



# SPRING 2019

## Class Descriptions

### February 1<sup>st</sup> – Innovations I

**PreK4-1<sup>st</sup> Grade-** Innovators help to make our daily lives easier with inventions that improve our houses, schools, and cities. In this class we will explore how to be an innovator with various 2D projects.

**2<sup>nd</sup>-4<sup>th</sup> Grade-** What is Innovation? Students will learn about kid inspired innovations for smart phone holding devices! You can make the coolest things with ordinary items laying around your house! Students will explore new and old innovations and create innovated devices from scratch!

**5<sup>th</sup>- 7<sup>th</sup> Grade-** The Mongolians were known for using previous inventions and improving upon them. During this class, students will be discussing how the Mongols took traditional ideas and inventions and created new innovations that helped their empire to grow and flourish!

**8<sup>th</sup>-12<sup>th</sup> Grade-** Tools are often designed to make a difficult task require less force. In this class, students will learn about different types of mechanical advantages that get used every day. Students will learn how a rope and pulley system can be designed so that a load can be lifted with only a fraction of the force normally required.

### February 15<sup>th</sup> – Innovations II

**PreK4-1<sup>st</sup> Grade-** Innovations have been improving the world since the beginning of time. Roads made travel easier, and the invention of the wheel made traveling more convenient. This class we will explore how to be an innovator with various 3D projects.

**2<sup>nd</sup>-4<sup>th</sup> Grade-** How does it work? Student will learn about hydraulic systems! Machines are made up of many tiny machines like hydraulics! Students will discover how machines work together to make things happened every day! They will also make a hydraulics model.

**5<sup>th</sup>- 7<sup>th</sup> Grade-** Students will delve deeper into the world of innovations. In this lesson, students will have their imaginations tested as they are given random objects and must find a new, innovative use for them!

**8<sup>th</sup>-12<sup>th</sup> Grade-** Can you imagine life without motors? In this class, students will learn why motors are so important and the basics of how they work. We will cover how a simple 4-stroke engine works as well as a DC electric motor. The students will then get to build an electric motor on their own.

### March 1<sup>st</sup> – Archeology I

**PreK4-1<sup>st</sup> Grade-** Archeologists discover how cultures lived by excavating the past. In this class we will dig up objects and try to guess what they were used for, or what kind of people may have made them.

**2<sup>nd</sup>-4<sup>th</sup> Grade-** How does stuff end up in a Museum? Students will learn about collectors and collecting things! You can collect things like stuffed animals and sea shells! Students will discover categorization and archeological discoveries! They will explore bug collections and archeology puzzles.

**5<sup>th</sup>- 7<sup>th</sup> Grade-** – How can archeology be used to tell us about previous civilizations? In this class, students will learn about techniques used by archeologists to date artifacts!

**8<sup>th</sup>-12<sup>th</sup> Grade-** Have you ever found an object in the dirt and wondered how old it was? Students in this class will learn some of the different ways creatures and artifacts can be preserved for centuries. We will also learn about different techniques archeologists use to determine how old an artifact is.

### March 15<sup>h</sup> – Archeology II

**PreK4-1<sup>st</sup> Grade-** Archeologists have uncovered some of the world's greatest achievements. In this class we will learn about some of the most amazing archeological finds, from great hidden cities to the tombs of the pharaohs of Egypt.

**2<sup>nd</sup>-4<sup>th</sup> Grade-** Just Dig It! Students will learn about excavation and what it's like to dig like an Archeologist. What tools do they use? Students will uncover calipers, spades, and wheel barrels! They will excavate hidden remains and even dinosaur eggs!

**5<sup>th</sup>- 7<sup>th</sup> Grade-** Students will unearth an ancient civilization in this week's lesson! Students will solve an age old puzzle and discover how archeologists use artifacts and remains to determine important information about ancient communities!

**8<sup>th</sup>-12<sup>th</sup> Grade-** In this class, students will learn about what it's like to be a real archeologist. After learning about some of the basic rules of an archeological dig, they will search through sand for pieces of pottery. They will also try to put the pottery back together and form an interpretation of what the object's society might have been like.

### **March 29<sup>th</sup> – Weather I**

**PreK4-1<sup>st</sup> Grade-** Meteorologist study weather and try to predict what types of storms may come our way. In this class we will learn about different types of weather conditions and also how trees can tell us about periods of drought or abundant rain.

**2<sup>nd</sup>-4<sup>th</sup> Grade-** What is the difference between weather and climate? Students will learn about temperature humidity and wind speed and direction! Weather changes all the time! Climate is weather over long periods of time! Students will explore extreme weather and climate change. They will even make it rain!

**5<sup>th</sup>- 7<sup>th</sup> Grade-** Come and see how weather and climate affected the Mongolian Empire! Weather and climate are often changing and can leave lasting impacts on world history. In this class, students will delve deep and discover how tree rings can tell us about the past. Students will create climate zone maps!

**8<sup>th</sup>-12<sup>th</sup> Grade-** Vortexes occur in fluids all the time whether we see them or not. They also play a large role in weather through the formation of hurricanes and tornadoes. In this class, students will learn how a vortex is formed and see real life examples of them.

### **April 12<sup>th</sup> – Astronomy I**

**PreK4-1<sup>st</sup> Grade-** Astronomers study our solar system to help us learn more about the space around us. In this class we will learn about the planets and objects that make up our space neighborhood with fun hands on projects.

**2<sup>nd</sup>-4<sup>th</sup> Grade-** Let's meet the star named Sol! Students will learn about the Sun and how it sits at the center of our solar system! What makes it a star? Students will discover different types of stars and star properties. They will create their own spin art Sun.

**5<sup>th</sup>- 7<sup>th</sup> Grade-** Learn how ancient people used the maps to navigate in this engaging class. Students will examine the night sky and learn the major constellations that ancient civilizations used to navigate land and sea. They will also create their own simple astrolabe!

**8<sup>th</sup>-12<sup>th</sup> Grade-** Students in this class will learn about how we use light to study our universe. They will learn about famous space telescopes and how they work. We will also go over different types of light and how they help us see parts of space we couldn't see otherwise.

### **April 26<sup>th</sup> – Astronomy II**

**PreK4-1<sup>st</sup> Grade-** Astronomers throughout the ages have used the stars to help people travel long distances. In this class we will learn about constellations and create our own pictures in the nighttime sky.

**2<sup>nd</sup>-4<sup>th</sup> Grade-** Galaxies are giant Solar Systems! Students will learn about the mysteries of galaxies and what they're made up of. Where is the center of a galaxy? Students will uncover black holes, dust clouds, and stars. They will make their very own galaxies in a bottle!

**5<sup>th</sup>- 7<sup>th</sup> Grade-** Eclipses have always captured the imagination of humans. In this class students will study the different types of eclipses before doing a set of eclipse based experiments and crafts!

**8<sup>th</sup>-12<sup>th</sup> Grade-** What is gravity and where does it come from? These questions will be answered in this class where we talk about the importance of gravity and how it holds our solar system together. We will even see examples of gravity in space and how solar systems are formed.