proton(s). • Given words and illustration, locate the neutron(s).
Applying: Students are able to label the proton(s) in an atom.	• Using a model locate a proton(s). • Using an illustration, locate a proton(s).
Developing: Students are able to identify an atom.	• Given pictures of objects, match the atom. • Given word cards, match the word "atom." • Given a model, match the word atom.
Introducing: Students are able to respond to the parts of an atom.	• Using assistive technology students will be shown images of an atom. **Example:** Micro switch activates picture of the different parts of an atom on the computer screen and intellikeys presents picture of the different parts of an atom on a computer screen, media related to the make up of an atom access through assistive technology. • Demonstrate a physical response to the picture/model of an atom.

General Education Standard:
6.P.1.2. Students are able to classify matter based on physical and chemical properties.

Extended Content:
6.A.P.1.2. Students are able to identify physical properties.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to classify physical properties.	• Classify objects according to physical properties, such as: weight, texture, color, or temperatures. • List physical properties of a given object.
Applying: Students are able to identify physical properties.	• Sort objects according to physical properties. **Examples**: Weight, texture, temperatures or color • Compare two objects to determine temperature, weight, texture or color. **Examples**: Compare weight to weight, temperature to temperature, etc. • Contrast two objects to determine temperature, weight, texture or color. **Examples:** Contrast weight to weight, temperature to temperature, etc.
Developing: Students are able to indicate a physical property.	• Sort objects according to color. • Sort objects according to texture. • Compare warm and cool.
Introducing: Students are able to respond to the physical properties of color or texture.	• Use touch/manipulate to experience different textures or temperatures. • Using assistive technology exhibit a recognizable response to color. **Example:** Color change board, texture boards

General Education Standard:
6.P.1.3. Students are able to describe phase changes in matter differentiating between the particle motion in solids, liquids, and gases.

Extended Content:
6.A.P.1.3 Students are able to identify solids, liquids, and gases.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe solids, liquids, and gases.	• Using senses compare solids, liquids, or gases. **Example**: Using opaque containers, place solids, liquids, and gases (air). Student would communicate whether it was a solid, liquid, or gas. • Using senses contrast solids, liquids, or gases. **Example:** Identify words that would describe the difference between a solid, liquid or gas.
Applying: Students are able to identify solids, liquids, and gases.	• Sort objects according to their state of matter. • Given a state of matter, identify an example of solids, liquids, or gases.

Developing: Students are able to distinguish solids and liquids.	• Match objects according to their state of matter. • Given a state of matter, identify an example of a solid and a liquid.
Introducing: Students are able to respond to solids and liquids.	• When presented with a solid form of matter or a liquid form of matter the student will tactilely or visually explore the matter. • Through the use of assistive technology the student will attend to presented forms of liquid, solid, or gas matter.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standard:
6.P.2.1. Students are able to describe how push/pull forces acting on an object produce motion.

Extended Content:
6.A.P.2.1. Students are able to demonstrate push/pull forces.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe push/pull forces.	• Identify activities that require the force of pushing or pulling. • Conduct experiments to demonstrate the motions of pushing or pulling.
Applying: Students are able to demonstrate push/pull forces.	• Given an object attached to a rope demonstrate the motion needed to move the object. • Given an object demonstrate the motion of push and pull. **Examples**: Door, a book on desk, a chair, drawer • Given an illustration/example imitate push/pull forces.
Developing: Students are able to model push/pull forces.	• Using an object, model pushing it. • Using an object, model pulling it. • Match pictures of objects being pushed or pulled.
Introducing: Students are able to respond to push/pull.	• Using sensory stimulation, give a recognizable response to pull. • Using sensory stimulation, give a recognizable response to push. • Student will respond to experiences of physically pushing or pulling their body in space.

Indicator 3: Analyze interactions of energy and matter.

General Education Standard:
6.P.3.1. Students are able to identify types of energy transformations.

Extended Content:

6.A.P.3.1 Students are able to recognize potential and kinetic energy.	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to demonstrate potential and kinetic energy.	• Compare potential and kinetic energy. • Contrast potential and kinetic energy. • Conduct an experiment demonstrating kinetic energy and potential energy. **Example**: Dropping a ball, toy car on a ramp, blowing on a pinwheel.
Applying: Students are able to recognize potential and kinetic energy.	• Participate in an experiment demonstrating kinetic energy and potential energy. **Example:** Dropping a ball, toy car on a ramp, blowing on a pinwheel. • Categorize pictures of stationary and moving objects.
Developing: Students are able to recognize kinetic energy.	• Match objects that are moving. • Match objects that are stationary.
Introducing: Students are able to experience kinetic energy.	• Using assistive technology, a student will demonstrate potential and kinetic energy with a movement toy. **Example**: Switch hooked up to penguin activity or walking dog. • Experience kinetic energy. **Example:** Swing, wagon ride, ride in a wheelchair

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard: **6.L.1.1. Students are able to illustrate the difference between plant and animal cells.** **Extended Content:** **6.A.L.1.1. Students are able to identify a cell.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to recognize an animal and a plant cell.	• When provided with a visual model the student will be able to place plant cells with plant cells and animal cells with animal cells. • When provided with a model and materials, create an animal cell or plant cell.

Applying: Students are able to identify a cell. *(Continued on next page)*	• When provided with an illustration and a word bank the student with be able to attach the word with the illustration. • Use play dough to create a cell based on a given illustration.
Developing: Students are able to recognize a cell.	• Given pictures or models, match the cells. • Choose pictures of cells from an array of non-cells and cells.
Introducing: Students are able to give a recognizable response to an illustration of a cell.	• Using assistive technology the student will give a recognizable response to an image of a cell. • Use tactile or visual senses to explore the model of a cell.

General Education Standard:
6.L.1.2. Students are able to explain the importance and scientific use of a classification system.

Extended Content:
6.A.L.1.2. Students are able to classify an organism as a plant or animal.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize the names of the five kingdoms.	• Use a word bank to recognize the 5 names of the Kingdoms. • Use Intellikeys to locate the names/paired with pictures of the 5 Kingdoms. • Recognize pictures representing each of the 5 Kingdoms.
Applying: Students are able to classify an organism as a plant or animal.	• Sort pictures of plants and animals.
Developing: Students are able to explore with their senses an organism as a plant or animal.	• Match plants and animals. **Examples**: Real organisms, texturized manipulatives, memory game
Introducing: Students are able to respond to representations of plants and animals.	• Explore representations of plants and animals. • Use assistive technology to attend to different organisms.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard:
6.E.1.1. Students are able to describe how the spheres (lithosphere, hydrosphere, atmosphere, and biosphere) of the Earth interact.

Extended Content:
6.A.E.1.1. Students are able to identify three spheres of the Earth.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to classify three spheres of the Earth.	• Sort illustrations/models that represent the spheres for air, land, and water. • Match pictures of air, land, and water to the appropriate sphere.
Applying: Students are able to identify three spheres of the Earth.	• Given illustrations of air, land, and water students will sort into appropriate categories. **Examples:** Pre-cut pictures from magazines/computers
Developing: Students are able to recognize there are different spheres of the Earth.	• Match illustrations of land or water. **Examples:** Land to land and water to water • Attend to a presentation about the spheres of land and water.
Introducing: Students are able to attend to a presentation about the spheres of the Earth.	• Respond to illustrations, models, and discussions on the spheres of the Earth.

General Education Standard:
6.E.1.2. Students are able to examine the role of water on the Earth.

Extended Content:
6.A.E.1.2. Students are able to identify an effect of water on the surface of the Earth.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe an effect of water on the surface of the Earth.	• Given a scenario, describe effects of various examples of water on the Earth. **Example**: Rain, rivers, erosion, glaciers, ocean, gullies, Missouri River dams, landslides. • Describe effects of water after media presentations. **Example**: Videos, DVD, PowerPoint.
Applying: Students are able to identify an effect of water on the surface of the Earth.	• Share an effect of water after media presentations. **Example**: Videos, DVD, PowerPoint. • Sort various illustrations/models as effects and non-effects. **Examples**: Desert, river, ocean, plants, rain, city, pictures of home or school, etc.
Developing: Students are able to recognize an effect of water on the surface of the Earth.	• Using a sand/water table, explore effects with senses. **Example**: Waves, erosion of sand due to water, ripple effect
Introducing: Students are able to attend to a presentation on the effects of water on the	• Attend to discussions, illustrations, media presentations, and demonstrations of the effects of

surface of the Earth.	water.

