EXCEL Syllabus
Kami Tipps - Shady Shores Elementary School
Spring 2026

Dear Parents and Guardians,
Welcome to EXCEL, our Gifted and Talented Program at Shady Shores Elementary! This syllabus outlines what your child will learn this semester, and how you can support their success. As required by Texas law (Senate Bill 12), this document serves as the instructional plan and is available for your review. We are excited to partner with you for a great semester.

**ALL GRADE LEVELS are provided with and engaged in accelerated instruction.

***ALL GRADE LEVELS are expected to develop these skills: Deductive Reasoning, Critical Thinking Skills, Outside the Box Thinking, Engineering Process, Leadership, building and construction, Growth Mindset, and Self-efficacy.

5th Grade - Spring 2026

Continue Historian: Shipwreck Part 1 (from Fall Semester):
As a historian and numismatist, the student understands the symbolism and value behind various coins and currencies. It is their job to research and determine a shipwreck that could have valuable "buried treasure."

- Students will research and create an infographic to provide a visual representation of their chosen shipwreck, complete with details about the ship, the purpose and voyage of the ship, and coins/currency that would be found in the shipwreckage. The students will share the symbols, value, and meaning behind retrieved currency, coins, treasure, etc.

Historian: Shipwreck Part 2:
After discovering multiple coins and evaluating the meaning behind symbols, sayings, images, and values, students will create a coin that represents themselves that can be 3-D printed.

Historian: Shipwreck Part 3:
Students will use the engineering design process to create a boat that can float, carry a set load, and demonstrate principles of displacement and stability, documenting their design

choices, testing results, and modifications to improve their final vessel.

Martian Base Designer Part 1:
The students will utilize the Engineering Design Process throughout this unit to tackle survival challenges on Mars (no air, water, food, extreme cold) and design a functional base for colonization on Mars. They will determine what Mars is like by researching Mars' atmosphere, geology, gravity, temperature, and potential hazards (dust storms, radiation), identifying problems (no air, cold), and brainstorming solutions (power, shelter, life support, oxygen generators, insulation).
Students act as aerospace engineers, designing a sustainable habitat for astronauts on Mars, addressing Earth-like needs. They will plan and design a Mars base that provides for the essential needs (air, water, food, shelter, power) of human colonists while considering the unique challenges of the Martian environment (thin atmosphere, radiation, extreme temperatures). Collaboratively, they will create blueprints for modules (living, lab, power, food production) on grid paper, considering scale and layout, and construct 3D models using recycled materials (cardboard, plastic bottles, etc). Once the model is complete, students will design, build, and program a Mars rover to complete simulated Mars missions.

4th Grade Spring 2026

Wind Energy Systems:

In this task, students learn about natural resources. They classify resources into renewable and non-renewable, and finally determine ways to conserve our resources.

- Students will research and create a multimedia presentation that represents an accurate visual representation of resources with examples, descriptions, images, etc. It will include facts about resources and conservation options, which include diagrams, photos, charts, and graphs, and any other media that will enhance their presentation and keep the audience engaged. Students will discover wind turbines, how they are constructed, and convert energy into electricity.
- Students will integrate geometry skills such as quadrilaterals, symmetry, perimeter, area, parallel & perpendicular lines, and angle properties into the 2nd part of this task: Kite Designer, as they design and construct their own kite.

Engineer: Rollercoaster Designer:

In this task, students become roller-coaster engineers as they design, build, and test a model roller coaster. This unit integrates math and science by exploring forces like gravity

and inertia. They will also apply principles of potential and kinetic energy and use geometric concepts to design and build a rollercoaster model.

- Students will integrate math objectives that focus on geometry skills and measurement standards into the physical design process. They will identify and draw geometric elements within their designs, such as points, line segments, rays, angles, 2D & 3D shapes. They will incorporate parallel and perpendicular lines as track segments.

3rd Grade Spring 2026:

Lunar Astronaut:

In this task, students act as "mission specialists," applying their understanding of Earth and space concepts such as the positions and motions within the Sun, Earth, and Moon system, and the effect of gravity on Earth, in space and on the Moon. The students will analyze and determine the protective gear suitable for the Moon's environment and create a diagram of a space suit that a lunar astronaut would use. Students will use math skills to convert and compare the weight of objects to that object's weight on the moon. Students will analyze mission patches and design their own mission patch based on science concepts they have learned.

Design Architect: Park Designer

Students will act as urban planners, integrating math and science skills to collaboratively design a community park incorporating principles of physical science, environmental science, and geometry. The park design will be a functional park layout that is detailed and meets specific criteria. Students will create scale drawings to create the park blueprint, where they will determine the area of rectangular sections. They will also identify and classify geometric attributes of shapes used in their design. Students will finalize this unit by taking their design and utilizing the engineering process to create a model of their park.

2nd Grade Spring 2026:

Erosion:

As geologists, students will be exploring and learning the processes of erosion, weathering, and deposition, and how these change the Earth's surface. They will use critical thinking to explain how these processes helped shape landforms such as the Grand Canyon. They will utilize

powerful ideas such as the Mighty River (Colorado River) is the sculptor or main "carver" of the Grand Canyon, weathering and erosion are "rock eaters", and that different colors of rocks are "layers of time". Students will investigate and hypothesize with a variety of experiments with this unit and will ultimately design and create a model of the Grand Canyon.

Volcanology Contest:

In this unit, students will act as geologists to investigate how landforms, especially volcanoes, are created and shaped. They will utilize higher-level thinking to compare the layers of the Earth and analyze how volcanic eruptions form new land, creating an ever-changing surface on Earth. Students will design and build simple erupting models of volcanoes to observe and determine how eruptions can change the Earth's surface.

1st Grade Spring 2026:

Sound Energy: Vibrations

In this project, students will learn that sound is a form of energy and that it is made by vibrations. They will explore and learn how sound waves travel and how they vary based on the materials through which they are traveling.

Students will utilize their knowledge and newfound expertise in sound waves and vibrations to develop a selection of instruments that support their discoveries.

Seedling to Plant:

In this project, students observe life cycles of plants and determine their basic needs through observations and scientific investigations.

Throughout this project, students must research plant parts, life cycles, and essential requirements for growth. They will then independently create their own illustration and diagram explaining these key ideas. Students will compare and contrast various seeds and categorize them in groups that they determine and justify. They will plant and grow seeds into full-size plants.

Kindergarten Spring 2026:

Gifted and talented services will begin by March 1, 2026, for those students meeting the district qualifications for GT placement.

Honeybees:

In this project, students will learn the importance of bees in their environment and in the reproduction of plants. They will explore and learn the unique pollination, life cycle, and habitats of honeybees.

Students will utilize their knowledge and newfound expertise to showcase the life cycle of a honeybee, create a diagram of the honeybee explaining the relevance of each of its parts, explain what they need and the process bees use to make honey, and explain the importance of bees as pollinators by observing, drawing, and acting out the process.

Thank you.
Kami Tipps
ktipps@ldisd.net

Leader in Me:
The 7 Habits is integrated into all activities, all interactions, and all experiences. Leader in Me habits are the essence of life in our GT program.