



***The Zula Patrol Launch Pad for Learning activity kit and Simple Machines Curriculum
Alignment with NYC Science Scope & Sequence Grades K-4***

LPFL = Launch Pad for Learning Sampler activity kit (with 15 level 1-PreK and 15 level 2-K-2 sun, clouds, moon, stars, sensory discovery activities)

SM = Simple Machines Exploration Mission curriculum (with 3 lesson plans focusing on wheel/axle/screw, lever and pulley, and wedge and inclined plane)

All = All Zula activities and lesson plans

FK = Future Mission Exploration Mission (curriculum programs)

Alignment with Inquiry Skills

- Science process skills in Zula curriculum is based on a series of discoveries. (All)
- Students have a central role in the discovery process in Zula curriculum. (All)
- Zula curriculum incorporates a student-centered, problem-solving approach to science. (All)
- Inquiry and process skills are an integral part of every Zula Exploration Mission curriculum program. (All)
- Using Zula curriculum and activities, children apply the above skills to investigate important issues in the world around them. (All)
- Process skills are incorporated into all Zula instruction as developmentally appropriate—and this applies not only to children, but also to the guides crafted for teachers (which are embedded with description for teachers on how to conduct inquiry based lessons, exploration, and discussion. (All)
- The following inquiry skills are included in Zula curriculum programs:
 - Classifying (SM, LPFL, FK)
 - Communicating (All)
 - Comparing and Contrasting (SM, LPF, FK)
 - Creating Models (LPFL, FK)
 - Gathering and Organizing Data (LPFL, FK)
 - Generalizing (SM, LPFL, FK)
 - Identifying Variables (SM, LPFL, FK)
 - Inferring (LPFL, FK)
 - Interpreting Data (SM, LPFL, FK)
 - Making Decisions (All)
 - Manipulating Materials (SM, LPFL, FK)
 - Measuring (SM, LPFL, FK)
 - Observing (All)
 - Predicting (SM, LPFL, FK)

Alignment with Process Skills

General Skills

- ii. Safely and accurately use the following tools: ruler, balance, spring scale, etc. (SM, FK)
- iii. Develop an appreciation of and respect for all learning environments. (All)
- iv. Manipulate materials through teacher direction and free discovery. (All)
- vi. Select appropriate standard and nonstandard measurement tools for measurement activities. (SM, FK)
- vii. Estimate, find, and communicate measurements, using standard and nonstandard units. (SM, FK)
- viii. Use and record appropriate units for measured or calculated values (SM, FK)
- ix. Order and sequence objects and/or events. (SM, LPFL, FK)
- x. Classify objects according to an established scheme. (SM, LPFL, FK)
- xi. Generate a scheme for classification. (SM, LPFL, FK)
- [There is no xii. Listed in process skills draft.]
- xiii. Observe, analyze, and report observations of objects and events. (SM, LPFL, FK)
- xiv. Observe, identify, and communicate patterns. (SM, LPFL, FK)
- xv. Observe, identify, and communicate cause-and-effect relationships. (SM, LPFL, FK)
- xvi. Generate appropriate questions in response to observations, events, and other experiences. (All)
- xvii. Observe, collect, organize, and appropriately *graph* data, then accurately interpret results. (LPFL, FK)
- xviii. Collect and organize data, choosing the appropriate representation: journal entries, drawings/pictorial representations. (All)
- xix. Make predictions based on prior experiences and/or information. (SM, LPFL, FK)
- xx. Compare and contrast organisms/objects/events in physical environments. (SM, LPFL, FK)
- xxi. Identify and control variables/factors. (SM, LPFL, FK)
- xxii. Plan, design, and implement a short-term and long-term investigation based on a student or teacher posed problem. (SM, LPFL, FK)
- xxiii. Communicate procedures and conclusions through oral and written (and drawn) presentations. (All)

Alignment with Kindergarten

Unit One—Trees through the Seasons: What are some of the changes we see in trees during the year?

LE 1.1b Identify the basic needs of organisms to live and thrive. (FK—Plants, Animals and Life Cycles)

LE 3.3b Observe and compare the different structures that enable each plant to live and Thrive. (FK—Plants, Animals and Life Cycles)

LE 3.1c Observe adaptations of plants. (FK—Plants, Animals and Life Cycles)

Unit Two—Exploring Properties: How do we observe and describe objects?

PS 3.1b,c Observe and describe physical properties of objects using all of the appropriate Senses. (SM, LPFL, FK—)

PS 3.1c,d,e,g Observe and describe physical properties of objects using appropriate Tools. (SM, LPFL, FK—Temperature)

PS 3.1b,c,e Observe, describe, and identify the properties of materials. (LPFL, FK—)

PS 3.1f Sort or group objects according to their properties. (SM, LPFL, FK—)

Unit Three—What are animals?

- LE 1.1a Identify the basic needs of organisms to live and thrive. (FK—Plants, Animals and Life Cycles)
- LE 3.1a Observe and compare the different structures that enable each animal to live and Thrive. (FK—Plants, Animals and Life Cycles, FK—Animal Adaptation, FK—Endotherms, FK--Ectotherms)
- LE 1.1c,d Make clear that nonliving things do not live and thrive. (FK—Plants, Animals and Life Cycles)
- LE 2.2a Recognize that living things have offspring and that offspring closely resembles its parents. (FK—Plants, Animals and Life Cycles)
- LE 5.2e Observe physical animal characteristics that are influenced by changing environmental conditions. (FK—Animal Adaptation)

Alignment with Grade One

Unit One—Animal Diversity: How are animals alike and different?

