MONTHLY STEM THEMES & ACTIVITIES

SEPTEMBER

National Coding Week
(Second Week of September)

Description: Promote coding and computer science skills among students.

Activity 1: Use a platform like Scratch or Code.org to create a simple interactive game or animation.

Activity 2: Participate in a coding challenge where students solve a series of problems using a programming language.

Activity 3: Build and program a simple robot using a kit like LEGO Mindstorms or VEX Robotics.

OCTOBER

National Chemistry Week
(Third Week of October)

Description: Highlight the importance of chemistry in everyday life and its role in various industries.

Activity 1: Conduct a safe and simple chemical reaction experiment, such as making a baking soda and vinegar volcano, and explain the science behind it.

Activity 2: Create a colorful chemistry experiment using household items, like making homemade slime or crystal-growing.

Activity 3: Research a famous chemist and present their contributions to the field of chemistry.

NOVEMBER

National STEM/STEAM Day
(November 8)

Description: Celebrate all aspects of STEM and STEAM (Science, Technology, Engineering, Arts, and Mathematics).

Activity 1: Organize a STEM fair where students can present their projects and experiments, incorporating elements from all STEM fields.

Activity 2: Create a STEAM art project that combines elements of science and art, such as a kinetic sculpture or a light painting.

Activity 3: Host a STEM challenge day with various hands-on activities and competitions in different STEM areas.

DECEMBER

Computer Science Education Week
(First Full Week of December)

Description: Encourage students to learn about computer science and its applications.

Activity 1: Participate in an Hour of Code activity, where students complete a one-hour tutorial to learn the basics of coding.

Activity 2: Design and build a simple website or blog using HTML and CSS.

Activity 3: Explore artificial intelligence by creating a basic chatbot or experimenting with machine learning models.

JANUARY

National Science Fiction Day
(January 2)

Description: Celebrate the intersection of science and imagination by exploring futuristic concepts and technologies.

Activity 1: Create a short science fiction story or comic strip featuring advanced technologies, then discuss the real-world science behind those concepts.

Activity 2: Watch a science fiction movie and identify the scientific principles it portrays, discussing their accuracy and feasibility.

Activity 3: Design and build a model of a futuristic city, considering sustainable technologies and advanced transportation systems.

FEBRUARY

National Engineers Week
(Third Week of February)

Description: Highlight the contributions of engineers and inspire students to explore engineering fields.

Activity 1: Design and build a simple bridge using only popsicle sticks and glue. Test its strength by gradually adding weight.

Activity 2: Participate in a tower-building challenge using materials like straws and marshmallows, focusing on stability and height.

Activity 3: Research a famous engineer and create a presentation about their contributions and impact on society.

MARCH

Pi Day
(March 14)

Description: Celebrate the mathematical constant π (pi) and its applications in various fields of science and engineering.

Activity 1: Measure the circumference and diameter of various circular objects, then calculate and compare their ratios to π.

Activity 2: Bake a pie and use it to demonstrate the concept of π by measuring its circumference and diameter.

Activity 3: Create art inspired by the digits of π, such as a colorful poster or a sequence of beads representing the digits.

APRIL

Earth Day
(April 22)

Description: Focus on environmental science and the importance of protecting our planet.

Activity 1: Conduct a local environmental cleanup and analyze the types of waste collected. Discuss ways to reduce waste and recycle more effectively.

Activity 2: Plant a tree or start a small garden, discussing the benefits of plants for the environment.

Activity 3: Create a compost bin and learn about the decomposition process and how composting helps reduce waste.

MAY

National Space Day
(First Friday in May)

Description: Explore the wonders of space and the latest advancements in space exploration.

Activity 1: Build and launch simple water rockets, then discuss the principles of aerodynamics and propulsion.

Activity 2: Use a telescope or binoculars to observe the night sky and identify constellations and planets.

Activity 3: Create a scale model of the solar system using everyday materials to visualize the distances between planets.

JUNE

National Oceans Month

Description: Celebrate and learn about the world's oceans, marine life, and oceanography.

Activity 1: Create a model of an ocean ecosystem, highlighting the different layers and types of marine life found in each.

Activity 2: Conduct a water quality test on a local body of water, analyzing factors like pH, turbidity, and pollution levels.

Activity 3: Build a simple underwater robot or remotely operated vehicle (ROV) and test its maneuverability in a pool or large container of water.

JULY

National Moon Day
(July 20)

Description: Commemorate the Apollo 11 moon landing and explore lunar science.

Activity 1: Make a scale model of the solar system, including the moon's phases, and discuss the impact of the moon on Earth.

Activity 2: Create a moon habitat design, considering the challenges of living on the lunar surface.

Activity 3: Simulate a moon landing using a computer program or virtual reality, exploring the difficulties astronauts face.

AUGUST

National Inventors Month

Description: Encourage creativity and innovation by studying famous inventors and their inventions.

Activity 1: Invent a new product or improve an existing one, then create a prototype and present it to the class.

Activity 2: Host a "Shark Tank" style event where students pitch their inventions to a panel of judges.

Activity 3: Research and create a timeline of significant inventions and their impacts on society.