General Education Standard:
6.E.1.3. Students are able to explain processes involved in the formation of the Earth's structure.

Extended Content:
6.A.E.1.3. Students are able to identify the effects of volcanoes and earthquakes.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe the effects of volcanoes and earthquakes.	• Compare illustrations and models depicting effects of volcanoes. **Examples**: Flow, explosion, spew, bubble, erupt, lava, ash • Compare illustrations and models depicting effects of earthquakes. **Examples**: Natural effects, effects on land and buildings, tsunamis, roads • Compare and contrast the effects of volcanoes and earthquakes.
Applying: Students are able to identify the effects of volcanoes and earthquakes.	• Conduct an experiment to simulate the effects and actions of volcanoes and earthquakes. **Examples:** 1. Stack blocks and shake them down. 2. Shake a pop can and open it 3. Vinegar and baking soda in clay mountain • Examine illustrations and models depicting effects of volcanoes. **Examples**: Flow, explosion, spew, bubble, erupt, lava, ash • Examine illustrations and models depicting effects of earthquakes. **Examples**: Natural effects, effects on land and buildings, tsunamis, roads
Developing: Students are able to recognize volcanoes and earthquakes.	• Participate in an experiment to simulate the effects and actions of volcanoes and earthquakes. **Examples:** 1. Stack blocks and shake them down. 2. Shake a pop can and open it 3. Vinegar and baking soda in clay mountain • Observe illustrations and models depicting effects of volcanoes. **Examples**: Flow, explosion, spew, bubble, erupt, lava, ash • Observe illustrations and models depicting effects of earthquakes.

	Examples: Natural effects, effects on land and buildings, tsunamis, roads • Match pictures of volcanoes and earthquakes.
Introducing: Students are able to attend to a presentation of the effects of volcanoes and earthquakes.	• Observe an experiment to simulate the effects and actions of volcanoes and earthquakes. **Examples:** 1. Stack blocks and shake them down. 2. Shake a pop can and open it 3. Vinegar and baking soda in clay mountain • Using sensory stimulation experience the effects of volcanoes/earthquakes.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standard:
6.E.2.1. Students are able to identify the organization and relative scale of the solar system.

Extended Content:
6.A.E.2.1. Students are able to label the nine planets in the solar system.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to sequence and identify the Sun, Mercury, Venus, Earth and Mars.	• Using models and diagrams sequence the Sun, Mercury, Venus, Earth and Mars. **Examples**: Picture banks, word banks, puzzles • Design a model of the Sun, Mercury, Venus, Earth and Mars. **Examples:** Fruit, Styrofoam balls, clay, construction paper
Applying: Students are able to label the nine planets in the solar system.	• Given a diagram or other aide, students will match names to planets. **Examples:** Word bank, picture bank, scientific diagram, puzzle • Create a model of the nine planets. **Examples:** Fruit, Styrofoam balls, clay, construction paper, draw, computer graphics
Developing: Students are able to recognize the planets in the solar system.	• Shown pictures of the solar system, locate the planets. **Example:** Students can indicate the planets • Match planet to planet. **Example:** Picture to picture
Introducing: Students are able to explore models of the planets using multi-sensory methods.	• Using sensory activities, students will attend to presentations or models/diagrams of the plants.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standard:
6.S.1.1. Students are able to describe how science and technology have helped society to solve problems.

Extended Content:
6.A.S.1.1 Students are able to recognize that technology helps solve problems.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify a problem that is solved by using technology.	• Given a problem, identify a technological solution. **Example:** Dark room/turn on light, broken lead on pencil/sharpen it • Given a technological solution, identify the problem it solves. **Examples**: A wheelchair, microwave, pencil sharpener, remote control
Applying: Students are able to recognize that technology helps solve problems.	• Given a technological solution, identify the problem it solves (with teacher prompts). **Examples**: A wheelchair, microwave, pencil sharpener, remote control • Complete a sequence activity involving problems/solutions.
Developing: Students are able to recognize technology in their environment.	• Tour school to locate technology with teacher supervision. **Examples**: Computer lab, kitchen, I-tech room, office • Match pictures of different type of technology.
Introducing: Students are able to use assistive technology.	• Use micro switch to indicate choice. **Example**: Picture of snack or activity, yes/no questions and answers • Use own assistive technology devices to answer questions and make requests.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standard:
6.S.2.1. Students are able to given a scenario, identify the problem(s) of human activity on the local, regional, or global environment.

Extended Content:
6.A.S.2.1 Students are able to give an example of a problem caused by human activity.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to solve a problem caused by human activity.	• Give solutions to scenarios involving problems of human activity. **Examples**: Messy floor, pollution outside, litter, noisy hallway, not enough snacks or supplies • Solve the problem. (see examples above)
Applying: Students are able to give an example of a problem caused by human activity.	• Given a scenario students will match a problem to human activity in school. **Examples**: Noises, smells, running, trash
Developing: Students are able to identify a problem caused by human activity.	• Participate in a classroom clean up activity. • Match pictures of problems.
Introducing: Students are able to attend to a presentation on the effects of problems caused by human activity.	• Observe a presentation about problems involving human activity.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

SCIENCE GRADE 7

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

Note: Mastery is not expected at this grade level.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standard:
7.N.2.1. Students are able to conduct scientific investigations using given procedures.

Extended Content:
7.A.N.2.1. Students are able to participate in and observe science activities and experiments.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to conduct a science experiment.	• Conduct components in group science experiments. **Example:** Rolling car down a ramp, collecting supplies, mixing ingredients etc.

Applying: Students are able to participate in and observe science activities and experiments.	• Participate and observe in a science experiment. **Example**: Rolling car down a ramp, collecting supplies, mixing ingredients etc
Developing: Students are able to imitate science activities and experiments.	• Model a teacher led experiment. **Example**: Rolling car down a ramp, collecting supplies, mixing ingredients etc
Introducing: Students are able to observe science activities and experiments.	• Attend to a science experiment being conducted in the classroom or through illustrations.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Note: Grade seven standards emphasize Life Science. Physical Science mastery is not expected at this grade level.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
7.L.1.1. Students are able to identify basic cell organelles and their functions.

Extended Content:
7.A.L.1.1. Students are able to locate a cell part.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify basic cell parts.	• Use microscope and find the nucleus. • Given a diagram label cell parts, using a microscope and find the cell membrane/cell wall.
Applying: Students are able to locate a cell part.	• Given a diagram, match names to cell parts. • Match cell parts to cell parts.
Developing: Students are able to recognize that cells have parts.	• Using posters, transparencies, overlays, or models match picture cards to the cell parts.
Introducing: Students are able to attend to presentations of cell parts.	• Using assistive technology give a recognizable response to presentation of cell parts.

General Education Standard:
7.L.1.2. Students are able to identify and explain the function of the human systems and the organs within each system.

Extended Content:
7.A.L.1.2. Students are able to recognize that the human body has systems.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify the muscular system.	• When looking at diagrams of the human body systems identify the muscular system. • Use pictures of the muscular system and other pictures to identify the muscular system.
Applying: Students are able to recognize that the human body has systems.	• Attend to media presentations of the human systems.
Developing: Students are able to recognize that the body has different parts.	• Put together a puzzle of the body. • Match pictures of different body parts. • Identify body parts.
Introducing: Students are able to demonstrate recognition of body parts.	• Match pictures using assistive technology. • Respond to presentation of illustrations of body parts.

General Education Standard:
7.L.1.3. Students are able to classify organisms by using the currently recognized kingdoms.

Extended Content:
7.A.L.1.3. Students are able to distinguish between plants, animals and fungi.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to label the names of the five kingdoms.	• Label the 5 Kingdoms using a word bank.
Applying: Students are able to distinguish between plants, animals and fungi.	• Using category headings, sort pictures of animals, plants, and fungi.
Developing: Students are able to recognize an organism as a plant or animal.	• Using category headings, sort pictures of animals and plants. • Match animals of pictures/ of animals/plants.
Introducing: Students are able to recognize an organism.	• Using assistive technology students will demonstrate a recognizable response to an animal/plant.

General Education Standard:
7.L.1.4. Students are able to describe and identify the structure of vascular and non-vascular plants.

Extended Content:
7.A.L.1.4. Students are able to locate the parts of a vascular plant.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to label parts of a flowering vascular plant.	• Label a diagram of a plant using a word bank. **Example**: Stem, root, leaf, and flower
Applying: Students are able to locate the parts of a vascular plant.	• Given a visual representation of a plant indicate the stem, root, and leaf.
Developing: Students are able to recognize the parts of a vascular plant.	• Complete a puzzle of a plant that has a template.
Introducing: Students are able to explore the parts of a vascular plant.	• Uses senses to explore real plants. • Respond to presentation of illustrations of plant parts.

