Timeline ->	*Quarter Two (lessons)*
Guiding Questions	### Science: What are the characteristics/attributes of living, nonliving, plants & animals? How can we use technology to illustrate what we are learning about plants and animals? How can we describe the similarities and differences between plants and animals? How can we describe how offspring are the same as their parents? Different than their parents? ### Language Arts: How can we use new science terms to describe the characteristics of living/non-living, plants and animals How can we use non-fiction text to build our vocabulary word wall? How can we use our science notebook to write about our observations, our learning, our class data and new vocabulary? How can we use new science terms to describe growth in animals and plants? ### Math: How can Venn diagrams help sort items that are the same or different? How is a bar graph drawn to show totals with collected data? What conclusions can we draw from the data portrayed by the graph? How can we use different measuring tools to collect data? ### Art: How can we draw/illustrate and label sketches for a science notebook? How can we create 3-D models that show what we have learned about plants? How can we use drama and movement to demonstrate our understanding of plants and animals?
General Learner Outcomes	### GLO#1: Self-Directed Learner: Students will follow directions to complete the class and homework tasks. ### GLO#2: Community Contributor: Students will share their math, science and literacy products with other members of their class or another classroom. ### GLO#3: Complex Thinker: Students will use their problem solving, math and writing skills to investigate the similarities and differences between plants, animals, parents and offspring.

	### *GLO#4: Quality Producer:* Students will create several products (poster/model/graphs/data tables) that illustrate their understanding about plants and animal characteristics, needs and patterns of growth. ### *GLO#5: Effective Communicator:* Students will listen, discuss and record information from their different lessons through oral, written and math pieces that illustrate concepts they have learned. Students will orally share their products with other students. ### *GLO#6: Effective and Ethical User of Technology:* Students will utilize technology to record observations, categorize items, and supplement their constructed response questions.
Assessments	Formative and summative textbook assessments. Constructed response (math, language arts, science) 1. Draw at least one plant and at least one animal – 2. Using your Venn diagram and vocabulary charts, give at least one example of how plants and animals are the same and at least one example of how they are different. KidPix – animal plant paper to be used to then write to the above prompt A summative product rubric will be used to assess the final science WHEAT GRASS BOOK that each student produces. The rubric criteria will include assessment of the presentation of concepts learned, as well as the written and drawn presentation quality. Oral communication of final project

Content Area: Science   Grade: K   Quarter: 2

Big Idea(s) / Major Understanding(s): *Students will understand that...*
Living and non-living things have specific attributes.

There are differences between living and non-living things.

Plants and animals have similarities and differences.

Offspring are both similar and different from their parents.

HCPS III Benchmarks:

◊ *K.1.1*   **Scientific Inquiry**
Use the senses to make observations

◊ *K.1.2*   **Scientific Inquiry**
Ask questions about the world around them

◊ *K.2.1*   **Science, Technology, and Society**
Identify different types of technologies at home, in the classroom, and/or in the world

· K.3.1   **Interdependence**
Identify similarities and differences between plants and animals

· K.5.1   **Heredity**
Identify ways in which some offspring are very much like their parents, although not exactly

◊ *K.6.1*   **Nature of Matter**
Classify objects by their attributes (e.g., physical properties, materials of which they are made)

Sample Performance Rubrics

Strand	The Scientific Process

Standard 1: The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent and investigate using the skills necessary to engage in the scientific process

Topic	Scientific Inquiry
Benchmark SC.K.1.1	Use the senses to make observations
Sample Performance Assessment (SPA)	The student: Uses the five senses (i.e., sight, smell, hearing, touch, and taste) to make observations about objects and events.
Rubric	

Advanced	Proficient	Partially Proficient	Novice
Use appropriate senses to make detailed observations on what is actually observed	Use appropriate senses to make observations on what is actually observed	Use the senses to make limited observations on what is observed	Use the senses to make observations that are inaccurate or inferred

3/6/12 Revised

Topic	Scientific Inquiry
Benchmark SC.K.1.2	Ask questions about the world around them
Sample Performance Assessment (SPA)	The student: Asks questions about objects, organisms, events, places, or relationships in the environment.
Rubric	

