PUSD Science District Instructional Guide (Date Updated: 9/27/2019) Additional First Grade Links HERE					
Grade Level: First Grade Science DIG		Time: Quarter 1			
Unit Title: Life Science Animals		**Essential Questions:** **What does the life cycle of _____ look like?** **What does _____ need to live and survive** **How are _____ offspring different or similar from one another and from their parents?** **What would cause_____ animal go extinct? What is extinction?** **What characteristics cause _____ in _____ group?**			
		Phenomena: some suggested links to phenomena: **https://www.ngssphenomena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience.com** **https://www.teacherspayteachers.com** (does contain free downloads also) https://www.readworks.org			
Standards	**Learning Progressions**	**Objectives (I Can)**	**Key Vocabulary**	**Resources (Activities/Lessons/Experiments)**	**Assessments**
1.L.1U1.6 Observe,describe, and predict life cycles of animals and plants.	**Plants** and **animals** have predictable **characteristics** at different **stages of development.** Plants and animals **grow** and change. Adult	I can observe life cycles of animals and plants. I can describe life cycles of animals and plants.I can	plants animals characteristics stages of development grow young	**Arizona Science Standards** **https://jr.brainpop.com** ($)	Observations Participation

1.L2U2.7 Develop and use models about how living things use resources to grow and survive; design and evaluate habitats for organisms using earth materials. **1.L2U1.8** Construct an explanation describing how organisms obtain resources from the environment including materials that are used again by other organisms. **1.L3U1.9** Obtain, evaluate, and communicate information to support an evidence-based explanation that plants and animals produce offspring of the same kind, but offspring are generally not identical to each other or their	plants and animals can have **young.** Animals depend on their surroundings to get what they need, including **food, water, shelter,** and a **favorable temperature.** Animals depend on **plants** or other animals for food. They use their **senses** to find food and water, and they use their **body parts** to gather, catch, eat, and chew the food. Plants depend on **air,** water, **minerals** (in the soil), and **light** to grow. Animals can move around, but plants cannot and they often depend on animals for pollination or to move their **seeds** around. **Living** things produce **offspring** of the same kind, but offspring are not **identical** with each other or with their **parents**. Plants and animals, including humans, resemble their parents in many	predict life cycles of animals and plants. I can obtain information to support an evidence-based explanation that plants and animals produce offspring of the same kind. I can evaluate information to support an evidence-based explanation that plants and animals produce offspring of the same kind. I can communicate information to support an evidence-based explanation that plants and animals produce offspring of the same kind. I can create a model to describe how animals and plants are classified into groups with their similarities. I can ask questions how factors can cause species to go extinct.	living offspring Identical parents generation characteristics animals food water shelter favorable temperature plants senses body parts air minerals light seeds sketches drawings physical models compare test discuss strengths weaknesses	**https://www.ngssphenomena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience.com** **https://www.teacherspayteachers.com** (does contain free downloads also) **https://www.readworks.org** **https://thewonderofscience.com/phenomenal** **Printable and editable lessons:** **https://tbamoodle.tbaisd.org/course/view.php?id=161**	

Parents. **<u>1.L4U1.10</u>** Develop a model to describe how animals and plants are classified into groups and subgroups according to their similarities. **<u>1.L4U1.11</u>** Ask questions and explain how factors can cause species to go extinct.	features because information is passed from one **generation** to the next. Organisms have **characteristics** that can be similar or different. There are many different kinds of **plants** and **animals** in the world today and many kinds that once lived but are now **extinct.** We know about these from **fossils.** Animals and plants are **classified** into groups and subgroups according to their **similarities**. Some kinds of plants and animals that once lived on Earth (e.g., dinosaurs) are no longer found anywhere, although others now living (e.g., lizards) resemble them in some ways	I can explain how factors can cause species to go extinct.			

* Cross Cutting Concepts: **Cause and effect:** systems and system models; energy and matter; structure and function; **stability and change**
  - ❖ https://ngss.nsta.org/CrosscuttingConceptsFull.aspx

PUSD Science District Instructional Guide (Date Updated 9/27/2019)					
Grade Level: First Grade Science DIG		Time: Quarter 2			
Unit Title: Life Science: Plants		**Essential Questions:** **What does the life cycle of _____ look like?** **What does _____ need to live and survive** **How are _____ offspring different or similar from one another and from their parents?** **What would cause_____ plant to go extinct? What is extinction?**			
		Phenomena: some suggested links to phenomena: **https://www.ngssphenomena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience.com** **https://www.teacherspayteachers.com** (does contain free downloads also) **https://www.readworks.org**			
Standards	**Learning Progressions**	**Objectives (I Can)**	**Key Vocabulary**	**Resources (Activities/Lessons/Experiments)**	**Assessments**
1.L.1U1.6 Observe,describe, and predict life cycles of animals and plants.	**Plants** and **animals** have predictable **characteristics** at different **stages of development**. Plants and animals **grow**	I can observe life cycles of animals and plants. I can describe life cycles of animals	plants animals characteristics stages of development grow	**Arizona Science Standards** **https://jr.brainpop.com** ($)	Observations Participation

