| **Grade:** Kindergarten<br>**Subject:** Science | **Unit of Study: Life Cycles** |
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| **Big Idea/Rationale** | Children are keenly aware of the fact that they are in the midst of the process of growing towards adulthood. They know that that process will continue over the years as they move through life, that different stages of life are characterized by different characteristics, and that one day in the future they may themselves become parents of children who will begin this cycle all over again. In what way is this cycle replicated in other living organisms? How are all living things the same? In what ways are they different? In studying similarities and differences between plants, animals and insects, students will gain important insights regarding the characgteristics of all living things, and the ways life has adapted on Earth to meet different challenges and environments. These core concepts are ones they will return to again and again in their study of living things throughout elementary school and evein into the formal study of biology in high school. |
| **Enduring Understanding (Mastery Objective)** | • Physical similarities and differences exist in animals of a given species.<br>• Physical attributes can be classified based on similarities and differences.<br>• Myself and Others<br>  o Physical similarities and differences exist in all humans.<br>  o Individuals develop unique identities which are determined by physical characteristics, talents and abilities, likes and dislikes, and feelings and attitudes.<br>  o Individuals are members of a family with special relationships.<br>• Seeds and Plants<br>  o Many plants originate from seeds.<br>  o A parent plant produces seeds that are unique to that plant.<br>• Caterpillars and Butterflies<br>  o The life cycle of a butterfly goes through specific stages.<br>• Farm Animals<br>  o There is a cycle of life that exists on a farm.<br>• Bears<br>  o Bears are living animals that have basic needs.<br>  o Some bears hibernate in the winter.<br>  o Bears have unique habitats.<br>• Birds<br>  o Birds are living things that that have common characteristics and habitats.<br>  o Birds migrate in the fall and return in spring.<br>• Insects<br>  o Insects are living things.<br>  o Insects have common characteristics.<br>• Dinosaurs<br>  o Dinosaurs are prehistoric animals. |

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| | ○ Dinosaurs are now extinct.<br>○ Fossils provide evidence on the nature of ancient life. |
| **Essential Questions (Instructional Objective)** | • What common characteristics to humans share?<br>○ How are individuals unique?<br>○ How are we alike and different?<br>○ How are families alike and different?<br>○ How do people change?<br>• What is a seed<br>○ How do seeds differ?<br>○ Where are seeds found?<br>○ What is the life cycle of a seed?<br>○ How does a seed travel?<br>○ What does a plant need to grow?<br>○ How do plants grow and change?<br>• What kinds of animals live on a farm?<br>○ What are the names of the baby farm animals?<br>○ How do farm animals parent?<br>○ What kinds of food and shelter exist on a farm for the animals?<br>○ What do the people living on a farm do?<br>• Where do bears live?<br>○ What do bears eat?<br>○ What is hibernation?<br>○ How are bears the same/different from other animals?<br>• What is migration?<br>○ How is a bird different from other animals?<br>• How is an insect different from other living things?<br>○ What common characteristics do insects have?<br>○ What are the names of some common insects?<br>• What are dinosaurs?<br>○ Can you describe the life cycle of the dinosaurs?<br>○ What happened to dinosaurs?<br>○ What is a fossil?<br>○ What evidence of dinosaur life does a fossil provide?<br>○ How are some dinosaurs the same/different? |
| **Content (Subject Matter)** | **Myself and Others**<br>• Students will be able to:<br>○ Observe and describe how they are similar to and different from others<br>○ Describe their unique identities, talents and abilities, likes and dislikes feeling and attitudes through written and oral communication.<br>○ Compare and contrast their families.<br>• Describe their families through written and oral communication. |