Advanced	Proficient	Partially Proficient	Novice
Consistently ask relevant questions about the world around them	Usually ask relevant questions about the world around them	Sometimes ask questions, with assistance, about the world around them	Rarely ask questions, even with assistance, about the world around them

Topic	Science, Technology, and Society
Benchmark SC.K.2.1	Identify different types of technologies at home, in the classroom, and/or in the world
Sample Performance Assessment (SPA)	The student: Identifies examples of technologies that exist at home, in the classroom, and/or in the world (e.g., knife, pencil, computer, pencil sharpener, refrigerator).
Rubric	

Advanced	Proficient	Partially Proficient	Novice
Identify and explain examples of technology at home, in the classroom, and/or in the world	Identify different types of technologies at home, in the classroom, and/or in the world	Provide limited examples of technologies at home, in the classroom, and/or in the world	Recognize, with assistance, examples of technologies at home or in the classroom

Strand	Life and Environmental Sciences
Standard 3: Life and Environmental Sciences: ORGANISMS AND THE ENVIRONMENT: Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment	
Topic	Interdependence
Benchmark SC.K.3.1	Identify similarities and differences between plants and animals
Sample Performance Assessment (SPA)	The student: Identifies ways that plants and animals are similar and different and records observations as a group.
Rubric	

Advanced	Proficient	Partially Proficient	Novice
Describe detailed similarities and differences between plants and animals	Identify similarities and differences between plants and animals	Recognize a few similarities and differences between plants and animals	Recognize, with assistance, some obvious similarities and differences between plants and animals

Topic	Heredity
Benchmark SC.K.5.1	Identify ways in which some offspring are very much like their parents, although not exactly
Sample Performance Assessment (SPA)	The student: Names ways in which parents and their offspring are similar, although not exactly (e.g., body features, color).
Rubric	

Advanced	Proficient	Partially Proficient	Novice
Describe, in detail, how some offspring are very much like and different from their parents	Identify ways some offspring are very much like their parents, although not exactly	Identify obvious ways some offspring are very much like their parents	Recall that some offspring are very much like their parents

3/6/12 Revised

Topic	Nature of Matter
Benchmark SC.K.6.1	Classify objects by their attributes (e.g., physical properties, materials of which they are made)
Sample Performance Assessment (SPA)	The student: Sorts objects by the materials of which they are made (e.g., wood, cloth, metal, plastic, paper) and their physical properties (e.g., size, color, shape, weight).
Rubric	

Advanced	Proficient	Partially Proficient	Novice
Identify the attributes by which a collection of objects can be classified, then classify the objects accordingly	Classify objects by their attributes	With minimal assistance, classify objects by their attributes	With much assistance, classify objects by a few attributes

Lessons Summary - *Living & Nonliving*

Lesson Title	What students will be able to know, do & understand
Pre-test	Pre/Post assessment – **Science/Literacy Constructed Response:** (students could refer to both the notebook and word wall chart) 8 points • Draw at least one example of a living and nonliving thing. 1 point for each • Label each example - 1 point for each • Tell what living things need that are different from nonliving things – write at least two or more details for each. • Homework – "SCIENCE" color pictures which says "pre/post" Living/Non-Living color coding (Activity book coloring sheet –optional)

Lesson One:	• KWL – what do they know, examples, brainstorm and create "wonderings" (questions) **Wonder & Discover Book** – encourage students to ask questions (can use as a formative about student's questioning skills during the semester/year). Could use a composition notebook with tabs for each student. Teacher keeps student questions through the year. • Ask students to bring examples of living and non-living items from home. • Read the following books: • Big book – Living & Nonliving - Judith Halloway • Harcourt Big book – p. 70 • What's Alive by Kathleen Zoenfeld • **Math Block:** specific shape vocabulary (circles, squares, triangles)
Lesson Two:	• Create the chart (T-chart) that defines Living/Non-living attributes. **<u>Need to remember to add in the "once living" attribute into the living things.</u>** Create word wall definition of living and nonliving, • Then, teacher models with student examples of living and nonliving items

