

Weekly Course Descriptions 2019

Week 1: June 3 - 7

- **Jedi's in Training (1st – 2nd graders) – *Shelley Patterson and Linzee Mooty***
Learn science, you must. Come battle the dark side with us through exploration of forces, chemical reactions, the power of light and more. When you leave, you'll be an experienced scientific, young Jedi.
- **Slip and Slime (3rd – 4th graders) – *Gina Watkiss***
Slippery, slimy, and even slurpy science... This class will be a mess of fun! Join us to study and create brand new slimy creations and concoctions. Your hands will turn green from making monster flesh and you'll watch ghostlike goop disappear before your eyes! Put on your goggles, prepare to get dirty and learn the "why" behind chemical reactions like a true scientist.
- **3D Printing (5th – 6th graders) - *SCORE (Southeastern Center for Robotics in Education) hosted***
Have you ever wondered how a 3D printer works? Or what material is used in the 3D printer? Students will spend the week learning how to use an online CAD system called Tinkercad. They will also learn how the 3D printer works, taking the objects from Tinkercad to the printer application, and then printing. All students will leave camp with their 3D printed model.

Week 2 – June 17 - 21

- **Seize the Sea (1st – 2nd graders) – *Danielle Hawkins and Heather Cowell***
Whales, Sharks, penguins and crabs... This is just the beginning of what the ocean has to offer. Dive in as we explore animal adaptations, the ocean's layers, and tidal currents. Grab your goggles as we begin our descent into the deep blue sea!
- **Super Sleuth (3rd – 4th graders) – *Julie Price***
This is no treat – our team at Science Matters has been tricked! A few clues were left behind but we need your help to successfully solve this mystery. Like real detectives, we'll gather and analyze the fingerprints and footprints and we'll study some invisible writing to help us crack this caper. Help us unravel the code and turn this mystery into a Case Closed.

- **Curious Curators (5th – 6th graders)- AU Museum of Natural History (AUMNH) ***
Why do we have natural history museums? Why are they important? How do they grow? From field to museum, you will explore our local biodiversity, make collections, and learn how to curate them. You will explore swamps, streams, forests, and grasslands for all plants and animals and even some fossils. You will have a new appreciation for the diversity of the region and the scientists that study it.
**This camp takes place in conjunction with the AU Museum of Natural History and is quite different from a traditional Science Matters class. Students will primarily be outside doing fieldwork side-by-side with museum staff and class time will take place within the AU museum.*
- **3D Printing (7th – 8th graders) - SCORE (Southeastern Center for Robotics in Education) hosted**
Have you ever wondered how a 3D printer works? Or what material is used in the 3D printer? Students will spend the week learning how to use an online CAD system called Tinkercad. They will also learn how the 3D printer works, taking the objects from Tinkercad to the printer application, and then printing. All students will leave camp with their 3D printed model.

Week 3: June 24 – 28

- **Snap, Crackle, Pop! (1st – 2nd graders) – Nicole Engleman & Heather Cowell**
Have you ever wondered what causes an electric shock, static cling, or what a live wire is? Come experience life as a negative charge as we explore the fundamentals of conductors, electricity, and circuits. Squishy circuits or snap circuits, either way we'll have an electrifying good time!
- **Things with Wings! (3rd – 4th graders) - Vicky Smith**
Look it's a bird, it's a bee, no! It's a bat!!!! This camp will involve looking at animals that fly. Students will spend time learning about birds, insects and bats. Through the use of biofacts (biological artifacts) such as feathers, mounted specimens, skeletons and even some live insects and live bats students will come to understand how the adaptation of flight benefits these critters. There will be crafts, games, and hikes outdoors looking for Things with Wings!! Live animals are provided by A-Z ANIMALS.
- **Bots of Fun! (5th – 6th graders) - SCORE (Southeastern Center for Robotics in Education) hosted**
Do you like problem solving? Do you love a good challenge? If yes, this is the week for you! Students will use Ozobots, Dash and Dot, and VEX robots to learn how to code robots as well as solve everyday problems. Students will learn how to program robots, add sensors, and use remote controls to control their robots.
- **Curious Curators (7th – 8th graders)- AU Museum of Natural History (AUMNH) ***
Why do we have natural history museums? Why are they important? How do they grow? From field to museum, you will explore our local biodiversity, make collections, and learn how to curate them. You will explore swamps, streams, forests, and grasslands for all plants and animals and even some fossils. Each student will keep a field journal where they will write the stories of their field experience. You will have a new appreciation for the diversity of the region and the scientists that study it.
**This camp takes place in conjunction with the AU Museum of Natural History and is quite different from a traditional Science Matters class. Students will primarily be outside doing fieldwork side-by-side with museum staff and class time will take place within the AU museum.*

