

TASD Kindergarten Science

Unit #1: BIOLOGICAL SCIENCES

Unit Summary-

The primary focus of the unit is the understanding as related to:

- The characteristics of living things
- Ecosystems

3.1 Biological Sciences

3.1.A: Organisms and Cells

3.1.K.A

3.1.K.A1: Identify the similarities and differences of living and non-living things.

3.1.K.A3: Observe, compare, and describe stages of life cycles for plants and/or animals.

3.1.K.A5: Observe and describe structures and behaviors of a variety of common animals.

3.1.K.A9: Distinguish between scientific fact and opinion. Ask questions about objects, organisms, and events. Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Overarching Understandings:

- Plants and animals are living things. Living things need air, water, food, sunlight, space, and shelter to grow.

Topical Understandings:	Essential Questions
<ul style="list-style-type: none">• Identify words and construct meaning from texts, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues.• Apply knowledge about life processes to distinguish between living and nonliving things.• Demonstrate the knowledge that the environments have living and nonliving parts.	<p><i>What do plants and animals need?</i></p> <ul style="list-style-type: none">• What are nonliving things?• What are living things?• How does air help plants and animals?• How does water help plants and animals?• How does food help plants and animals?• What else do plants and animals need?

<ul style="list-style-type: none"> ● Demonstrate the knowledge of the basic needs of living things (food, water, space). ● Demonstrate the knowledge that the activities of humans affect plants and animals. ● Show understanding of ways that animals obtain food from other plants and animals. ● Demonstrate the knowledge that if living things do not get basic needs they will die. ● Demonstrate the knowledge that when tests are repeated under the same condition, similar results are usually obtained. 	<ul style="list-style-type: none"> ● What can grow?
Knowledge	Skills
<ul style="list-style-type: none"> ● Vocabulary terms: <ul style="list-style-type: none"> ○ Nonliving ○ Object ○ Living ○ Plant ○ Need ○ Air ○ Water ○ Animal ○ Food ○ Light ○ Space ○ Shelter 	<p><i>Observe and Classify</i> -Examine and sort living from nonliving things</p> <p>Collect Data -Plant a seed and a marble/rock and collect data on results</p> <p><i>Communicate</i> -Tell how living and nonliving things are alike and different</p>

Unit #2: BIOLOGICAL SCIENCES

Unit Summary-

The primary focus of the unit is the understanding as related to:

- The characteristics of living things
- Ecosystems

3.1.B: Genetics

3.1.K.B

3.1.K.B1: Observe and describe how young animals resemble their parents and other animals of the same kind.

3.1.K.B6: Distinguish between scientific fact and opinion. Ask questions about objects, organisms, and events. Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Overarching Understandings:

All living things grow and change. Plants and animals are living things. As plants and animals grow, they may get bigger. The size, color, and other aspects of some plants' and animals' appearance may change. All animals are alike in some ways and different in other ways. The young of most animals look like their parents in some way.

Topical Understandings	Essential Questions
<ul style="list-style-type: none">• Identify words that name persons, places, or things and words that name actions.• Describe how organisms change as they grow and mature.• Name animal offspring (puppies, kittens, cubs, calves, chicks, children)• Demonstrate the knowledge of selected characteristics of plants and animals (shape, size, color)• Demonstrate the knowledge that when tests are repeated under the same condition, similar results are usually obtained.	<p><i>How do plants and animals grow and change?</i></p> <ul style="list-style-type: none">• How do animals' appearances change to resemble their parents?• How do animals move?• How are these animals alike and different?• What are the parts of a plant?• How do plants grow?

Knowledge	Skills
<ul style="list-style-type: none">● Vocabulary terms:<ul style="list-style-type: none">○ Grow○ Change○ Move○ Swim○ Alike○ Different○ Leaf○ Flowers○ Seed○ Tree	<p>Infer -Determine other things grow and change</p> <p>Classify -Sort animals based on how they move</p> <p>Observe and Communicate -Discuss how you have grown and changed since infancy -Tell how all animals are alike and different</p> <p>Interpret data -Use drawings to describe a life cycle</p>

Unit #2 BIOLOGICAL SCIENCES

Unit Summary-

The primary focus of the unit is the understanding as related to:

- The characteristics of living things
- Ecosystems

3.1.C: Evolution

3.1.K.C

3.1.K.C2: Describe changes animals and plants undergo throughout the seasons.

3.1.K.C3: CONSTANCY AND CHANGE- Describe changes that occur as a result of climate.

3.1.K.C4: Distinguish between scientific fact and opinion. Ask questions about objects, organisms, and events. Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Overarching Understandings:

Plants and animals can live on land or in water. Certain types of plants and animals can be found in very hot or very cold places.