	(note home to parents to allow child to share either a non or living item)
	• Sing a song: "Am I Living?" (sung to "Am I sleeping?")
Lesson Three:	• Students bring in items to share.
	• Sort items using grouping circles.
	• Sing a song: "Am I Living?" (sung to "Am I sleeping?")
Lesson Four:	• Living or Non-living lesson (sorting lesson with cards) and/OR
	• Schoolyard Survey (collecting data outside and then returning inside to sort the data into living/non-living categories). Students can tally the number of items that were observed as a class and record results. Teacher models tallying.
AIMS Learning Center	Putting Pictures in Place –
	Use the prepared flip chart OR just put Living /Non-living on a master game chart. Give the students 4-5 post-it-notes where they can place their own pictures to sort with their neighbors.
Optional Lesson Part One - Math	Science/Math: (circle, triangle, square, rectangle)
	Outside Observing:
	• Take a walk outside in groups
	• Each group has a digital camera
	• Gather information related to (circle, triangle, square, rectangle) using different shape for each day.
	• Every child takes one picture of the shape of the day following a designated order.
Optional Lesson Part Two: Math	• Inside classroom (prep in advance with t-chart and names)
	• T downloading pictures, students wrote in their science notebook "Today I found a _____ that was a circle shape". Students copied and drew the item.
	• Teacher calls up each individual student, the student id's their picture, teacher assess about living/nonliving (student told teacher where to put the picture in a t-chart and explain why it goes there – teacher writes exactly what the student stated)
	• Class discussion – go over the t-chart, justify choices and bring out the scientific vocabulary
	• Repeated for each shape on different days.
Optional Lesson Technology	• Another option would be a website that has students sort living and non-living
	www.firstschoolyears.com/science/resources/games/ourselves/living/living.htm
	www.usoe.k12.ut.us/curr/science/sciberoo/7th/classify/living/quiz/livingqu.htm
	• Use KidPix "stamps" to sort living and nonliving – label

	• Use "Big Book" to develop vocabulary (Life Science –Chapter 7, Lesson 1)
	• Perhaps consider using "Concept Review" and "Inquiry Skill" possible worksheets
Post Test	**Science/Literacy Constructed Response:** (students could refer to both the notebook and word wall chart)
	• Draw at least one example of a living and nonliving thing.
	• Tell what living things need that are different from nonliving things – write at least two or more details for each.

HARCOURT TEXT – Life Science – Plants (Chap. 8, Lessons 1-3), Animals (Chap.7, Lessons 2-4)

Lesson Day #	Lesson Title	What students will be able to know, do & understand
		Plants
	Pre/post Assessment	**Pre/Post assessment** – Science/Literacy Constructed Response: (students could refer to both the notebook and word wall chart) 6 points Draw at least one example of a plant and animal. 1 pt for each Label each example - 1 point for each Give one example of how plants and animals are the same – 1 pt Give one example of how plants and animals are different – 1 pt Homework – "SCIENCE" color pictures which says "pre/post" Plant & Animal? color coding (Activity book coloring sheet –opt.)
Lesson 1		Build class Venn diagram/charts to compare/contrast plants and animals based on the characteristics of living things – using AIMS grouping circles Show "Magic Schoolbus Gets Planted" to give an overview of the parts of a plant and how they grow – could add to Venn throughout the videoclip or discuss
Harcourt Text Optional	What are plants like?	Inquiry Skills "Draw Conclusions" (AB77) Big Book (pp. 82-84) – Word wall vocabulary Concept Review "Kinds of Plants" (AB78) Build concept of compare and contrast.
Harcourt Text Optional	What do plants need?	Harcourt Big Book (p.85-86) – word wall vocabulary REINFORCE CLASS VENN DIAGRAM Concept Review "What Plants Need" (AB80)
OPTIONAL	Learning Center	Drama "The Busy Gardner" Children act out how people help plants meet their needs. Harcourt (TG p. 274)
Harcourt Text	How do plants grow?	Inquiry "Observe" (AB81) Harcourt Big Book (pp. 87-89) – word wall and vocabulary