Week 4: July 8 – July 12

- **Kids can Code! (1st – 2nd graders) – Tina Williams and Beth Bass**

You've heard of Hour of Code? What about an entire week dedicated to computer science and the art of coding? Have fun as you design and construct a maze and code a robot to navigate through it! You may create your own coding story or be a pirate and design a scavenger hunt to find the missing treasure! Whatever the challenge, fun will be had by all!

- **Making Waves (3rd – 4th graders) – Nicole Engleman**

Light and sound don't crash on the beach like ocean waves, but they are waves nonetheless. They are waves that have special properties and behave in their own special ways. Compare the speed of light and sound, see how light breaks apart, and hear how sound can change with the swing of an arm.

- **Diving into your Gene Pool! (5th – 6th graders) - Danielle Hawkins**

Ever wonder about your hair color? Eye color? Height? Join us to find out about the cells that make up our body and how DNA determines how we look. We'll build models of cells, DNA and will make our own aliens based off of traits.

Week 5: July 15 – July 19

- **Do you Dig it? (1st – 2nd graders) – Kristi Ramey and Aleesa Zutter**

What's the difference between paleontology and archeology? You will become a paleontologist and an archeologist as you learn about life in the past from bones, fossils, and artifacts you may find! Get ready to get dirty and have fun! Dig in and have a blast learning about our past!

- **Movement Unleashed (3rd – 4th graders) - Vicky Smith**

No, this isn't an exercise class or an army drill but it is a fun camp that will have kids up and moving. We will look at various modes of locomotion and how different adaptations allow animals to move around their environment. There will be many live animals from A-Z ANIMALS visiting camp to show off the way they move. Do they hop, swim, crawl or fly----frogs, fish, tarantulas and bats are just a few of the animals that will spend time at our camp. There will be crafts, games, animal demos and hikes around campus to reinforce the classroom lessons.

- **Off the Grid (5th – 6th graders) - Bruce Zutter**

What do wind, solar energy, and hydropower have in common? Researchers estimate that in the not-so-distant future 1/3 of the world will be powered by renewable resources. Explore solar ovens, solar panels, wind turbines and other means to power the world "Off the Grid" while you build and test your own creations.

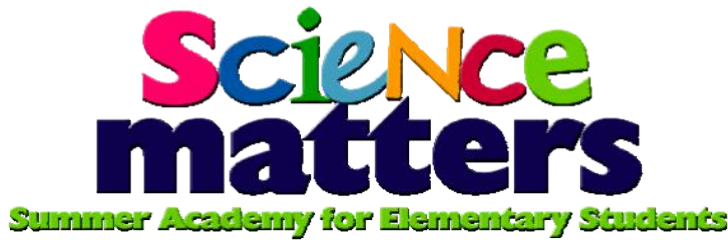
Week 6: July 22 – July 26

- **Full STEM Ahead! (1st – 2nd graders) – *Beth Bass***

Have you ever wondered what it would be like to be an engineer? Want to research and design bridges, catapults, hovercraft, and a platform of paper cups and cardboard that can support your own weight? This week we will explore fundamental principles of engineering and physics. We will also learn to collaborate and create while learning from our mistakes. The experience is joyful, the impact long-lasting.