Indicator 2: Analyze various patterns and products of natural and induced biological change.

General Education Standard:
7.L.2.1. Students are able to distinguish between processes involved in sexual and asexual reproduction.

Extended Content:
7.A.L.2.1. Students are able to recognize the continuation of mammals through sexual reproduction.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize the continuation of a species through sexual reproduction.	• Match adult and baby animal pictures. **Examples:** Mammals, birds, fish, reptiles
Applying: Students are able to recognize the continuation of mammals through sexual reproduction.	• Match adult and baby mammal pictures.
Developing: Students are able to recognize that there are physical differences between males and females.	• Boys recognize that they have male parts. • Girls recognize that they have female parts. • Match pictures of boy/girl.
Introducing: Students are able to respond to information related to the physical differences between males and females.	• Attend to presentations about the developing body.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard:
7.L.3.1. Students are able to predict the effects of biotic and abiotic factors on a species' survival.

Extended Content: **7.A.L.3.1. Students are able to list factors needed for survival of a species .**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to identify factors needed for survival of a species.	• Given a variety of factors, select those that will assist with survival (food, water, air, sunlight).
Applying: Students are able to list factors needed for survival of a species.	• Given a word list or a picture bank, list the four representations for food, water, air and sunlight.
Developing: Students are able to recognize basic factors needed for the survival of a species.	• Take care of a classroom animal to recognize the basic needs for food, water, air, and sunlight. • Match items and species need to survive.
Introducing: Students are able to respond to a presentation of the basic factors needed for survival of a species.	• Observe and participate in caring for classroom animal. • Attend/Respond to illustrations depicting factors species need to survive.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Note: Grade seven standards emphasize Life Science. Earth/Space Science mastery is not expected at this grade level.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standard: **7.S.1.1. Students are able to describe how science and technology are used to solve problems in different professions and businesses.** **Extended Content:** **7.A.S.1.1. Students are able to locate situations in which science and technology are used to solve problems at home and/or school.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to explain a situation in which science and technology are used to solve problems at home and/or	• Given a scenario, students will work together to determine a solution for the presented problem.

school.	
Applying: Students are able to locate situations in which science and technology are used to solve problems at home and/or school.	• Go on a field trip around the building to identify 3 ways science and technology is used to solve problems. **Examples**: Computer usage, drinking fountain, telephones, etc. • Go into community to find examples of new technology and investigate how it is used. • Identify different types of technology located in videoclip/picture.
Developing: Students are able to locate one situation in which science and technology are used to solve problems at home and/or school.	• Locate a problem in their environment that is solved by using technology. **Example:** Cook microwave popcorn, remote control for television. • Match pictures of technology.
Introducing: Students are able to experience situations in which science and technology are used to solve problems at school.	• Use assistive technology to solve daily problems. **Examples**: Power wheelchairs, tape recorders, micro switches

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standard:
7.S.2.1. Students are able to given a scenario, predict the consequence(s) of human activity on the local, regional, or global environment.

Extended Content:
7.A.S.2.1. Students are able to recognize a consequence of human activity in school.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize consequences of human activity in a local environment.	• Participate in a discussion on the consequences of human activity.
Applying: Students are able to recognize a consequence of human activity in school.	• Given a scenario students will match a consequence to human activity in school. **Examples**: Noises, smells, running, trash
Developing: Students are able to recognize consequences of human activity in their personal environment.	• Match before/after pictures. • Match pictures of cleaning up different environments.
Introducing: Students are able to respond to human activity in a local environment.	• Observe trash cans and classroom floors at the end of a school day.

SOUTH DAKOTA EXTENDED CONTENT AND ALTERNATE ACADEMIC ACHIEVEMENT DESCRIPTORS FOR STUDENTS WITH SIGNIFICANT COGNITIVE DISABILITIES

SCIENCE GRADE 8

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

General Education Standard:
8.N.1.1. Students are able to differentiate among facts, predictions, theory, and laws/principles in scientific investigations.

Extended Content:
8.A.N.1.1. Students are able to distinguish between fact and prediction in scientific investigations.

Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to compare fact and prediction in scientific investigations.	• Make a prediction and complete an experiment. **Examples**: 1. Vinegar and baking soda 2. Stalk of celery in food coloring 3. Float or sink

Applying: Students are able to distinguish between fact and prediction in scientific investigations.	• Participate in actual experiments and compare predictions with facts of experiment outcome.
Developing: Students are able to recognize a fact in scientific investigations.	• Match a fact to a fact in a given situation. • True or false statements to identify facts.
Introducing: Students attend to facts and predictions.	• Attend to experiment and discussion of the facts and predictions.

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standard:
8.N.2.1. Students are able to design a replicable scientific investigation.

Extended Content:
8.A.N.2.1 Students are able to participate in a systematic scientific investigation

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to follow instructions with prompts to conduct a systematic scientific investigation.	• Given step by step instructions, conduct a simple scientific experiment. **Examples:** 1. At what height will a water balloon break? 2. What is the best insulation for an ice cube?
Applying: Students are able to participate in a systematic scientific investigation.	• Given step by step instructions, participate in a simple scientific experiment. **Examples:** 1. At what height will a water balloon break? 2. What is the best insulation for an ice cube?
Developing: Students are able to follow simple instructions of a systematic scientific investigation.	• Follow one part and three part instructions. **Examples**: Pictograms, imitate actions
Introducing: Students are able to attend to a demonstration of a systematic scientific investigation.	• Attend to a simple scientific experiment.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
8.P.1.1. Students are able to classify matter as elements, compounds, or mixtures.

Extended Content:
8.A.P.1.1. Students are able to recognize mixtures.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate how mixtures are made.	• Conduct an experiment to combine more than two substances. • Create a mixture and than separate the components. **Examples**: 1. Combining salt and water and allow water to evaporate. 2. Sand and iron filings separated with magnet.
Applying: Students are able to recognize mixtures.	• Use two or more substances to create a mixture. **Examples**: 1. Chocolate chips and marshmallows 2. Marbles and blocks. • Given pictures of food items identify which are mixtures and which are single ingredients.
Developing: Students are able to select mixtures.	• Sort the contents of the mixture. **Examples**: Chex mix, marbles and blocks • Given two choices choose which one is the mixture. **Example:** Cheerios vs. Lucky Charms.
Introducing: Students are able to explore mixtures.	• With assistive technology (able net control unit, switch, blender, mixer) student will participate in creating a mixture. • Student will use senses to explore mixtures. **Examples:** 1. Touch dough 2. Touch nuts and bolts

General Education Standard:
8.P.1.2. Students are able to use the Periodic Table to compare and contrast families of elements and to classify elements as metals, metalloids, or non-metals.

Extended Content:
8.A.P.1.2. Students are able to use the Periodic Table to identify the first eight elements.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use the Periodic Table to identify the first 18 elements.	• Utilizing the periodic table, locate the first 18 elements using a word bank.

Applying: Students are able to use the Periodic Table to identify the first eight elements.	• Utilizing the periodic table, to locate the first eight elements using a word bank.
Developing: Students are able to use color coded cards to identify elements.	• Match the color coded categories on the Periodic Table. **Examples:** 1. Metals are blue 2. Nonmetals are green
Introducing: Students will attend to the activities about the Periodic Table.	• Respond to presentations of the first 8 elements of the Periodic Table. **Examples:** Intellikeys, periodic table appears on screen when accessing a switch

General Education Standard:
8.P.1.3. Students are able to compare properties of matter resulting from physical and chemical changes.

Extended Content:
8.A.P.1.3. Students are able to recognize that matter changes.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain why matter changes.	• Participates in lab activities. **Examples:** 1. Boiling an object (egg – chemical, water – physical) 2. Freezing a liquid 3. Burning a substance
Applying: Students are able to recognize that matter changes.	• Indicate that matter changed. **Examples:** 1. Pop Rocks on tongue vs. pop rocks on the counter 2. Alka-Seltzer in water vs. Alka-Seltzer in flour
Developing: Students are able to observe matter.	• Explores various forms of matter. **Examples**: 1. Books (or item of choice) 2. Liquids 3. Solids – elements and compounds
Introducing: Students are introduced to different forms of matter.	• Participates in sensory activities. **Examples:** 1. Hold books (or item of choice) 2. Feel liquids 3. Manipulate solids 4. Smell vinegar or scents

	• Attends to various activities involving matter.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Note: Grade eight standards emphasize Earth/Space Science. Life Science mastery is not expected at this grade level.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard:
8.E.1.1. Students are able to identify and classify minerals and rocks.