Topical Understandings	Essential Questions
<ul style="list-style-type: none">• Identify words and construct meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues.• Identify words that name persons, places, or things and words that name actions.• Use knowledge of appropriate grade, age, and developmental level vocabulary level in reading• Demonstrate the knowledge that plants and animals are found in different kinds of environments (hot, cold, wet, dry, sunny, dark) and are often hidden.• Demonstrate the knowledge that animals and plants can be associated with their environment by an examination of their	<p>Where do plants and animals live?</p> <ul style="list-style-type: none">• What are some plants and animals that live on land?• What are some plants and animals that live in water?• What are some plants and animals that live in hot places?• What are some plants and animals that live in cold places?• What are some other places plants and animals live?

<p>structural characteristics.</p> <ul style="list-style-type: none"> ● Demonstrate the knowledge that animals and plants can live in different habitats. ● Demonstrate the knowledge that if living things do not get food, water, shelter, and space, they will die. ● Chart daily weather changes. ● Demonstrate the knowledge that the five senses allow us to take in and respond to information in order to learn about our surroundings. ● Recognize that continuous patterns occur in nature. ● Understand that temperature can be measured several times and results will be similar when tested under the same conditions.. 	
<p>Knowledge</p>	<p>Skills</p>
<ul style="list-style-type: none"> ● Vocabulary Terms: <ul style="list-style-type: none"> ○ Land ○ Field ○ Pond ○ Ocean ○ Desert ○ cactus ○ cold ○ snow ○ mountain ○ grassland 	<p>Classify -Classify animals with their appropriate habitats.</p> <p>Observe -Examine animals in their natural habitat -Determine how different conditions affect plants and animals</p> <p>Communicate -Compare plants in different climates. -Compare animals in different climates.</p> <p>Modeling -Make a model of a habitat for shared observations</p>

Unit #3: PHYSICAL SCIENCES

Unit Summary-

The primary focus of the unit is the understanding as related to:

- The properties of matter
- Motion, force, and energy

3.2.A: [Chemistry](#)

3.2.K.A

3.2.K.A1: Identify and classify objects by observable properties of matter. Compare different kinds of materials and discuss their uses.

3.2.K.A3: Describe the way matter can change.

3.2.K.A5: **CONSTANCY AND CHANGE** Recognize that everything is made of matter.

3.2.K.A6: Distinguish between scientific fact and opinion. Ask questions about objects, organisms, and events. Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Overarching Understandings:

Objects can be described, classified, and compared by their composition and their physical properties.

Topical Understandings	Essential Questions
<ul style="list-style-type: none">• Demonstrate the understanding that objects have many different observable properties• Demonstrate understanding that some objects are made up of many different materials• Demonstrate knowledge that matter exists in different states (solid, liquid, gas)• Demonstrate knowledge that materials can be changed by cutting, folding, bending, and mixing• Demonstrate the ability to collect information	<p>How can you describe things?</p> <ul style="list-style-type: none">• What are some kinds of objects?• What can you tell about objects?• What is a solid?• What is a liquid?• What is a gas?• How can you change solids, liquids, and gases?
Knowledge	Skills

● Vocabulary Terms

- Size
- Shape
- Color
- Weight
- Hard
- Soft
- Matter
- Solid
- Liquid
- Sink
- Float
- Gas
- Container
- Fold
- Bend
- Freeze

Observe

-Tell how solids and liquids can change states of matter

Collect Data

-Draw observations of the changing of states of matter (melting, freezing)

Classify

-Classify matter as a solid, liquid, or gas

Unit #3 PHYSICAL SCIENCES

Unit Summary-

The primary focus of the unit is the understanding as related to:

- The properties of matter
- Motion, force, and energy

3.2.B: [Physics](#)

3.2.1.B1: Demonstrate various types of motion. Observe and describe how pushes and pulls change the motion of objects.

3.2.K.B3: Describe how temperature can affect the body.

3.2.K.B6: ENERGY Recognize that light from the sun is an important source of energy for living and nonliving systems and some source of energy is needed for all organisms to stay alive and grow.

3.2.K.B7: Distinguish between scientific fact and opinion. Ask questions about objects, organisms, and events. Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Overarching Understandings:

- There is a relationship between force and motion.
- Heat can be produced and released in many ways. The Sun supplies heat and light energy to Earth.

Topical Understandings	Essential Questions
<ul style="list-style-type: none">• Demonstrate knowledge that the motion of an object can be changed by a push or a pull• Name objects that roll, slide, or fly• Demonstrate the understanding that things move at different speeds• Know that vibrations caused by sound waves can be felt• Know that objects can be described, classified, and compared by their composition and their physical properties• Demonstrate understanding of the effects of Sun and shade on the same object.	<p>How do things move?</p> <ul style="list-style-type: none">• How can you move objects?• What are some ways objects move?• How else can objects move?• How fast can it move?• What does it sound like?• What do magnets do? <p>What gives us heat and light?</p> <ul style="list-style-type: none">• What do you get from the Sun?• How can you make a shadow?

