

Course Title: STEAM Second Grade

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Grade	Big Idea	Essential Questions	Concepts	Proposed Labs	Competencies	Vocabulary	NGSS Standards	SAS Standards	Assessment Anchor Eligible Content	Resources
2	Energy	How is energy transferred and conserved? How are waves used to transfer energy and information?	Each force acts on one particular object and has both strength and a direction. (PS2.A) Patterns of an object's motion in various situations can be observed and measured. (PS2.A) Objects in contact exert forces on each other. (PS2.B)	Circuit building Light Experiments Sound Experiments Goal driven student designed marble run. Launching Mechanism	Investigate the variables that may affect how objects move across a floor, down a ramp, etc. (3-PS2-1) Take measurements of objects in motion and represent the movement of objects in multiple representations. (3-PS2-1) Design and implement an investigation to demonstrate that objects in contact exert	Force Speed Friction Direction Prediction		3.2.3.B1 3.2.3.B2 3.2.4.B1 3.2.4.B2 3.2.3.B6	S4.C.3.1 S4.A.1.3 S4A.4. S4A.1.3.1 S4.C.3.1.3	Snap Circuit Kits Balls Recycled materials Craft supplies Card Stock Small Boxes Flashlights Paper Cups Batteries Rubber bands

					forces on each other. (3-PS2-1)					
2	Nutrient Cycle	How can there be so many similarities among organisms yet so many different kinds of plants, animals, and microorganisms?	There are many different kinds of living things in any area, and they exist in different places on land and in water. (LS4.D) Populations live in a variety of habitats and changes in those habitats impacts the organisms living there. (LS4.D)	Fresh/Dried Food exploration Create a Food Chain Interactive notebook Into the Forest Card Game	Observe and compare the different kinds of living things that are found in different habitats. (2-LS4-1)	Exist Habitats Land Living things Water		3.1.4.A 3.1.4.C 4.5.4.D 4.2.4.C	S4.B.2.1.1 S4.B.2.1.2	Videos re: food chain Assorted fresh/dried food items My Plate.gov PowerPoint In the Forest Card Game
2	Coding	How is the movement of the object affected by the code?	Changing the code changes attributes.	Code.org introduction	Navigate to the appropriate webpage.	Code Website Direction Right Left Up Down Arrow keys Repeat End Run Window		1B.AP.10 Create programs that include sequences, events, loops, and conditionals.		Code.org website Smartboard/computers/iPad

						Program				
2	Pollution	How do Earth's processes and human activities affect each other?	All materials, energy, and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways	Use of recycled materials to create an environmentally friendly invention.	Investigate what resources are used in the construction of buildings, preparation of food, transportation, and other aspects of the community	Energy Materials Resources Transportation Pollution Recycling		3.3.4.A2	S4.A.1.1 S4.A.1.3 S4.A.2.1 S4.A.2.2 S4.A.3.1 S4.A.3.2 S4.A.3.3	Popular Mechanics for Kids video – Garbage Magic School Bus Holiday Video Recycled Materials
2	Solar System Concepts	What is the universe, and what is Earth's place in it? How and why is Earth constantly changing?	Illustrate and discuss how the suns position changes during the day. Identify that the Earth rotates over a 24 hour period.	Introduction to the basic structure of our Solar System.	Chart how the moon changes over the course of a month (e.g. new, waxing and waning crescent, full) Identify summer as having more hours of sunlight and winter with less hours of sunlight.	Sun Moon Full New Crescent Waxing Waning Rotate Moon Planet		3.3.4.A1	S4.A.1.1 S4.A.1.3 S4.A.2.1 S4.A.2.2 S4.A.3.1 S4.A.3.2 S4.A.3.3	Craft Supplies Paper Plates
2	Life Cycle	How and why do organisms interact with their environment and what are the effects of	Different plants survive better in different settings because they have	Outdoor Investigations Miniature Greenhouse Design and Use	Construct an explanation about why living things can only survive where their needs are met.	Needs Organism Survive		3.1.4.A.2 3.1.4.B.5 3.1.4.C.1 4.1.4.A 4.5.4.D 4.2.4.C	S4.B.2.1.1 S4.B.2.1.2 S4.B.2.1.2	Recycled Materials Seeds Soil Water Outdoor access Magnifying Glasses

		these interactions?	varied needs for water, minerals, and sunlight Plants depend on water and light to grow. Living things can survive only where their needs are met. (LS4.D)					3.1.4.A 3.1.4.C 4.5.4.D 4.2.4C		Available Technology as applicable
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