Extended Content:
8.A.E.1.1 Students are able to identify rocks.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to distinguish between rocks.	• Sort rocks by a distinguishing feature. • Match names to five rocks.
Applying: Students are able to identify rocks.	• Play a matching game with rocks. • Use the internet as a resource to find different types of rocks. • Create a classified rock box.
Developing: Students are able to explore different textures of rocks.	• Explore/sort rough and smooth rocks. • Lift different rocks to feel density.
Introducing: Students will manipulate different rocks.	• Participate in activities involving rocks. • Feel different rocks. • Look at different rock surfaces including polished rocks. • Scratch different rocks.

General Education Standard:
8.E.1.2. Students are able to explain the role of plate tectonics in shaping Earth.

Extended Content:
8.A.E.1.2. Students are able to recognize the major tectonic plates.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify major tectonic plates.	• Using a model or diagram identify major tectonic plates.

Applying: Students are able to recognize the major tectonic plates.	• Recognize names of major plates. **Examples:** North American Plate**,** Use shaving cream on desk and wipe it up to signify movements of the plates.
Developing: Students are able to recognize the Earth's crust is made up of plates.	• Match plates with continents. • Recognize the continental shapes using a puzzle.
Introducing: Students are able to explore the different plates of the Earth.	• Uses a switch to run a computer program on the Earth's plates. • Participates in activities involving different plates of the earth.

General Education Standard:
8.E.1.3. Students are able to explain the factors that create weather and the instruments and technologies that assess it.

Extended Content:
8.A.E.1.3. Students are able to label factors that create weather.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to list factors that create weather.	• Participate in experiments. **Examples:** Warm/cold currents (putting warm and cold water together) • Expose students to weather maps of wind charts, temperature and other factors.
Applying: Students are able to label factors that create weather.	• Match weather factors (pictures to names). **Examples**: Sun, wind, ocean current • Look at airport weather map with symbols and locate symbols on weathering.
Developing: Students are able to indicate current weather conditions.	• Identify current weather conditions. **Examples:** It's raining, It's hot • Use internet to get on local weather station to check weather conditions.
Introducing: Students are able to experience different weather conditions.	• Participates in weather related activities. • Uses a switch with a computer to run internet Doppler radar. • Use a switch to identify a weather condition.

General Education Standard:
8.E.1.4. Students are able to examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves.

Extended Content:
8.A.E.1.4. Students are able to identify effects of currents and waves in the ocean.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to classify effects of currents and waves in the ocean.	• Classify the currents that effect weather. **Examples**: El Nino, Gulf Stream Anchorage, AK
Applying: Students are able to identify effects of currents and waves in the ocean.	• Use media to observe currents and waves. • Identify effects. **Examples:** Erosion, Heat transfer
Developing: Students are able to recognize bodies of water have waves.	• Recognize oceans on a map. • Match different waves/currents.
Introducing: Students are able to explore waves.	• Feel waves in water. • Use media to observe waves.

General Education Standard:
8.E.1.5. Students are able to explain the impact of weathering and erosion on the Earth.

Extended Content:
8.A.E.1.5. Students are able to recognize the differences between weathering and erosion.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify the differences between weathering and erosion.	• Identify if an activity involves weathering or erosion. **Examples:** 1. Make a stream table to show erosion – Paint tray with dirt on it and use water to simulate rain. 2. Freeze a pop with water in it- shows how rocks can break 3. Put a nail in salt water-causes rust. • Identify illustration of weathering and erosion.
Applying: Students are able to recognize the differences between weathering and erosion.	• Define characteristics of weathering and erosion. • Label pictures of weathered and eroded objects. • Make a poster of a well-known landform or monument that have been eroded or weathered-find before and after pictures.
Developing: Students are able to identify erosion.	• Field trip to destination that shows the effects of erosion. • Show pictures of the eroded surfaces before and after. **Examples:** Dust Bowl years, Badlands**,** Grand Canyon, Mountain Areas • Match pictures of erosion.
Introducing: Students are able to manipulate objects that have been eroded.	• Attend to activities using a stream table. • Field trip to location containing eroded areas. • Manipulate smooth and rough rocks. • Attend to illustrations/depictions of erosions.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standard:
8.E.2.1. Students are able to compare celestial bodies within the solar system using composition, size, and orbital motion.

Extended Content:
8.A.E.2.1 Students are able to compare the planets of our solar system according to size.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to sequence order of the planets according to size.	• Arrange models of planets from smallest to largest. • Construct model individually or in a group and sequence the planets. **Examples:** Paper-cut or draw, Styrofoam balls, computer paint or draw program
Applying: Students are able to compare the planets of our solar system according to size.	• Compare the inner and outer planets. • Compare the size of Earth to the size of each planet. **Examples:** Use paper models, make an Earth comparison chart
Developing: Students are able to state the solar system is made up of planets.	• Request the use of the star lab from state agency. • Construct one planet and put together to make a class solar system. • Read/listen to books on solar system. • Match pictures and labels of solar system.
Introducing: Students are able to attend to the concept of planets.	• Manipulate objects that are shaped like and have the texture of the planets. • Attend to activities to construct a planet. • Use switches to indicate if a picture or object present represents a planet. • Attend to presentation of illustrations/manipulative of the planets.

General Education Standard:
8.E.2.2. Students are able to differentiate the influences of the relative positions of the Earth, Moon, and Sun.

Extended Content:
8.A.E.2.2. Students are able to recognize how the tilt of the Earth is the cause of winter and summer.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain how the tilt of the Earth is the cause of the seasons.	• Use a globe and flashlight to demonstrate the tilt of the earth causes seasons.

Applying: Students are able to recognize how the tilt of the Earth is the cause of winter and summer.	• Use sources of heat to feel the effects of direct and indirect heat. • Participate in an activity using a ball or globe and flashlight to demonstrate the tilt of the earth. • Use representations of the seasons and students identify the seasons. **Examples:** 1. Show pictures of the Earth tilting 2. Show pictures of seasonal environmental changes 3. Play sounds heard during the different seasons. • Adopt a tree and explore with senses the changes that take place during the seasons- journal the changes.
Developing: Students are able to identify the four seasons.	• Draw picture of the same environment during the different seasons. • Adopt tree and explore with senses the changes that take place during the seasons. • Choose the appropriate clothing to wear during the different seasons.
Introducing: Students explore conditions of the different seasons.	• Use media to explore with senses the different seasons. **Examples:** Movies, Computer programs, Newspaper-cut out pictures • Take nature walks during different seasons to collect items that relate to the season. **Examples:** Summer-Flowers, Fall-Leaves/pine cones, Winter- Snow/Ice, Spring – Flowers/tree buds • Respond to illustrations of different seasons.

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standard:
8.S.1.1. Students are able to describe how science and technology have been influenced by social needs, attitudes, and values.

Extended Content:
8.A.S.1.1. Students are able to identify that science has been influenced by social needs.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be given a discovery and explain how it meets the needs of society.	• Participate in a discussion of scientific discoveries. **Examples:** 1. Work in groups to discuss needs met by a discovery and present to the class 2. Use computer to research a discovery and create a power point to display • Listen to guest speaker. **Examples:** 1. Utility spokesperson 2. Wildlife specialist 3. Construction leader
Applying: Students are able to identify that science has been influenced by social needs.	• Identify scientific solutions to social problems. **Example:** Use pictures/description to identify solution to problem (food on ice vs. refrigeration).
Developing: Students will be able to recognize social needs.	• Identify survival/social needs. **Example:** Give scenario-verbal or picture and brainstorm what is need to survive or meet social standards. • Indicate ways social needs are met. **Examples:** Prompt a written or verbal statement of how water, electricity, waste disposal is used, "What do you do with an empty can?"
Introducing: Students will attend to activities that involve objects that meet their social needs.	• Use assistive technology to perform tasks. • Participate in activities that introduce ways assistive technology is used. • Respond to illustrations or presentation of needs met by discovery.

Indicator 2: Analyze various relationships/interactions among science, technology, environment, and society.

General Education Standard:
8.S.2.1. Students are able to given a scenario, offer solutions to problems created by human activity on the local, regional, or global environment.

Extended Content:
8.A.S.2.1. Students are able to recognize problems/solutions created by humans.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify problems created by humans in the local environment.	• Use media to learn about solutions to problems created by humans. • Indicate a solution to a local environmental problem.