- **Debugging Code (3rd - 4th graders) – *Kristi Ramey***

Did you know that just about everything has to be programmed? Phones, televisions, cars and more! Have you ever wondered what happens when that program goes wrong? This week we will have fun as we design and construct a maze and code Dash, the robot, to navigate through it using programming called Blockly! But what happens when the robot is not able to complete the maze? This is when you will use your debugging skills to help put Dash back on the right track!



Weekly Course Descriptions 2018

Week 1: June 4 - 8

- **Engineered for Fun (1st – 2nd graders) – Andrea Beall** Want to build a robot or create magic mixtures? What about designing an airplane that can fly high into the sky or your own boat to sail the open seas? Put on your thinking caps and prepare to experience a day in the life of an engineer as you research, invent, design, and build machines, structures, and other systems used all around you everyday.
- **Assembly Required (3rd – 4th graders) – Shelley Patterson & Aleesa Zutter** To analyze, create, design, and build – whether this refers to robots, bridges, video games, or working to advance the practice of medicine, that is the role of most engineers. Wearing a different hard hat each day, join us as we break down each specialty and explore this exciting career. We'll also discover the value of mistakes and how miscalculations lead to innovation!
- **Slip and Slime (5th – 6th graders) – Gina Watkiss** Slippery, slimy, and even slurpy science... This class will be a mess of fun! Join us to study and create brand new slimy creations and concoctions. Your hands will turn green from making monster flesh and you'll watch ghostlike goop disappear before your eyes! Put on your goggles, prepare to get dirty and learn the "why" behind chemical reactions like a true scientist.

Week 2 – June 11 – 15*

- **Oh What a Web * (5th – 6th graders) – AU Museum of Natural History (AUMNH)** Join us to explore Auburn University's Museum of Natural History through the lens of movement and energy through the ecosystem. From producers to consumers, students will learn how to collect, preserve, and study plant, invertebrate, and vertebrate specimens. Students will travel to area field sites for collecting specimens and study the local ecosystems. Get ready for some hot, dirty, and sweaty summer fun!

** June 11-15 is a bonus week for rising 5th/6th grade students only. BEFORE registering to take this class, students and parents must understand this course takes place in conjunction with the AU Museum of Natural History and is quite different from a traditional Science Matters class. Students will be primarily outside doing fieldwork side-by-side with museum staff and class time will take place within the AU museum.*

Week 3: June 18 – 22

- **Assignment: CODE ** (1st – 2nd graders) – Kenzie Strickert**

You've heard of Hour of Code... What about an entire week dedicated to computer science and the art of coding? Write the code to send 'secret' messages, build a maze, and even design a code for your favorite LEGO® creation. There's no homework but you'll be happy to use this newfound knowledge at home!

- **Sound Off!** (1st – 2nd graders) – Seth House**

Have you heard the news? If you love our feathered friends, join us as we'll get loud and examine the science behind a bird's call. Want to cover your ears? Don't worry – we'll also watch and learn to "see" that same bird's call! Want to see more? Get back on solid ground and create your own Play Dough – sounds like you'll have a shockingly good time in this class!

*** Rising 1st/2nd graders have 2 options this week. When registering, please select your first choice.*

- **Blinded by the Light (3rd – 4th graders) – Wayne Strickland**

Grab your shades as we prepare to uncover the properties of light and its connection to everyday items such as your eyeglass lenses or microscopes! Don't be shocked as we also explore conductors and insulators, as we'll study both optical and electrical engineering. Think you're the brightest student? Finish the week by creating and competing in an alarmingly fun engineering design challenge!