1.L2U2.7 Develop and use models about how living things use resources to grow and survive; design and evaluate habitats for organisms using earth materials. **1.L2U1.8** Construct an explanation describing how organisms obtain resources from the environment including materials that are used again by other organisms. **1.L3U1.9** Obtain, evaluate, and communicate information to support an evidence-based explanation that plants and animals produce offspring of the same kind, but offspring are generally not identical to each other or their Parents.	and change. Plants and animals can have **young** **Animals** depend on their surroundings to get what they need, including **food, water, shelter,** and a **favorable temperature.** Animals depend on **plants** or other animals for food. They use their senses to find food and water, and they use their **body parts** to gather, catch, eat, and chew the food. Plants depend on **air,** water, **minerals** (in the soil), and **light** to grow. Animals can move around, but plants cannot, and they often depend on animals for pollination or to move their **seeds** around. **Living** things produce **offspring** of the same kind, but offspring are not **identical** with each other or with their parents. Plants and animals, including humans, resemble their **parents** in many features because	and plants.I can predict life cycles of animals and plants. I can obtain information to support an evidence-based explanation that plants and animals produce offspring of the same kind. I can evaluate information to support an evidence-based explanation that plants and animals produce offspring of the same kind. I can communicate information to support an evidence-based explanation that plants & animals produce offspring of the same kind. I can create a model to describe how animals and plants are classified into groups with their similarities. I can ask questions	young living offspring Identical parents generation characteristics animals food water shelter favorable temperature plants senses body parts air minerals light seeds sketches drawings physical models compare test discuss strengths weaknesses	**https://www.ngssphenomena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience.com** **https://www.teacherspayteachers.com** (does contain free downloads also) **https://www.readworks.org** **https://thewonderofscience.com/phenomenal** **Printable and editable lessons:** **https://tbamoodle.tbaisd.org/course/view.php?id=161**	

1.L4U1.10 Develop a model to describe how animals and plants are classified into groups and subgroups according to their similarities. **1.L4U1.11** Ask questions and explain how factors can cause species to go extinct.	information is passed from one **generation** to the next. Plants also are very much, but not exactly, like their parents and resemble other plants of the same kind. There are many different kinds of **plants** and **animals** in the world today and many kinds that once lived but are now **extinct.** We know about these from **fossils**. Animals and plants are classified into groups and subgroups according to their **similarities**. Some kinds of plants and animals that once lived on Earth (e.g., dinosaurs) are no longer found anywhere, although others now living (e.g., lizards) resemble them in some ways.	how factors can cause species to go extinct. I can explain how factors can cause species to go extinct.			

* Cross Cutting Concepts: **Cause and effect**: systems and system models; energy and matter; structure and function; **stability and change**
  - ❖ **https://ngss.nsta.org/CrosscuttingConceptsFull.aspx**

PUSD Science District Instructional Guide (Date Updated: 9/27/2019)					
Grade Level: First Grade Science DIG		Time: Quarter 3			
Unit Title: **Earth Science &** **Physical Science: Light & Sound**		**Essential Questions:** **What are some natural resources we use everyday?** **How do we use these resources and why do we need them?** **How is light impacted by different materials?** **What causes shadows?** **What materials allow light to pass through?** **What materials block light?** **How do mirrors and prisms redirect light?** **How do we hear sounds?** **Why do vibrations make sound?** **What does the movement of sound look like?**			
		Phenomena: some suggested links to phenomena: **https://www.ngssphenomena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience.com** **https://www.teacherspayteachers.com** (does contain free downloads also) https://www.readworks.org			
Standards	**Learning Progressions**	**Objectives (I Can)**	**Key Vocabulary**	**Resources (Activities/Lessons/Experiments)**	**Assessments**