- LE 3.1a Identify, describe, and compare the physical structures of animals. (FK—Endotherms, FK—Ectotherms, FK—Animal Adaptation, FK—Plants, Animals, and Life Cycles)
- LE 1.1a Identify, in animals, the relationship between the physical structures and the functions of those structures. (FK—Endotherms, FK—Ectotherms, FK—Animal Adaptation, FK—Plants, Animals, and Life Cycles)
- LE 3.1a Compare and contrast the physical characteristics in animals. (FK—Endotherms, FK—Ectotherms, FK—Animal Adaptation, FK—Plants, Animals, and Life Cycles)
- LE 3.1a Describe how physical traits help a species to survive. (FK—Endotherms, FK—Ectotherms, FK—Animal Adaptation, FK—Plants, Animals, and Life Cycles)
- LE 2.2a Observe how animals grow and change in predictable ways. (FK—Plants, Animals, and Life Cycles)
- LE 4.1a,e,f,g Describe animal life cycles and life spans. (FK—Plants, Animals, and Life Cycles)

Unit Two—Properties of Matter: What are some of the properties of solids, liquids, and gases?

- PS 3.2a Observe and describe the three states of matter. (FK—Matter)
- PS 2.1c Observe and describe how water evaporates when left in an open container. (FK-Matter, FK—Evaporation, FK—Condensation, FK—Water Cycle, FK—Weather)
- PS 3.1e Observe that material(s) of which an object is made determines some specific properties of the object. (FK—Matter, FK—Floating and Sinking, FK—Surface Tension)
- PS 3.1f Predict, observe, and examine different substances to determine their ability to mix with water. (FK—Mixtures, Solutions, and Chemical Reactions)
- PS.3.1e Use tools such as hand lenses, rulers, thermometers, and balances to observe and measure the properties of materials. (SM, FK—Matter, FK—Evaporation, FK—Condensation, FK—Floating and Sinking, FK—Surface Tension)

PS 3.1e,f Test objects to determine whether they sink or float. (FK—Floating and Sinking)
PS 3.1c,d,e,g Observe and describe the change of objects when placed in different environments. (FK—Sun, FK—Light, FK—Temperature)

Unit Three—Weather and Seasons: What are some of the changes we notice between seasons?

PS 1.1a Observe and describe weather conditions that occur during each season. (FK—Seasons)
PS 2.1a,b Observe, measure, record, and compare weather data throughout the year. (FK—Seasons, FK—Weather, FK—Snow and Ice, FK—Temperature)
PS 1.1a Compare temperatures in different locations. (FK—Temperature, FK—the Sun)
PS 1.1a Illustrate and describe how the sun appears to move during the day. (FK—the Sun, FK—Night and Day)
PS 1.1a Illustrate and describe how the moon changes appearance over time. (FK—Moon Phases, FK—Night and Day)
PS 1.1b Describe the 24 hour day/night cycle (time). (FK—Night and Day)
PS 1.1c Observe and record the changes in the sun’s and the other stars’ position, and the moon’s appearance relative to time of day and month, and note the pattern of this change. (FK—the Sun, FK—Stars, FK—Moon Phases, FK—Seasons, FK—Day and Night)
PS 4.2a Recognize that the sun’s energy warms the air. (FK—the Sun, FK—Temperature)

Alignment with Grade Two

Unit One—Earth Materials: What materials make up the Earth?

PS 2.1d Observe and describe the basic properties and components of soil. (FK—Soil and Rocks)
PS 2.1d Investigate different types of soil. (FK—Soil and Rocks)
PS 2.1d Explore how erosion and deposition are the result of interactions between air, wind, water, and land. (FK—Erosion, FK—Wind, FK—Soil and Rocks)
PS 3.1b,c Observe and describe the physical properties of rocks. (FK—Soil and Rocks)
PS 3.1f Compare and sort rocks by size, color, luster, texture, patterns, hardness/softness. (FK—Soil and Rocks)
LE 1.1d Make clear that nonliving things can be human-created or naturally occurring. (FK—Erosion, FK—Wind, FK—Building Landforms)

Unit Two—Forces and Motion: What causes objects to move?

PS 5.1a Observe and describe the position of an object relative to another object. (FK—Force)
PS 5.1 Identify a force as push or pull. (FK—Force)
PS 5.1b Demonstrate how the position or direction of an object can be changed by pushing or pulling. (FK—Force)
PS 5.1c Identify gravity as a force that pulls objects down. (FK—Force, FK—Magnetism/Gravity)
PS 5.2a Observe and describe how the force of gravity can affect objects through air, Liquids, and solids. (FK—Force, FK—Gravity)

Unit Three—Plant Diversity

- LE 3.1b Identify and compare the physical structures of a variety of plant parts. (FK—Plants, Animals, and Life Cycles)
- LE 2.1a Observe and describe how plants grow and change in predictable ways. (FK—Plants, Animals, and Life Cycles)
- LE 4.1a,b,c,d Observe plant life cycles and life spans. (FK—Plants, Animals, and Life Cycles)
- LE 1.1b Describe the basic needs of plants. (FK—Plants, Animals, and Life Cycles)
- LE 1.1b Describe the basic life functions of plants. (FK—Plants, Animals, and Life Cycles)
- LE 5.2a Observe that plants respond to changes in their environment. (FK—Plants, Animals, and Life Cycles)