Simple Machines Explorer Kit and Launch Pad for Learning
Sample Alignment with Gwinnett County Academic Knowledge and Skills

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)

Kindergarten

Language Arts

A – Listening, Speaking, and Viewing

- Listen to a variety of literary forms, including stories and poems (All)
- Listen attentively to respond to questions and to follow two-part directions (All)
- Use oral language to relate experiences and expand vocabulary (All)
- Listen to and speak in formal conversations with peers and adults (All)
- Communicate effectively when using descriptive language, relating experiences and retelling stories (All)

B – Reading (Strategies and Comprehension)

- Listen to, select and explore a variety of literary and informative text for pleasure or for knowledge (All)
- Retell stories and respond to literal, inferential and evaluative questions about the story (All)
- Demonstrate and understand that print makes sense by reading and explaining own writings and drawings (All)

C – Reading (Concepts About Print)

- Relate written language to spoken language (All)
- Demonstrate principles of directionality by holding print materials in the correct position and using left-to-right and top-to-bottom progression (All)

D – Reading (Word Work/Vocabulary/Phonics/Fluency)

- Increase vocabulary to reflect a growing range of interests and knowledge (All)
- Use words that signal sequence relationships such as first, next and last (All)
- Use color, size, shape, structure and function to classify objects, letters and words (All)

E – Writing Strategies
- Dictate words, sentences and stories (All)
- Copy simple shapes, designs, numerals and letters (All)
- Draw pictures and/or use letters and phonetically spelled words to write about experiences, stories, people, objects and events (All)

G – Accessing Information/Reference Skills
- Explore the uses of the media center, picture books, audiovisual resources and available technology for reading and writing (All)

Mathematics

A – Process Skills
- Build new mathematical knowledge through problem solving (SM, FK)
- Solve problems that arise in mathematics and other areas (SM, FK)
- Apply and adapt a variety of appropriate strategies to solve problems (All)

B – Numbers and Operations
- Demonstrate one-to-one correspondence when counting objects through 30 (SM, FK)

C – Geometry
- Recognize, name and sort geometric figures: triangles, rectangles, squares, circles (SM, FK)
- Recognize and name spheres and cubes (SM, FK)
- Identify concrete objects in the environment and represent the objects using basic shapes (SM, FK)
- Combine basic shapes into basic and more complicated shapes (SM, FK)
- Identify when an object is beside, above, below, in front of, behind, inside or outside another object (SM, FK)

D – Measurement
- Compare and order objects on the basis of length, capacity, height, and weight (SM, FK)

E – Algebra
- Sort and categorize objects by identifying attributes such as longer/shorter, more/less, taller/shorter, and heavier/lighter, and make generalizations (SM, FK)

F – Data Analysis and Probability
- Pose information questions, collect and organize data and record results using objects, pictures and picture graphs (SM, FK)

Science

A – Characteristics of Science
- Discuss the importance of curiosity, honesty, openness, and skepticism in science and exhibit these traits in efforts to understand how the world works (All)
- Demonstrate knowledge of scientific processes and inquiry (All)

B – Earth Science

- Analyze time patterns and objects (sun, moon, stars) in the day and night sky (LPFL, FK)
- Describe the physical attributes of rocks and soils (FK)

C – Physical Science

- Describe objects in terms of their composition and physical attributes (SM, FK)
- Explore the forces that cause a change in motion (speed and direction, push and pull) (SM, FK)
- Observe and communicate the effect of gravity on objects (FK)

D – Life Science

- Distinguish living things from non-living things based on physical attributes (FK)
- Compare and contrast groups of organisms (FK)

First Grade

Language Arts

A – Listening, Speaking, and Viewing

- Adapt or change oral language to fit the situation by following the rules of conversation with peers and adults (All)
- Communicate effectively when using descriptive language, relating experiences and retelling stories read, heard or viewed (All)
- Listen attentively to ask and respond to questions and to follow three-part directions (All)

B – Reading (Strategies and Comprehension)

- Recognize, listen to and read a variety of literary and informational text (All)
- Read for a variety of purposes including to answer questions or to stimulate ideas(All)
- Compare and contrast content within and between stories and between stories and personal experiences (All)
- Identify characters' actions, motives, emotions, traits, and feelings (All)
- Follow one step written directions (All)

C – Reading (Concepts About Print)

- Point out word and text progression: left-to-right, return sweep, top-to-bottom and front to back (All)

D – Reading (Word Work/Vocabulary/Phonics)

- Increase vocabulary to reflect a growing range of interests and knowledge (All)

H – Accessing Information/Reference Skills

- Use the media center and available technology as sources of information and pleasure (All)

Mathematics

A – Process Skills

- Build new mathematical knowledge through problem solving (All)
- Solve problems that arise in mathematics and other areas (All)
- Apply and adapt a variety of appropriate strategies to solve problems (All)

