2012 COURSES

The courses allow children with exceptional intellectual ability to extend their existing fund of knowledge through first-hand experimentation and creative experiences.

4 years old or entering K
AWESOME APOIDEA


Why did the Ancient Egyptians collect bees thousands of years ago? Why is our relationship with these complex creatures so important today? Honey bees, bumble bees, carpenter bees, killer bees, and sweat bees are just some of the species that make up the Apoidea family. In what regions of the world are these interesting insects found? Learn about the life cycle of bees as well as the different roles within the caste. Are bees the only insects involved in the production of over 150 crops we eat? How many flowers must worker bees visit to make one tablespoon of honey? How do bees communicate? Do the honeybee waggle dance and find out how bees use their senses. Investigate the role of an apiculturist. Make your own beeswax candles. Simulate sipping through your own proboscis. You will be as busy as bees learning all about this unique Apoidea family.

Entering K or 1st
POWERFUL PACHYDERMS

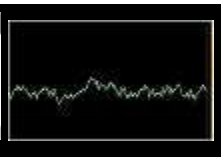


Investigate the world of these mighty beasts that have walked this earth for 55 million years! Learn about different types of elephants and their unique attributes. Did you know a single tusk can weigh over 200 pounds? In what ways do they use their tremendous trunks? How do elephants communicate? Learn about their connections to prehistoric animals and how they evolved into the animals we see today. Build a model of a habitat for the largest land mammal. What impact do hunters and people have on the population of this endangered species? What can be done to protect them? Explore their survival tactics. Join us to learn more about the exciting and interesting world of powerful and playful Pachyderms!

Entering 1st or 2nd grades
CAPTIVATING CAVES

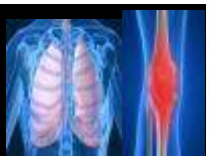

What are Cave Popcorn, Cave Bacon and Soda Straws? These might sound like the newest food craze, but they are all types of formations that can be found in caves! Let's go "spelunking" and discover what lies underground. Are you ready to create your own cave, take a tour of a virtual cave, create sinkholes, and grow our own crystals? Learn about different animals that live in caves, like the cave shrimp. How are sea, fissure, slate, sea and sandstone caves similar? How were they formed? Where can you find them? Grab your explorer light helmet and join us on a fascinating adventure underground.

Entering 2nd or 3rd
SENSATIONAL SOUND


Sound is all around us, but what is sound? Does sound travel faster and further in water or air? What is the speed of sound? Do all living things hear the same things at the same frequencies? Did you know a whale's "song" can travel a distance of 500 miles? What is a sonic boom? Make your own microphone and sound effects. Create sound waves and determine if they create actual sound. Experiment with pitch and volume by assembling different instruments to produce sound. How do we measure vibrations? Which materials are the best conductors for sound? We will explore sound by making a hydrophone. Conduct a series of scientific investigations and participate in a "mock science fair." Delve into the wonderful world of the physics of acoustics.

Entering 3rd or 4th grades
SUPER SYSTEMS




Whose heart beats 95 times a minute? Who breathes an average of 18 breathes a minute? Who needs 1,300 mg of calcium every day? Who is still digesting food from last night's dinner? Give up? It's YOU! The human body is full of mysteries! Become a biologist and take a look into the human body as we learn how cells form tissues, which form organs, which make systems, which make you. Be a part of building a digestive system and observe how food travels through the intestines. Observe how blood flows through the circulatory system when we simulate heartbeats. Experiment with your own respiratory system to discover your unique lung capacity. Construct a skeleton model to see just how unique the skeletal system is. It won't be until you come face to face with the digestive, circulatory, respiratory, skeletal and nervous systems that you'll truly see how amazing YOU really are!

Entering 4th or 5th grades
STREAM STUDY

How can you tell whether a stream is a healthy one? If the water looks dirty does that mean it's of poor quality an unsafe to drink? What kinds of organisms are present in freshwater streams? Can the presence of some organisms indicate how healthy the water quality is? What are the different types of habitats in a stream and what organisms prefer each one? We will answer these questions by rolling up our pant legs and wading through a campus stream! In this course we will learn how to test the quality of the water and will identify the fish, amphibians, crayfish, mussels, snails, and macroinvertebrates present and the role each group of organisms plays in stream ecology.