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2017 ELEMENTARY STEM CAMP COURSE DESCRIPTIONS

Grade 1-2

Bubble Bonanza

Students will enter the world of Science, Technology, Engineering and Mathematics (STEM) as they explore how bubbles behave and investigate properties of materials they can use to create different kinds of bubble wands. Students will engineer bubble wands for the grand finale.

Introduction to Computer Coding and Rocking Robotics

Computers and technology surround us. We need to learn how to use them. But how does this ever-changing world of technology work? How do computers think? How can we make them go faster and work better? Students investigating these questions today will be our computer scientists of tomorrow. In this course, Introduction to Computer Coding and Rocking Robotics, students going into grades 1-2 will explore the building blocks of how computers work. Students will experience the foundations of coding and robotics, utilize iPads to apply coding skills, and gain a greater understanding of computer science.

Science of the Senses

This course will teach students the science behind each of the senses and how the senses work. Students will learn that ears catch vibrations and eyes use light infractions to see the world. Nerves on the skin feel sensations, skin inside the nose detects odor molecules, and taste buds have the ability to sense four flavors. What a "sensational" world!

Grades 2-3

Earth Habitats

In this class, students will be introduced to seven different habitats. They will learn about the plants and animals that live in those habitats, and how they are all dependent on one another. Students will participate in hands on discovery experiences for each of the habitats.   They will explore various animals and their habitats through reading, art, and literature activities, as well as multi-media projects. Included in the class will be a field trip and guest speakers to enhance learning in this class. At the end of the class students will present a play to remind all of us the importance of saving our habitats.

Lego Technics and Math Applications

Students will work together to use Legos to build working models of various machines and will study the math applications of simple machines. Any student will enjoy this experience.

Take the Plunge

The "Taking the Plunge" course allows students to explore how ocean engineers use their knowledge of science, math, the ocean, and their creativity to design and test technologies

that solve problems related to ocean environments. Concepts such as density, ocean engineering, submersibles, and other ocean-related science facts will be discussed and used in controlled tests to determine an object's ability to float or sink. This knowledge and the engineering design process is used as the students work in teams to develop their own ocean submersible designs.

Problem-Solving in a Maker Space

Participants will solve real problems using creativity, collaboration, design, and hands-on materials. Students will work in groups to find and build the solutions. A culminating project will result in each group using a 3D printer to create their answer to the problem.

Grades 3-5

Animation Station

Explore the creation of animated figures used in movies! Students will use coding to create their own animated projects using Pixar Education. The education and career path of animators will also be explored.

Computer Coding and Rocking Robotics

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Google Expedition

Take a field trip everyday-virtually! Participants will solve problems and mysteries around the world using virtual reality tools. Students may visit the Louvre, the Smithsonian Museum, a coral reef, or a rain forest in order to find answers and solve the mysteries.

Learning with Minecraft

Students will enter the world of Minecraft and learn coding, problem-solving, and creativity to solve problems. Minecraft Education allows students to collaborate and create as they learn science concepts such as deforestation and planet exploration. Mathematics concepts are also reinforced as students work with geometric concepts and fractions in real life settings.

Nanotechnology

NanoNano: A Study of the Smallest Science! Nanometer-sized things are very small--one billionth of a meter! Nano is found in nature and technology and often behave differently than larger things do. Explore the different aspects of nanotechnology, nanoscience and nanoengineering in this hands-on science class. Did you know that a single blink of an eye is about one-billionth of a year? You will after you take this fun and education class!

Rockets and Rovers

Rockets and Rovers is a course that taps into students' engineering skills as they experience what it is like to be a NASA scientist and engineer. Students will engage in the engineering process by exploring how Aerospace Engineers create and test rockets and rovers to explore space. Students will work in cooperative groups to design and test their own pump rockets and rovers. In addition, they will have an opportunity to build their inquiry skills when modifying their designs, creating a more efficient model.

Roving Reporter

Plan, create, and produce news reports about the activities and events of the STEM Academy. Students will explore written, filmed, audio, and social media reporting. They will take pictures, create movies, interview participants and write stories in order to report on the projects, activities, and events of this summer session.

The Sky's the Limit

What is aeronautical engineering? What does it take to be a pilot? This class will explore the answers to these questions and more. Students will learn what is new in the world of flight and work with drones or unmanned aerial vehicles. In addition, students will collaborate and apply what they have learned to design a model flying technology that meets a set of criteria and constraints.

Grades 4-5

Claymation Movie Making

Students become a scriptwriter, movie producer, and editing expert as they learn the basics of animating, filming, video dubbing and storyboarding. Students will gain experiential knowledge of the filmmaking industry by idea mapping, synopsis writing, and learning the elements of a good story. A current global topic such as the environment, food, medicine or water will be studied and recorded as students learn to work together to create their film.

Invent an App

Students will investigate and solve a real life problem by designing a digital app. Students will develop coding skills, collaborate, and be creative as they plan and build an app.

The Science of Magic

This summer course will teach students various science concepts through the use of magic tricks and optical illusions. Each session focusses on specific science concepts such as water works, air pressure, motion, force and topology, while allowing students to experiment and enhancing critical thinking and collaboration skills.