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| | • Using a mirror students will observe and compare/contrast physical attributes<br>• Students will make a paper plate portrait of their face, selecting correct eye, face and hair color<br>• Students will "be interviewed" about their favorite things for a class book.<br>• Students will read and discuss:<br>  o All About You<br>  o Things I Like<br>  o I Like Me!<br>  o We Are All Alike, We Are All Different<br>  o I Looked in the Mirror<br>• Using paper plates, paint and various other materials, students will create their own family tree<br>• Students will learn the poem "Some Families"<br>• Farm Animals<br>• Students will be able to:<br>  o Explore the life cycle on a farm.<br><br>**Bears**<br>• Students will be able to:<br>  o Identify a polar bear and a brown bear.<br>  o Compare and contrast the life of a polar bear and brown bear.<br>  o Discuss how hibernation affects the habits of animals.<br>• Read and discuss non-fiction:<br>  o Sleepy Bear<br>  o Bear Facts<br>• Students will recite and act out "We're Going on A Bear Hunt"<br>• Students will make paper bag bears and put them in a place to "sleep" in the classroom for the winter.<br>• After reading several noon-fiction book together, students will be able to brainstorm , write and illustrate a bear fact.<br>• Read fiction Little Polar Bear<br>• Read non-fiction Arctic Animals<br><br>**Birds**<br>• Students will be able to:<br>  o Identify a bird as a living thing and describe its unique characteristics.<br>• Read Birds, Birds Everywhere<br>• Read and discuss poem "If I Were A Bird"<br>• Trace, cut bird shapes and make a nest<br>• Using food coloring and/or paint make a butterfly with symmetrical wings |

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| | • Read and discuss non-fictions books<br><br>**Seeds and Plants**<br>• Students will be able to:<br>  o Articulate the life cycle of pants/seeds<br>  o Match selected seeds with parent plants (pumpkin, apple, sunflower, carrot)<br>  o Show that plants grow in predictable observable ways<br>  o Explain the basic needs of plants.<br><br>**Fall**<br>• Students will sort apples according to color/and or size<br>• Students will create a mural that changes through the stages of growth of a pumpkin<br>• Students will be able to sequence pictures that<br>• Students will count the number of seeds taken from an apple and create a class graph<br>• Students will sort apples according to color/and or size<br>• Students will create a mural that changes through the stages of growth of a pumpkin<br>• Students will be able to sequence pictures that describe the life cycle of a pumpkin<br>• Read and discuss following non-fiction:<br>  o Pumpkin, Pumpkin<br>  o Growing Pumpkins<br>  o Apples and Pumpkins<br>  o How Pumpkins Grow<br>• Read non-fiction Johnny Appleseed-discuss legend<br>• Read and discuss Scholastic Newspapers “Let’s Find Out”<br><br>**Spring**<br>• Students will send in seeds from home on index<br>• Plant seeds and grow in the classroom.<br>• Keep a log of observations and changes<br>• Make “Hairy Cups”- by planting grass seed in a cup with a face on it<br>• Complete worksheet, labeling the parts of a flower<br>• Sequence pictures describing life cycle of a plant<br>• Read and discuss:<br>  o The Carrot Seed, I’m A Seed, Seeds Get Around, Seeds, Seeds, Seeds<br>• Students will be able to name and match pictures of adult farm animals with their babies.<br>• Take a trip to the farm and observe and learn about animals in their natural habitats |

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| | • Read and discuss The Farm Concert-Match animals with the sounds they make<br>• Read and discuss Who Will Be My Mother?-<br>• Students will act out animal parts using props<br>• Read and act out Mrs. Wishy Washy and Wishy Washy Day<br>• Sequence steps showing crops to market<br>• Sort/classify farm animals, food, vehicles<br><br>**Caterpillars and Butterflies**<br>• Students will be able to:<br>  o Observe, record, draw, and sequence the life cycle of a butterfly<br>  o Students will observe and record observations<br>  o of life cycle of butterfly on display in their class<br>• Read and discuss The Very Hungry Caterpillar-<br>• Color and cut props from the story for retelling<br>• Read and discuss non-fiction:<br>  o I'm a Caterpillar<br>  o Caterpillar Diary<br>  o A Butterfly Grows<br>• Complete sequencing worksheet on the life cycle of a butterfly<br>• Paint a caterpillar in the style of Eric Carle<br>• Paint a symmetrical butterfly<br><br>**Insects**<br>• Students will be able to:<br>  o Identify an insect and its body parts.<br>  o Name some common insects (bee, fly, cricket, spider)\<br>• Read and Discuss The Itsy Bitsy Spider<br>• Make a spider with eight legs<br><br>**Spring**<br>• Make a bee using yellow and black paper<br>• Learn and act out "Here is the Beehive Where are the Bees?"<br>• Non-fiction big book<br>• Read and discuss TheVery Quiet Cricket<br>• Read and discuss The Grouchy Ladybug<br>• Trace pattern and cut to make a paper ladybug<br>• Complete mini-book on insects<br><br>**Dinosaurs**<br>• Students will be able to:<br>  o Explore the history of dinosaurs based on the exposure to various non-fiction texts.<br>• Complete dinosaur activity book |