<ul style="list-style-type: none"> ● Demonstrate knowledge that light can pass through some objects but cannot pass through other objects. ● Demonstrate knowledge of some processes where heat can be released. ● Demonstrate understanding of systems of matter and energy. ● Demonstrate understanding that people use scientific processes including hypotheses, making inferences, and recording and communicating data when exploring the natural world. ● Use the senses, tools, and instruments to obtain information from one's surroundings. 	<ul style="list-style-type: none"> ● What gives off heat? ● What makes these objects work?
Knowledge	Skills
<ul style="list-style-type: none"> ● Vocabulary Terms <ul style="list-style-type: none"> ○ Sun ○ Heat ○ Shadows ○ Shade ○ Fire ○ Friction ○ Energy ○ Electricity ○ Pushing ○ Pulling ○ Direction ○ Places ○ Fly ○ Turn ○ Twirl ○ Fast ○ Slow ○ Sound ○ Loud ○ Magnet ○ Attract ○ Metal 	<p>Observe and Compare -Compare mobile and fixed objects</p> <p>Observe and Collect Data -Record if objects make loud or soft sounds</p> <p>Classify -Sort objects that roll and do not roll</p> <p>Observe, Collect Data, and Communicate -Examine, record, compare, and discuss the positions of the sun throughout the day -Observe and discuss the presence or absence of shadows from opaque and transparent objects</p> <p>Predict and Infer -Conclude that objects are heated by the sun</p>

Unit #4: EARTH AND SPACE SCIENCES

Unit Summary-

The primary focus of the unit is the understanding as related to:

- Earth's landforms and resources
- Weather and space

3.3: Earth and Space Sciences

3.3.K.A1: Distinguish between three types of earth materials – rock, soil, and sand.

3.3.K.A2: Intentionally Blank

3.3.K.A3: Intentionally Blank

3.3.K.A4: Identify sources of water for human consumption and use.

3.3.K.A5: Record daily weather conditions using simple charts and graphs, Identify seasonal changes in the environment, Distinguish between types of precipitation.

3.3.K.A6: Intentionally Blank

3.3.K.A7: Distinguish between scientific fact and opinion. Ask questions about objects, organisms, and events. Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.

Overarching Understandings:

- Solid materials of all sizes make up the earth. Life occurs on or near the surface of the earth in land, air, and water. Human activities affect plants and animals' quality of life. Air and water meet the basic needs of living things. Information can be collected from our surroundings to recognize patterns in nature (seasons, phases of the Moon, blooming flowers).

Topical Understandings	Essential Questions
<ul style="list-style-type: none">• Demonstrate the knowledge that the surface of the Earth is composed of different types of solid materials (for example, sand, pebbles, rocks, clumps of dirt)• Demonstrate understanding that the solid materials making up the earth come in all sizes, from boulders to grains of sand• Demonstrate the knowledge that the activities of human beings	<p>How do we use Earth's land, water, and air?</p> <ul style="list-style-type: none">-What makes up the Earth's surface?-What are some of Earth's landforms?-How can we use land on Earth?-Where is water found on Earth?-How do we use water and air?

<p>affect plants and animals in many ways.</p> <ul style="list-style-type: none"> ● Know that life occurs on or near the surface of the Earth in land, water, and air ● Know some of the basic needs of living things (food, water, space). ● Know ways to care for the Earth ● Use charts to display daily weather changes ● Demonstrate the understanding that the five senses allow us to take in and respond to information about our surroundings ● Demonstrate the understanding that continuous patterns occur in nature 	<p>-How can you help care for the Earth?</p> <p>What is the weather like in each season?</p> <p>-What are different kinds of weather?</p> <p>-What is spring?</p> <p>-What is summer?</p> <p>-What is fall?</p> <p>-What is winter?</p> <p>-What are different kinds of storms?</p>
<p>Knowledge</p>	<p>Skills</p>
<ul style="list-style-type: none"> ● Vocabulary Terms <ul style="list-style-type: none"> ○ Earth ○ Rock ○ Soil ○ Sand ○ Shape ○ Form ○ Farming ○ Wood ○ River ○ Lake ○ Ice ○ Windmill ○ Clearing ○ Protect ○ Recycle ○ Weather ○ Warm ○ Cool ○ Spring ○ Rainy ○ Summer 	<p>Observe and Compare</p> <p>-Describe and evaluate sand, soil, and rocks</p> <p>-Discuss how different bodies of water are alike and different</p> <p>Classify</p> <p>-Name different types of landforms</p> <p>-Tell where water can be found</p> <p>Observe and Infer</p> <p>-Determine the different ways in which water and air can be used</p> <p>Make a Hypothesis</p> <p>-Conclude that if we reduce, reuse, and recycle, then we are helping care for the Earth</p>

- Sunny
- Fall
- Windy
- Winter
- Snowy
- Storm
- Thunder
- Lightning