1.E1U1.5 Obtain, evaluate, and communicate information about the properties of Earth materials and investigate how humans use natural resources in everyday life. **1.P2U1.1** Plan and carry out investigations demonstrating the effect of placing objects made with different materials in the path of a beam of light and predict how objects with similar properties will affect the beam of light	Wind and water can change the shape of the land. The resulting **landforms**, together with the materials on the land, provide homes for l**iving things.** Humans use **natural resources** for everything they do: for example, they use **soil** and **water** to grow **food**, **wood** to burn to provide **heat** or to build **shelters**, and materials such as **iron** or **copper** (**minerals**) extracted from Earth to make cooking pans. Some materials allow **light** to pass through them, others allow only some light through, and others block all the light and create a dark **shadow** on any surface beyond them (i.e., on the other side from the light source), where the light cannot	I can obtain information about the properties of Earth materials and investigate how humans use natural resources in everyday life. I can evaluate information about the properties of Earth materials and investigate how humans use natural resources in everyday life. I can communicate information about the properties of Earth materials and investigate how humans use natural resources in everyday life. I can plan and carry out investigations demonstrating the effect of placing objects made with different materials in the path is a beam of light. I can predict how objects with similar	landforms living things natural resources soil Water food heat Shelters iron copper (minerals) light shadow mirrors prisms wavelike sound matter vibrate stability and change cause and effect forces push pull twist motion shape balance magnet design evaluate friction sketches drawings physical models compare test discuss strengths weaknesses	**Arizona Science Standards** **https://jr.brainpop.com** ($) **https://www.ngsspheno mena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience. com** **https://www.teacherspa yteachers.com** (does contain free downloads also) **https://www.readworks. org** **https://thewonderofscie nce.com/phenomenal**	Observations Participation

1.P2U1.2 Use models to provide evidence that vibrating matter creates sound and sound can make matter vibrate.	reach. **Mirrors** and **prisms** can be used to redirect a light beam. Light and sound are **wavelike** phenomena. **Sound** can make matter **vibrate**, and vibrating matter can make sound.	properties will affect the beam of light. I can use a model to provide evidence that vibrating matter creates sound. I can use a model to provide evidence that sound can make matter vibrate.		**Printable and editable lessons:** **https://tbamoodle.tbaisd.org/course/view.php?id=161**	
* Cross Cutting Concepts: **Cause and effec**t: systems and system models; energy and matter; **stability and change** ❖ https://ngss.nsta.org/CrosscuttingConceptsFull.aspx					

PUSD Science District Instructional Guide (Date Updated: 9/27/2019)					
Grade Level: First Grade Science DIG		Time: Quarter 4			
Unit Title: **Physical Science: Movement of Objects**		**Essential Questions:** **What are equal and unequal forces?** **How does force move objects? (Push, pull, twist…)** **How does force change a shape? (twist, compress…)** **How do we achieve a balance between objects?** **What is friction and what causes it?** **How can you reduce friction between two objects?** **How can you change an object's speed, direction or shape?**			
		Phenomena: some suggested links to phenomena: **https://www.ngssphenomena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience.com** **https://www.teacherspayteachers.com** (does contain free downloads also) https://www.readworks.org			
Standards	**Learning Progressions**	**Objectives (I Can)**	**Key Vocabulary**	**Resources (Activities/Lessons/Experiments)**	**Assessments**

1.P3U1.3 Plan and carry out investigations which demonstrate how equal forces can balance objects and how unequal forces can push, pull, or twist objects, making them change their speed, direction, or shape. **1.P4U2.4** Design and evaluate ways to increase or reduce heat from friction between two objects.	**Forces** can **push, pull** or **twist** objects, making them change their **motion** or **shape**. Forces act in particular directions. **Equal forces** acting in opposite directions in the same line cancel each other and are described as being in **balance**. The movement of objects is changed if the forces acting on them are not in balance. When two objects rub against each other, this interaction is called **friction**. Friction between two surfaces can warm both of them (e.g., rubbing hands together). There are ways to reduce the friction between two objects. Designs can be conveyed through **sketches, drawings,** or **physical models.** Because there is always more than one possible solution to a problem, it is useful to	I can plan and do an investigation that shows how equal forces can balance objects. I can plan and do an investigation that shows how unequal forces can push, pull or twist objects. I can plan and do an investigation that shows how unequal forces can change their speed, direction, or shape. I can design and evaluate ways to increase or reduce heat from friction between two objects.	light shadow mirrors prisms wavelike sound matter vibrate stability and change cause and effect forces Push Pull Twist motion shape balance magnet design evaluate friction sketches drawings physical models compare test discuss strengths weaknesses	**Arizona Science Standards** **https://jr.brainpop.com** ($) **https://www.ngssphenomena.com/** **https://betterlesson.com › browse › next_gen_science** **https://mysteryscience.com** **https://www.teacherspayteachers.com** (does contain free downloads also) **https://www.readworks.org** **https://thewonderofscie**	Observations Participation

	compare designs, **test** them, and **discuss** their **strengths** and **weaknesses**.			**nce.com/phenomenal** **Printable and editable lessons: https://tbamoodle.tbaisd.org/course/view.php?id=161**	
* Cross Cutting Concepts: Crosscutting Concepts: **cause and effec**t; systems and system models; energy and matter; **stability and change**. ❖ https://ngss.nsta.org/CrosscuttingConceptsFull.aspx					