Applying: Students are able to recognize problems/solutions created by humans.	• Attend to a guest speaker who discusses environmental problems. • Use media to learn about scientific problems created by humans and solutions to those problems. • Recognize problems with in an illustration video clip.
Developing: Students are able to recognize problems.	• Using a model create a poster of human problems. • Use media to identify specific scientific problems. • Take students on a walk of the school to recognize different problems. • Match pictures of environmental problems.
Introducing: Students are able to attend to problems.	• Participate in activities that involve solving scientific problems. • Use media to attend to examples of scientific problems.

SCIENCE GRADE 9-12

Alternate Academic Achievement Descriptors describe each performance level and were written for each grade for each standard. These descriptors indicate how a student at that level would be expected to perform on the Extended Content. Frequency, setting, and level of support are factors that should be considered during instruction and assessment in order to discriminate increases in performance of skills at each level.

Continuum of frequency, setting, and support.	
4	Students demonstrate knowledge and skills consistently across multiple settings without support.
3	Students demonstrate knowledge and skills more than once in more than one setting without support.
2	Students demonstrate the following knowledge and skills once in one setting with minimal support.
1	Students attempt to demonstrate the following knowledge and skills once in one setting with support.

Nature of Science

Goal 1: Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science.

Indicator 1: Understand the nature and origin of scientific knowledge.

General Education Standard:
9-12.N.1.1. Students are able to evaluate a scientific discovery to determine and describe how societal, cultural, and personal beliefs influence scientific investigations and interpretations.

Extended Content:
9-12.A.N.1.1. Students will be able to identify a scientific discovery.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify a scientific discovery and recognize the discovery to everyday life.	• Discussion of impact of discoveries on their life. **Examples**: Game boys, Computers, Calculators, Medicine
Applying: Students will be able to identify a scientific discovery. *(Continued on next page)*	• Match or identify evolutions of discoveries. • Discussion various scientific discoveries (use pictures). **Examples**: 1. Abacus vs calculator 2. Icebox vs refrigerator • Use media to initiate discussion.

	Examples: Newspaper, Science news magazines, Computer activities
Developing: Students will be able to recognize scientific discoveries.	• Name discoveries that the teacher will list. • Match pictures of man-made and natural discoveries. • Recognize difference between man-made and natural objects.
Introducing: Students will observe scientific discoveries.	• Participating in class activities using buttons. • Use a switch to activate computer program on scientific discoveries. • Attend to stories/history of scientific discoveries.

General Education Standard:
9-12.N.1.2. Students are able to describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws.

Extended Content:
9-12.A.N.1.2. Students will be able to describe a hypothesis.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to state and test a hypothesis.	• Predict what will happen with various solids in water. **Examples:** Salt, sand, sugar, crushed alka-seltzer (all white) • Question – Did your hypothesis work? Answer – No. **Example:** Modify hypothesis (try again)
Applying: Students will be able to describe a hypothesis.	• When presented with a problem, state a hypothesis. **Examples**: 1. Remove water from glass without using hands 2. Mystery box –shoebox containing unknown object(s) • Define hypothesis.
Developing: Students will be able to recognize a problem.	• Define a problem. • Cause and Effect. **Examples:** Patty went to the store with $0.50 and a pop cost a dollar. What's the problem?
Introducing: Students will experience cause and effect situations.	• Use switch to turn objects on/off. **Examples**: Fan, Music

Indicator 2: Apply the skills necessary to conduct scientific investigations.

General Education Standard:
9-12.N.2.1. Students are able to apply science process skills to design and conduct student investigations.

Extended Content:
9-12.A.N.2.1. Students are able to develop a scientific investigation with supervision.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to follow the process of scientific investigation.	• Present a problem (students will conduct experiment with supervision). **Examples**: 1. Burning a piece of paper 2. Dissolving salt in water 3. Heating iron or metal
Applying: Students are able to develop a scientific investigation with supervision.	• Use parts of scientific investigation to participate in the development of a class investigation. **Examples**: 1. Identify problem 2. Educated guess 3. Test 4. Modify 5. Conclusion
Developing: Students will participate in simple scientific experiments.	• Various problems presented for students to predict and test. **Examples:** Removing insoluble solids from water.
Introducing: Students will observe a simple scientific experiment.	• Explore/respond to components of a scientific experiment.

General Education Standard:
9-12.N.2.2. Students are able to practice safe and effective laboratory techniques.

Extended Content:
9-12.A.N.2.2. Students are able to practice safe laboratory techniques.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students practice safe and effective laboratory techniques.	• Emphasis on safety at all times. **Examples**: Safety glasses, Disposal of materials, Aprons, Hot objects handled properly
Applying: Students are able to practice safe laboratory techniques.	• Participate in labs in a safe manner. **Example**: No bumping, shoving, handle equipment in an appropriate manner

Developing: Students will be able to recognize simple safety equipment.	• Present with safety symbols. **Example:** Matching games • Recognize lab safety equipment. **Examples**: Lab apron, Safety glasses • Match pictures/objects of safety equipment.
Introducing: Students observe safe laboratory techniques.	• Observe safe lab procedures. • Clip art pictures of safety symbols. • Respond to presentation of chart of symbols.

Physical Science

Goal 2: Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy.

Indicator 1: Describe structures and properties of, and changes in, matter.

General Education Standard:
9-12.P.1.1. Students are able to use the Periodic Table to determine the atomic structure of elements, valence number, family relationships, and regions (metals, nonmetals, and metalloids).

Extended Content:
9-12.A.P.1.1 Students are able to compare elements of the Periodic Table.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to use the Periodic Table to recognize the properties of the elements.	• Locate symbols on the Periodic Table. • Distinguish between the areas of the Periodic Table. **Examples:** Groups, families
Applying: Students are able to compare elements of the Periodic Table.	• Use a visual model to match symbol to element. **Example:** Match Au to gold • Observe samples of the Periodic Table. **Examples:** Look at gold, touch copper, smell sulfur
Developing: Students are able to identify elements of the Periodic Table.	• Practice writing letters and symbols with a model. • Match elements with symbols using a model. **Example:** Match Au to Au • Use computer simulations to become familiar with the elements.
Introducing: Students are able to access the Periodic Table**.**	• Attend to activities with Periodic Table. **Example:** Participates with other students performing activities. • Respond to presentation of letters and numbers in the Periodic Table. **Example:** Recognize there are letters and numbers in the Periodic Table. • Uses a switch to activate periodic table on the computer.

General Education Standard:
9-12.P.1.2. Students are able to describe ways that atoms combine.

Extended Content:
9-12.A.P.1.2 Students are able to construct models of atoms and compounds.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize atoms combine in different ways.	• Define ionic bond and covalent bonds. • Recognize ionic compounds and covalent compounds and give examples of each.
Applying: Students are able to construct models of atoms and compounds.	• Label atoms and compounds. • Make models of atoms. **Examples:** Models using clay, Use computer simulations • Make models of compounds. **Examples:** Models using Styrofoam, Use computer simulations
Developing: Students are able to discriminate between atoms and compounds.	• Combine substances to make compounds. **Examples:** Combine marshmallows, chocolate and graham crackers to make smores. • Assemble a puzzle (bonding). • Match atoms & compounds.
Introducing: Students are exposed to different substances.	• Participates in sensory activities. **Examples:** 1. Ping pong ball vs. tennis ball 2. Velcro (hard vs. soft) 3. Music (loud vs. quiet) • Attend to various activities involving atoms. • Uses a switch to pick an object (monkey or cow).

General Education Standard:
9-12.P.1.3. Students are able to predict whether reactions will speed up or slow down as conditions change.

Extended Content:
9-12.A.P.1.3. Students are able to recognize the difference between a chemical and physical change.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to recognize that changes in conditions will affect reaction rates. *(Continued on next page)*	• Participates in lab activities involving changes in conditions that affect reaction rates. **Examples:** 1. Explore changes in temperature on reaction rates 2. Explore changes in concentration on reaction

	rates 3. Stirring/crushing/heating/ • Timing reaction rates. **Examples:** Rusting rate of nail in tap water vs. salt water
Applying: Students are able to recognize the difference between a chemical and physical change.	• Identify pictures in which charge occurred. • Participate in lab activities involving chemical and physical change. **Examples:** 1. Tearing paper vs. burning paper 2. Volcano (baking soda and vinegar) • Observing sensory changes. **Examples:** Changes in color, changes in smell, changes in taste
Developing: Students are able to recognize when a change takes place.	• Participates in cooking activities. **Examples:** Boiling an egg, Baking a cake or cookies, dissolving Kool-Aid in water
Introducing: Students are exposed to different reactions.	• Participates in sensory activities. **Examples:** 1. Hot vs. cold (hot/cold packs) 2. Rubs hands together 3. Ice cube melt • Attends to various activities involving reactions. • Uses a switch to activate programs on computer.