Optional		Use worksheet - Plants Grow and Change
Lesson 4	Wheat Grass (Diane and Veronica will send via email)	Plant wheat grass in milk cartons. Students put potting soil in carton. Record growth every day or two at the most. Start an observation book. See Power Point showing how to record wheat grass growth on graph. Note: wheat grass grows quickly, once planted plan to do observation within a one to two period.
Math	What's in Your Yard?	Connect the "inchworm" to the tallest wheat grass measurement from the prior work.
Animals		
Harcourt Text Lesson 1 Optional	What are animals like?	Continue adding animal characteristics to Venn Diagram/charts. Animal characteristics – feathers, fur, scales, skin Big Book – Physical Features Some animals have fur or skin and some have feathers or scales "Investigate picture cards" (p.232): sort physical features. "Compare" Inquiry Skills Practice (AB69) and on the back "Observe" Inquiry Skills Practice (AB71)
Lesson 2	Technology	TECH – use KidPix stamps to sort plants and animals.
OPTIONAL		Art – use clay/playdough/Sculpy to make an "animal" and then sort and graph class animals. Drama - children act out animals and how they move (TG p. 239)
Optional	Math	Have students share what "pets" animals they have at home. Sort as a class and chart (bar graph). Connected directly to math – "tally" and then "graph" (students saw difference between chart and graph
Harcourt Text Lesson 3	What do ANIMALS need?	Inquiry Skills Practice (AB 71) – model 3 examples and then have students do one of their own Add animal needs to class VENN DIAGRAM /charts vocab/word wall/notebook "What Do Animals Need" Concept Review (AB72)
Optional Social Studies Link	How humans fulfill basic needs.	Read Red Racer by A. Woods, discuss needs and wants of people. "Wants and Needs" video that you can borrow from Veronica
OPTIONAL	Learning Center PE Connection	Animal Match up (TG p. 247) Animal cut out – put on a popsicle stick – have students move into groups "animals that have 4 legs" animals that have no legs" Song – CD "Animal Action" (Lynne and Diane will share) PE song move like Elephant, monkey, cat "I like Elephants" Eric Herman

OPTIONAL	Math/Science Center Activity	Students use rice table - cup…..problem solving for dog needs for feed Enrichment $/more sophisticated measuring tools
OPTIONAL	Learning Center	USE THE INSECT NETS TO COLLECT INSECTS AND SORT OR OBSERVE Build a worm bin to show animal needs.
Post – assessment: Constructed response on "differences" between plants and animals (same as pre)		
Heredity		
Optional	Technology	Use KidPix stamps to make adult (big stamp) and offspring (small stamp).
		Animal Babies (Teacher Created Resources)
AIMS	Who's My Mom?	HERIDITY – how are offspring like their parents?
Optional	Spot the Difference	What picture of the plant or animal is different than the other two? How is it different?
Post	Assessment	Read "Are you my Mother?" P.D. Eastman Draw a parent and it's offspring and name at least two ways that they are alike.
Optional	Look at Me Now!	Homework in preparation for the lesson on how animals change an grow (in prep for mother's day….) Students make their sunflower template – take digital picture of student now and color copy of baby picture. Use stem as perhaps more than the measurement – time line…paper plate sunflower with seeds

Word Wall – Science words

Inquiry Standard: classify, compare/contrast
Life Science: animal, parent, offspring, plant (root, stem, leaf, branch/tree, flower)
Technology: tool, equipment, scientist (farmer, botanist, zoologist, zoo keeper, etc.)
Math: tally, data, graph, data table, VENN diagram, physical attributes

Notes:
Planting & observations build the background experiences for the students to support the plants & animals similarities & differences.
Wheat grass daily observations and booklet: Measurements were made daily with wool and "graphed". Entire process was put together by the students as their "WHEAT GRASS BOOK".
Did T-chart to reinforce living/non-living and then build definitions of animal/plant characteristics and needs on a VENN diagram.
(AIMS – A Plant Begins) Did the animal lessons in tandem with the plants due to growing and observing over time. More of a daily vision that were connected to both plants and animals.