C – Geometry

- Model and explain basic geometric shapes and spatial relationships of concrete objects (SM, FK)
- Create various two and three dimensional figures and identify basic figures within them (SM, FK)
- Create pictures and designs using shapes, including overlapping shapes (SM, FK)
- Compare, contrast and/or classify geometric shapes by the common attributes of position, shape, size, number of sides and number of corners (SM, FK)
- Arrange and describe objects in space by proximity, position and direction (SM, FK)

D – Measurement

- Measure basic quantitative attributes of concrete objects (SM, FK)
- Compare and order the length, weight or capacity of two or more objects by using direct comparison or a nonstandard unit (SM, FK)
- Compare length, weight and capacity of concrete objects (SM, FK)
- Estimate and measure using a non-standard unit that is smaller than the object to be measured (SM, FK)
- Compare and order the sequence or duration of events (SM, FK)

F – Data Analysis and Probability

- Pose questions and collect, organize and interpret data about self and surroundings(SM, FK)
- Create and interpret simple tables, tally charts, picture graphs and bar graphs (All)
- Organize and record data using objects, pictures, tally marks and picture graphs (All)

Science

A – Characteristics of Science

- Discuss the importance of curiosity, honesty, openness, and skepticism in science and exhibit these traits in efforts to understand how the world works (All)
- Demonstrate knowledge of scientific processes and inquiry methods (All)
- Apply computation and estimation skills necessary for analyzing data and following scientific investigations (SM, FK)
- Use tools and instruments for observing, measuring and manipulating objects in scientific activities (All)
- Communicate scientific ideas and activities clearly (All)

B – Earth Science

- Observe, measure and analyze weather data to determine patterns in weather and climate (LPFL, FK)
- Observe and record changes in water as it relates to weather (LPFL, FK)

C – Physical Science

- Investigate the properties of light and sound (FK)

D – Life Science

- Compare and contrast the characteristics and basic needs of plants and animals (FK)

<u>Second Grade</u>

Language Arts

A – Listening, Speaking, and Viewing

- Communicate effectively when using descriptive language, relating experiences and relating stories read, heard or viewed (All)
- Listen attentively to ask and respond to questions and to follow three-step directions (All)
- Listen to and respond to literal, inferential and evaluative questions from literary and informational text presented orally (All)
- Listen to and view a variety of media to acquire information (All)

B – Reading (Strategies and Comprehension)

- Read for a variety of purposes including to answer questions or to stimulate ideas (All)
- Compare and contrast content within and between stories (All)
- Identify characters, actions, motives, emotions, traits, and feelings (All)
- Follow multi-step written directions (All)
- Interpret information from illustrations, diagrams, charts, graphs and graphic organizers (All)

C – Reading (Word Work/Vocabulary/Phonics)

- Increase vocabulary to reflect a growing range of interests and knowledge (All)

D – Writing (Strategies)

- Write to report answers to research questions (All)

G – Accessing Information/Reference Skills

- Use the media center and available technology as sources of information and pleasure (All)

Mathematics

A – Process Skills

- Build new mathematical knowledge through problem solving (All)
- Solve problems that arise in mathematics and other areas (All)
- Apply and adapt a variety of appropriate strategies to solve problems (All)

C – Geometry

- Describe and classify plane figures (triangles, square, rectangle, trapezoid, quadrilateral, pentagon, hexagon and irregular polygonal shapes) according to the number of edges and vertices and the sizes of angles (SM, FK)

D – Measurement

- Estimate lengths, then measure to determine if estimations were reasonable (SM, FK)
- Determine an appropriate tool and unit for measuring length (SM, FK)
- Estimate, then measure temperature and determine if estimations were reasonable (FK)
- Explore Celsius temperature scale (FK)

F – Data Analysis and Probability

- Pose questions and collect, organize and interpret data about self and surroundings (All)
- Collect and organize data by creating simple tables, picture graphs, bar graphs, and Venn diagrams (All)
- Interpret picture graphs, Venn diagrams and bar graphs (All)

Science

A – Characteristics of Science

- Discuss the importance of curiosity, honesty, openness, and skepticism in science and exhibit these traits in efforts to understand how the world works (All)
- Demonstrate knowledge of scientific processes and inquiry methods (All)
- Apply computation and estimation skills necessary for analyzing data and following scientific explanations (SM, FK)
- Use tools and instruments for observing, measuring and manipulating objects in scientific technological matters (SM, FK)
- Communicate scientific ideas and activities clearly (All)

B – Earth Science

- Describe the universe as including the moon, sun, other stars and planets (LPFL, FK)
- Investigate the position of the sun and moon to show patterns throughout the year (LPFL, FK)
- Observe and record changes in our surroundings and infer the causes of those changes (LPFL, FK)

C – Physical Science

- Investigate the properties of matter and changes that occur in objects (SM, FK)
- Identify sources of energy and how energy is used (FK)
- Demonstrate changes in speed and direction using pushes and pulls (SM, FK)

D – Life Science

- Investigate the life cycles of different organisms to understand the diversity of life (FK)