General Education Standard:
9-12.P.1.4. Students are able to balance chemical equations by applying the Law of Conservation of Matter.

Extended Content:
9-12.A.P.1.4. Students are able to demonstrate knowledge of the Law of Conservation of Matter.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to balance previously written equations.	• With teacher supervision, students will be able to place coefficients to balance equations. • Examine equations to determine if they are properly balanced.
Applying: Students are able to demonstrate knowledge of the Law of Conservation of Matter. *(Continued on next page)*	• Use a balance to compare or contrast the mass of a whole to its parts. **Example:** 1. Weigh a bag of M&M's then M&M's separately. 2. Weigh an apple then cut it and weigh the parts. • Measure various substances.

	Examples: 1. Volume (rice & sand) 2. Length (licorice & paper) 3. Area (fruit roll-ups)
Developing: Students are able to recognize that matter can not be destroyed.	• Manipulate substances. **Examples:** 1. Take an apple and cut it into pieces 2. Ripping paper • Make mixtures **Examples:** 1. Chex Mix 2. Soap & Water
Introducing: Students are exposed to different types of matter.	• Participate in sensory activities. **Examples:** 1. Play Dough 2. Touch and manipulate different samples of matter • Attend to various activities involving matter. • Use a switch to activate different objects.

General Education Standard:
9-12.P.1.5. Students are able to distinguish among chemical, physical, and nuclear changes.

Extended Content:
9-12.A.P.1.5. Students are able to identify chemical and physical changes.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain whether a physical or chemical change has occurred.	• Conduct experiment and explain the physical or chemical change. **Examples:** 1. Burning vs. crumpling paper (why is the change chemical or physical) 2. Burn a candle and observe the changes (both chemical and physical changes)
Applying: Students are able to identify chemical and physical changes.	• Participate in an experiment and identify whether it is a chemical or physical change. **Example:** 1. Burning vs. crumpling paper (which is chemical or physical) • Identify chemical and physical changes. **Examples:** 1. Dissolving vs. burning 2. Grinding vs. baking 3. Make ice cream (changes from liquid to solid)

Developing: Students will explain simple changes.	• Explain simple changes. **Examples:** 1. Ice cube left on table and melted 2. Burning a paper 3. Making a smoothie 4. Cutting objects 5. Making silly putty or slime
Introducing: Students will observe change.	• With assistance students will manipulate different sensory objects. **Example:** 1. Feel an orange, peel it and feel it again. 2. Feeling individual ingredients to pudding and feel final product 3. Put an egg in vinegar • Participate in activities involving change. • Using a switch, students will activate a mixer to change a food. • Attend to illustrations/clips of change.

Indicator 2: Analyze forces, their forms, and their effects on motions.

General Education Standard:
9-12.P.2.1. Students are able to apply concepts of distance and time to the quantitative relationships of motion using appropriate mathematical formulas, equations, and units.

Extended Content:
9-12.A.P.2.1. Students are able to demonstrate an understanding of speed.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to calculate speed.	• Using a calculator to measure the distance and time a toy car moves. Speed = Distance/Time • Participate in a 50 yard dash – calculate speed.
Applying: Students are able to demonstrate an understanding of speed.	• Feel speed. **Example**: Riding bikes, Speedometer in a car (20 mph vs. 60 mph) • Observe speed. **Example:** 1. Compare rates of finishing a task 2. Remote control race cars
Developing: Students are able to compare speeds.	• Explore time. **Example:** Stop watch, metronome • Explore distance (with assistance). **Example**: 1. Use appropriate measuring tool 2. Measure various lengths

Introducing: Students are exposed to time and distance through activities.	• With assistance students will manipulate different sensory objects. **Example:** 1. Set timers 2. Take students to same destinations in school using different routes. • Participate in activities involving speed and distance. • Using a switch, students will activate a timer.

General Education Standard:
9-12.P.2.2. Students are able to predict motion of an object using Newton's Laws.

Extended Content:
9-12.A.P.2.2. Students are able to predict motion.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain the causes of motion.	• Recognize force affects objects. **Examples**: 1. Kicking a football 2. Hitting a baseball 3. Pulling a wagon • Recognize that not all forces cause motion. **Examples**: 1. Push against the wall-the wall does not move. 2. Stomp on the floor – the floor does not move.
Applying: Students are able to predict motion.	• Predict motion of interacting objects. **Examples**: Tether ball, Marbles, Hot Wheel cars moving down a track, Playing a game of pool
Developing: Students recognize forces effect objects.	• Observe effects of forces. **Examples**: Hammer and nails, Friction (rubbing two different surfaces together), Pushing an object, Snapping rubber bands
Introducing: Students will explore the motion of objects.	• With assistance students will manipulate different sensory objects. **Examples:** 1. Moving wheelchairs 2. Rub hands together 3. Pick up Koosh ball and drop it • Attends to activities involving motion of objects. • Using a switch, students will activate a remote control car.

General Education Standard:
9-12.P.2.3. Students are able to relate concepts of force, distance, and time to the quantitative relationships of work, energy, and power.

Extended Content:
9-12.A.P.2.3. Students will relate energy to work.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate an understanding of work, energy and power.	• Participate in experiment with assistance. {power=(force X distance)/time} **Examples**: Climbing stairs, lifting objects from one level to a higher level
Applying: Students will relate energy to work.	• Observe movement due to energy transfer. **Examples**: Pinwheel, candle chime (light candle and air flow makes angel spin) • Observe simple machines. **Example**: Levers, pulleys
Developing: Students will demonstrate work.	• Demonstrate work. **Examples**: 1. Students will move an object through a distance 2. Have the students move rather simple items.
Introducing: Students will participate in movement activities.	• With assistance students will manipulate different sensory objects. **Example:** 1. Move around room. 2. With assistance move body parts. • Participate in activities involving movement. • Using a switch, students will activate a remote control car.

Indicator 3: Analyze interactions of energy and matter.

General Education Standard:
9-12.P.3.1. Students are able to describe the relationships among potential energy, kinetic energy, and work as applied to the Law of Conservation of Energy.

Extended Content:
9-12.A.P.3.1 Students are able to differentiate between forms of energy.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate changes in energy. *(Continued on next page)*	• Demonstrate changes in energy. **Examples**: 1. Putting a light on a solar calculator

	2. Wind up toy 3. Batteries/Flashlight
Applying: Students are able to differentiate between forms of energy.	• Compare forms of energy. **Examples**: 1. Electrical 2. Mechanical 3. Light 4. Heat 5. Sounds • Observe transfer of energy and identify type. **Examples**: 1. Tuning fork in water 2. Crashing model cars 3. Heating water 4. Melting cheese
Developing: Students will be able to identify different forms of energy.	• Match different forms of energy. • Identify if an action is a form of energy. **Examples**: 1. Strike a match 2. Clap hands 3. Listen to music 4. Visit a construction site 5. Visit power plant
Introducing: Students experience the effects of energy.	• With supervision students will manipulate different sensory objects. **Example:** 1. Put hand in front of blow dryer. 2. With assistance clap hands. 3. Feel radio speakers for vibrations. • Participate in activities involving energy. • Using a switch, students will activate music or other forms of energy.

General Education Standard:
9-12.P.3.2. Students are able to describe how characteristics of waves are related to one another.

Extended Content:
9-12.A.P.3.2. Students are able to describe characteristics of waves.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students recognize different parts of the waves.	• Recognize different parts of waves. **Examples**: Illustration of a wave (crest, trough, amplitude, wavelength)

Applying: Students are able to describe characteristics of waves.	• Observe waves. **Examples**: Slinky, Wave tanks • Describe characteristics of waves. **Examples**: Size, Direction
Developing: Students will observe different types of waves.	• Match different characteristics waves. • Observe waves. **Examples:** 1. Go to lake and observe waves. 2. Slinky 3. Watch a football game and watch the human wave. • Use computer software from internet about waves.
Introducing: Students will be able to manipulate different types of waves.	• With supervision students will manipulate different sensory objects. **Example:** 1. Splash water to make waves 2. Slinky • Participate in activities involving different types of waves. • Using a switch, students will activate computer software on waves.