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| | • Discuss color and skin of dinosaurs – sponge paint dinosaur shape<br>• Dig in sand to find objects – like fossil digging<br>• Make a triceratops puppet<br>• Match dinosaur shapes with outline of dinosaur<br>• On a worksheet glue din bones into a dino shape<br>• Watercolor pictures of different dinosaurs and glue to create a prehistoric scene<br>• Display dinosaur pictures and models for discussion (dinosaur museum)<br>• Read and discuss the following:<br>• The World of Dinosaurs<br>• Digging for Dinosaurs<br>• Dig a Dinosaur<br>• Giant Dinosaurs<br>• The Lost Dinosaur |
| **Skills/ Benchmarks (CCSS Standards)** | • 5.1.P.A.1 Display curiosity about science objects, materials, activities, and longer-term investigations in progress.<br>• 5.1.P.B.1 Observe, question, predict, and investigate materials, objects, and phenomena (e.g., using simple tools to crack a nut and look inside) during indoor and outdoor classroom activities and during any longer-term investigations.<br>• 5.1.P.C.1 Communicate with other children and adults to share observations, pursue questions, and make predictions and/or conclusions.<br>• 5.1.P.D.1 Represent observations and work through drawing, recording data, and "writing."<br>• 5.3.P.A.1 Investigate and compare the basic physical characteristics of plants, humans, and other animals.<br>• 5.3.P.A.2 Observe similarities and differences in the needs of various living things, and differences between living and nonliving things.<br>• 5.3.2.A.1 Group living and nonliving things according to the characteristics that they share.<br>• 5.3.P.B.1 Observe and describe how plants and animals obtain food from their environment, such as by observing the interactions between organisms in a natural habitat.<br>• 5.3.2.B.1 Describe the requirements for the care of plants and animals related to meeting their energy needs.<br>• 5.3.2.B.2 Compare how different animals obtain food and water.<br>• 5.3.2.B.3 Explain that most plants get water from soil through their roots and gather light through their leaves. |
| **Materials and Resources** | • http://www.bbc.co.uk/schools/scienceclips/ages/5_6/growing_plants.shtml<br>• http://teacherdomain.org/K-2/sci/life/colt/germinator/index.html<br>• http://www.teacherdomain.org/K-2/sci/life/colt/plantsgrow/index.html |

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| | • http://www.kidzone.ws/plants/index.htm<br>• http://www.enchantedlearning.com/Home.html<br>• Schoenly School Library Resource:<br>  ○ Watch it Grow by Craig Hammersmith (Code: 571.8 Ham)<br>  ○ Plant Cycle by Ray James (Code: 580 Jam)<br>  ○ Seeds by Vijaya Khisty Bodach (Code: 575.6 Bod)<br>  ○ My Apple by Kay Davies and Wendy Oldfield (Code: 634 Dav)<br>  ○ Pumpkin Circle: The Story of a Garden by George Levenson (Code: 635 Lev)<br>  ○ Orchard by Elizabeth Sirimarco (Code: 634 Sir)<br>  ○ How Plants Grow by Claire Llewellyn (Code: 571.8 Lle)<br>  ○ Farm Animals by Price/Stern/Sloan (Code: 636 Far)<br>  ○ In the Garden by David M. Schwartz (Code: 577.5 Sch)<br>  ○ Caterpillars by Sarah Chappelow (Code: 595.78 Cha)<br>  ○ Waiting for Wings by Lois Ehlert (Code: 595.78 Ehl)<br>  ○ Prehistoric Actual Size by Steve Jenkins (Code: E560 Jen) |
| **Notes** | |