- **Can't Touch This (5th – 6th graders) – Ty Lucy**

True or False: Heat is the transfer of thermal energy. Not sure? Join us to investigate this hot topic as we study heat, temperature, and the concept of heat transfer as we tackle the challenge of building a house specifically designed to save a penguin! Think you've got it figured out? Help us predict our success with graphs, tables, and working through the necessary calculations and equations to keep our penguin safely on ice!

- **Ready, Set, Research! (7th – 8th graders) - AU Museum of Natural History (AUMNH)**

The Auburn University Museum of Natural History invites you to be part of the inaugural ALABAMA 200 Species project. The museum houses approximately 2 million specimens, many of which are native to Alabama. By focusing on these AL specimens and studying the process of natural history curation, a specimen you research may become a new official state species! Be prepared to dig in as you work side by side with museum staff doing fieldwork, classifications, and more!

Week 4: June 25 – June 29

- **Give me Five (1st – 2nd graders) –Linzee Mooty & Julie Price**
Zoology, Chemistry, and Physics are just a few of the things you'll study during this exciting week! Each day introduces a new science specialty and you'll have five times the fun as you examine plants like a botanist and track the weather like your favorite Meteorologist. Let the countdown begin and prepare to be amazed as we study the scientists and their contributions that affect us every day.
- **Beauty in the Beast (3rd – 4th graders) – Heather Cowell & Catina Day**
Animal lovers, this course is for you! Join us as we examine and study animal habitats, the relationship between predators and prey, plus the animal food chain. Learn how animals adapt to the continually changing environment and what we, as humans, can do to protect these beautiful creatures of the wild.

Week 5: July 16 – July 20

- **The Body Shop (1st – 2nd graders) – Aleesa Zutter**
It's inspection time! In this shop, you'll schedule a 5-day appointment to investigate and analyze the functions and structure of our body – the heart, lungs, bones, muscles, joints and brain. We'll build a model representing our discussions and display how all systems work and function together to become a "well-oiled machine".
- **Branching Out (3rd – 4th graders) – Dr. Bruce Zutter**
Look out your window and observe the trees – what makes them all different? Why do certain leaves change color and some stay the same? Examine the characteristics and variations of trees and learn how they tell us about weather and history. We'll introduce dendrochronology (the scientific method of dating trees based on tree-rings) and study the roots, the leaves, and everything in between!
- **Person of Interest (5th – 6th graders) – Danielle Hawkins**
What makes you "you"? Don't run away from this opportunity to examine and investigate the 9 systems of the body. Create balloon lungs, study the digestive track using a tennis ball with vegetable oil, and explore the skeletal structure with edible neurons. This course will definitely capture your attention!
- **Growing Greens and Gills (7th – 8th graders) – Stan Arington**
Aquaponics is the art of combining aquaculture (raising fish) and hydroponics (the soil-less growing of plants) that grows fish and plants together in one integrated system. Join us to create your own living ecosystem, tour a working aquaponics farm, and as the aquaponics process can grow a variety of food in our own community, you won't go away hungry!

Week 6: July 23 – July 27

- **Out of this World (1st – 2nd graders) – Heather Cowell**

Take a moment and look up - there is still so much to learn about space and the planets around us. This week we will explore everything from Earth to moon rocks to comets. Study the planets and how our solar system works. Spark your curiosity in this awe-inspiring class that is sure to appeal to every young space cadet.

- **911 – What's your Emergency? (3rd – 4th graders) – Danielle Hawkins**

Natural disasters occur all around the world. Tornados, hurricanes, earthquakes, and more will be studied as we simulate these events and examine the effect each one has on the community. We'll build a volcano and watch it erupt and model houses will be tested against strong winds and an unstable base. Students will also leave prepared as safety and precaution plans will also be constructed.

- **Curves Ahead (5th – 6th graders) – Nicole Engleman**

Constant acceleration? Velocity? If these terms make your head spin, join us as we study the properties of math, physics, and chemistry and learn how everything works together and keeps us straight! Buckle up and hold on as we study slopes, variables, and chart our course to a better understanding of the relationship between science in math and math in science.