General Education Standard:
9-12.P.3.3. Students are able to describe electrical effects in terms of motion and concentrations of charged particles.

Extended Content:
9-12.A.P.3.3. Students are able to observe and discuss electrical circuits.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to demonstrate electrical circuits.	• With supervision, students will construct a simple circuit. **Examples**: Connect a wire, battery and light bulb
Applying: Students are able to observe and discuss electrical circuits.	• Identify/recognize different components of a circuit. **Examples**: 1. Series (kits available) 2. Parallel (kits available) • Use computer software and available internet sites on circuits.
Developing: Students will explore different charged objects.	• Explore charged objects. • Participate in activities involving charges. **Examples**: 1. Rub balloon on head for a charge 2. Static electricity 3. Rubbing feet on carpet 4. Electroscope

Introducing: Students will observe effects of charge.	• Observe charged objects. • Attend to activities involving charged objects. **Examples**: 1. Rub balloon on head for a charge 2. Static electricity 3. Rubbing feet on carpet 4. Electroscope • Use a switch, to activate computer.

Life Science

Goal 3: Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment.

Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.

General Education Standard:
9-12.L.1.1. Students are able to relate cellular functions and processes to specialized structures within cells.

Extended Content:
9-12.A.L.1.1. Students are able to identify different cellular structures.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will relate basic cell functions to basic cell structures.	• Differentiate between plant and animal cells. • Match function with structure. **Examples**: Cell wall, cell membrane, nucleus
Applying: Students are able to identify different cellular structures.	• Build cells. **Examples**: 1. Macaroni Cell – take a piece of paper and use different foods for parts of cell. 2. Jello cell – Use various fruits and put in Jello or pudding to symbolize the parts of the cell. • Use computer software to show cell interaction.
Developing: Students are able to recognize a cell and that it is made up of small parts.	• Look at microscope slides. • Use computer software to show cell interaction. • Watch science movies on cells. • Match pictures of cells.
Introducing: Students attend to the concept of cells.	• Attends to activities with cells. **Example:** 1. Building blocks as cells to build something bigger 2. Honeycomb cereal to illustrate cells • Participate in activities involving cells. • Uses a switch to activate computer software on cells.

General Education Standard:
9-12.L.1.2. Students are able to classify organisms using characteristics and evolutionary relationship of major taxa.

Extended Content:
9-12.A.L.1.2. Students are able to recognize organisms are classified based on characteristics.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will be able to classify several organisms in to groups.	• Use computer simulations to sort organisms into groups. • Group pictures of various organisms. • Group specimens of various organisms.
Applying: Students are able to recognize organisms are classified based on characteristics.	• Use media to gain information on different types of organisms. **Examples**: Ocean, Africa • Discuss different species. **Examples**: 1. Dogs: Great Dane and Cocker Spaniels are dogs but different breeds. 2. Birds: Doves and Robins and birds but different types.
Developing: Students recognize animals/plants have similarities and differences.	• Identify/match similarities between animals. **Examples**: 1. Birds have wings and feathers. 2. Dogs bark and have fur. • Identify differences between animals. **Examples**: 1. Birds have different shaped claws and beaks. 2. Dogs are different snouts and size.
Introducing: Students explore different types of animals/plants.	• Attends to activities with plants and animals. **Example:** 1. Hold different types of stuffed animals. 2. Listen to different animal sounds. 3. Look at different plants. • Uses a switch to activate animal sounds on the computer.

General Education Standard:
9-12.L.1.3. Students are able to identify structures and function relationships within major taxa.

Extended Content:
9-12.A.L.1.3. Students are able to identify how structure and function are related to each other.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will explain why different organisms have different structures.	• Discussion of relationships. **Examples:** 1. Swim Bladder-fish 2. Hollow bones- birds 3. Wet skin- frogs • View movies illustrating different organisms and their structures.
Applying: Students are able to identify how structure and function are related to each other.	• Describe or match different relationships. **Examples**: 1. Giraffe- neck 2. Elephant- trunk 3. Tiger- stripes • Draw/cut out pictures of animals with various body structures.
Developing: Students will recognize animals/plants have similar structures for similar uses.	• Relate structures to uses. **Examples:** Wings- fly, Legs- Run, Fins- Swim • Play charades involving use of structures in plant and/or animals.
Introducing: Students will be introduced to different types of animals/plants.	• With assistance, students will use a computer to do clip art. • Bring in various plants/flowers. • Listen to animal sounds. • Bring in collections of bugs. • Attend to presentation of different plants/animals.

Indicator 2: Analyze various patterns and products of natural and induced biological change.

General Education Standard:
9-12.L.2.1. Students are able to predict inheritance patterns using a single allele.

Extended Content:
9-12.A.L.2.1. Students are able to recognize traits are inherited.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to define the concept of dominant and recessive.	• Discuss dominant vs. recessive. **Example:** Hair color, Eye color, Rolling tongue • Make a chart of students in the class using dominant and recessive characteristics.
Applying: Students are able to recognize traits are inherited. *(Continued on next page)*	• Recognize inherited traits. **Examples**: 1. Bring in family photos – similarities and differences 2. Puppy litter – similarities difference

	• Use internet resources to find information on inherited traits.
Developing: Students will recognize animals of same species have differences.	• Look at similarities and differences of different animals. • Go to a farm and look at different animals. • Separate M & M's by color or plain/peanut. • Match pictures of animals.
Introducing: Students will explore different types of traits.	• Participates in sensory activities. **Examples:** 1. Feel different kinds of fur 2. Smell flowers • Attends to various activities involving inherited traits. • Uses a switch to activate programs on computer.

General Education Standard:
9-12.L.2.2. Students are able to describe how genetic recombination, mutations, and natural selection lead to adaptations, evolution, extinction, or the emergence of new species.

Extended Content:
9-12.A.L.2.2. Students will recognize organisms can become extinct.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students will give a reason why organisms can become extinct.	• View media of pre-historic times (dinosaurs). • Use internet to find resources on extinction.
Applying: Students will recognize organisms can become extinct.	• Field trip to see fossils. • Use internet to find resources on extinction.
Developing: Students recognize an animal that is extinct.	• Attend to movies of pre-historic times (dinosaurs). • Select photo of extinct species (dog and dinosaur). • Match fossil to picture of extinct species.
Introducing: Students will attend to presentation on extinct animals.	• Attends to various activities involving extinct animals (watch movie). • Uses a switch to activate programs on computer.

Indicator 3: Analyze how organisms are linked to one another and the environment.

General Education Standard:
9-12.L.3.1. Students are able to identify factors that can cause changes in stability of populations, communities, and ecosystems.

Extended Content:
9-12.A.L.3.1. Students will be able to illustrate a food chain and food web.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe populations and communities.	• Fill-in the blank food chains. • Distinguish between population and community. **Example**: Takes pictures of populations around school to make a bulletin board of a community.
Applying: Students will be able to illustrate a food chain and food web.	• Make food chain by cutting out pictures from magazines. • Drawings of food chains from a model.
Developing: Students will be able to identify a community.	• Observe an aquarium or ant colony and discuss communities. • Observe school community and hometown community and discuss. • Sort objects by population. • Field trip to pet store or Humane Society.
Introducing: Students will observe different types of populations.	• Attends to various activities involving populations. • Identify different types of populations (horses) on a switch. • Use a switch to choose a book on horses or dogs.

Earth/Space Science

Goal 4: Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth.

Indicator 1: Analyze the various structures and processes of the Earth system.

General Education Standard: **9-12.E.1.1. Students are able to explain how elements and compounds cycle between living and non-living systems.** **Extended Content** **9-12.A.E.1.1. Students are able to identify cycles.**	
Grade Level Alternate Academic Achievement Descriptors:	**Target Skills**
Advancing: Students are able to summarize a cycle between living and non-living systems.	• Draw or illustrate a cycle. **Examples:** 1. Water cycle 2. Oxygen cycle • Create a bulletin board of a cycle. • Use internet resources to find information on cycles.

Applying: Students are able to identify cycles.	• Identify water cycle. • Conduct an experiment. **Example:** 1. Observe a glass of ice water 2. Evaporate and condense water • Use internet resources to find information on water cycles.
Developing: Students are able to recognize cycles.	• Follow a picture schedule of student's day. • Make a schedule of a dream weekend. • Use internet to learn about cycles.
Introducing: Students attend to living and non-living.	• Attends to activities about living and non-living. **Example:** 1. Observe aquariums for living and non-living. 2. Take a nature walk to look for living and non-living. 3. Look at live plants losing their leaves for living and non-living.

General Education Standard:
9-12.E.1.2. Students are able to describe how atmospheric chemistry may affect global climate.

Extended Content
9-12.A.E.1.2. Students are able to describe the effects of pollution.

Grade Level Alternate Academic Achievement Descriptors:	Target Skills
Advancing: Students are able to explain the effects of pollutions.	• Name outcomes of pollution. **Examples**: Smog, global warming • Take water samples to test for pollutants.
Applying: Students are able to describe the effects of pollution.	• Explain the concept of contamination. **Example**: Drink a glass of water and compare it to tasting salt water. • Watch media on pollution and indicate when pollution occurs. **Example**: Fern Gully
Developing: Students are able to identify different types of pollution.	• Make a poster showing pollution. **Examples:** 1. Factories putting smoke in air 2. Garbage in river 3. Throwing trash out a car window • Watch media on pollution. **Example**: Fern Gully
Introducing: Students will able to explore an environment that can become polluted. *(Continued on next page)*	• Respond to media on pollution. **Example**: Fern Gully • Respond to activities about pollution. **Example:** 1. Look at pictures of pollution.

	2. Feel clean water vs. water with oil/baby powder. • Public service project. **Example:** Pick up trash around the school grounds.

General Education Standard: **9-12.E.1.3. Students are able to assess how human activity has changed the land, ocean, and atmosphere of Earth.** **Extended Content** **9-12.A.E.1.3. Students are able to identify changes in the environment due to human activity.**	
Grade Level Alternate Academic Achievement Descriptors:	**Target Skills**
Advancing: Students are able to describe the effects of humans on the environment.	• Participate in activities that demonstrate changes in human effects on environment over time. **Examples**: 1. Make posters of the environment. 2. Field trip to museum to look at records. 3. Use computer to find information on environment.
Applying: Students are able to identify changes in the environment due to human activity.	• Compare the past with the present. **Examples**: 1. Compare pictures of any town 100 year ago to today. 2. Find pictures of land forms of the past and present. 3. Find satellite pictures of earth. • Matches media comparing past vs. present.
Developing: Students are able to recognize land, ocean, and atmospheric changes due to human activity.	• Develop models of land, ocean and atmospheric environments. **Examples**: 1. Use clay for models. 2. Shoe box panorama. 3. Use paint programs on computer to develop a model. • Match media comparing past vs. present.
Introducing: Students explore living conditions.	• Responds to media comparing past vs. present. • Participate in activities exploring environments. **Example:** 1. Observe aquariums 2. Observe terrarium • With assistance create pictures of environments. **Examples**: 1. Ocean in a bag 2. Desert • Explore different plants/flowers from different environments.

Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.

General Education Standard: **9-12.E.2.1. Students are able to recognize how Newtonian mechanics can be applied to the study of the motions of the solar system.** **Extended Content** **9-12.A.E.2.1. Students are able to describe a planet's motion.**	
Grade Level Alternate Academic Achievement Descriptors:	**Target Skills**
Advancing: Students are able to describe a planet's motion within a solar system.	• Describe how a day results from rotation and a year results from revolution. **Examples:** Star Lab, Create models of Sun and planets
Applying: Students are able to describe a planet's motion.	• Describe rotation and revolution. **Examples:** Models using basketball and tennis ball
Developing: Students demonstrate how an object rotates.	• Respond to a cue to rotate an object. • Participates in activities involving rotation. **Examples**: Merry-go-round, Sit-in-spin, Pinwheel
Introducing: Students explore characteristics of a planet.	• Participates in sensory activities. **Examples**: Round objects, textured objects (rough, smooth), pinwheel

Science, Technology, Environment, and Society

Goal 5: Students will identify and evaluate the relationship and ethical implications of science upon technology, environment, and society.

Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.

General Education Standard: **9-12.S.1.1. Students are able to explain ethical roles and responsibilities of scientists and scientific research.** **Extended Content:** **9-12.A.S.1.1. Students are able to discuss fact and opinion as related to science.**	
Grade Level Alternate Academic Achievement Descriptors	**Target Skills**
Advancing: Students are able to identify current ethical situations in science.	• Participate in a discussion about ethical science topics. **Examples**: Cloning, cancer research, stem cell research

Applying: Students are able to discuss fact and opinion as related to science.	• Differentiate between scientific fact and opinion. **Examples:** I think he's tall vs. He is 6'5"
Developing: Students are able to identify true and false statements as related to science.	• Respond to true/false questions relating to science. **Examples**: 1. Your hair is black? 2. Your eyes are blue? 3. Lunch is at 5:00 PM?
Introducing: Students respond to yes/no questions.	• Answers yes/no questions using voice out put, communication device, hit a switch for yes/no, eye gaze.

General Education Standard:
9-12.S.1.2. Students are able to evaluate and describe the impact of scientific discoveries on historical events and social, economic, and ethical issues.

Extended Content:
9-12.A.S.1.2. Students are able to describe the impact of science on their lives.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain the impact of science on their lives and in their community.	• Participate in a discussion about the impact of various factors on their lives and communities. **Examples:** computers, freezers, calculators • Good vs., Bad (ethics)
Applying: Students are able to describe the impact of science on their lives.	• Participate in a discussion about the impact of science on their lives. • Construct pictographs. **Example:** Connect pictures of students to pictures of influences (laptop, freezer)
Developing: Students will be able to state how a simple scientific discovery has impacted life.	• State simple scientific discoveries. **Examples:** Refrigerator, batteries, game boys, computers • Select pictures of discoveries. **Examples:** Cut **or** Color pictures
Introducing: Students explore simple scientific discoveries.	• Observe/participant in activities involving scientific discoveries. • Identify pictures on computer using switch technology.

Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.

General Education Standard:
9-12.S.2.1. Students are able to describe immediate and long-term consequences of potential solutions for technological issues.

Extended Content:
9-12.A.S.2.1 Students are able to describe technological issues.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to describe consequences of a technological issue.	• State a technological issue and its consequence. **Examples**: Computers – list consequence of computers • Participate in a discussion about ethical issues regarding technological advances. • Introduce consequences of scientific advances. **Examples:** 1. Cloning 2. Stem Cell Research
Applying: Students are able to describe technological issues.	• Participate in a discussion about various technological issues. **Examples:** 1. Computer-good vs. bad 2. Telephone-cellular 3. Automobiles 4. Space exploration 5. Cloning
Developing: Students are able to indicate types of technology.	• Participate in different activities involving technology. **Examples:** 1. Poster boards with pictures 2. Bulletin boards • Identify different technology in classroom and school.
Introducing: Students use technology.	• Observe/participate in activities involving technology. • Identify pictures on computer using switch technology. • Play computer games.

General Education Standard:
9-12.S.2.2. Students are able to analyze factors that could limit technological design.

Extended Content:
9-12.A.S.2.2. Students are able to recognize a cause of technological limits.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to explain a technological limitation.	• Develop an example of a technological limit. **Examples:** 1. Size-how small can we go 2. Computer parts 3. Cost
Applying: Students are able to recognize a cause of technological limits.	• Participate in a discussion about causes of a limit. **Examples**: 1. Science-discoveries 2. Morals-ethics 3. Money-cost
Developing: Students are able define limits.	• What is a limit? • List limits students have. **Examples**: School limits/rules, home limits • Recognize what "no" means.
Introducing: Students observe various technological devices.	• Use technology to play games. • Use technology to make a choice. • Use a switch to turn on/off a device.

General Education Standard:
9-12.S.2.3. Students are able to analyze and describe the benefits, limitations, cost, and consequences involved in using, conserving, or recycling resources.

Extended Content:
9-12.A.S.2.3. Students are able to relate recycling to their lives.

Grade Level Alternate Academic Achievement Descriptors	Target Skills
Advancing: Students are able to identify benefits of recycling.	• Develop a flow chart. • Participate in a discussion about how recycling helps the environment. **Examples**: Save trees, O_2, Ozone, Lower costs
Applying: Students are able to relate recycling to their lives.	• Participate in a discussion about recycling issues. • Participate in a recycling project. **Examples**: Pick up trash along highway, pick up around school, recycling activities
Developing: Students recognize recycling symbols. *(Continued on next page)*	• Exposure to recycling symbols. **Examples**: Matching games, tour the school to see symbols

	• Find recycling locations in school. **Examples:** 1. Scavenger hunt for symbols 2. Count number of recycling symbols
Introducing: Students participate in recycling.	• Uses technology to complete a recycling activity. • Place items in recycling containers. • Create recycling signs. **Examples**: Clip art, cutting, painting