Elementary School Modules

Reaching for the Stars: (Astronomy)
Astronomy: one of the earliest sciences ever studied by humankind. But it’s more than just stars and planets! What roles do black holes play? What actually makes a galaxy, a galaxy? In this module, Scouts will take a trip through the known universe! Beginning in our own solar system, they’ll navigate throughout the galaxies, discovering stars, asteroids, and even adventure deep into black holes!

Meet Your Earth: (Earth Sciences)
Our Earth is a rich history book! From its rocks to its oceans, Earth gives us a glimpse into its ancient past, but only if we look hard enough! In this module, Scouts will investigate the various parts of our planet by differentiating and recreating various rock formations, learning whether or not weather can truly be predicted, and by examining the deepest oceans and even the highest stars! Let’s meet our Earth!

It’s Not Magic, It’s Magnets: (Physics)
Magnets are pretty easy to understand — opposites attract, like repel. But their mysterious power doesn’t stop there! In this module, Scouts will analyze and be able to explain what makes a magnet, a magnet, and then will use a magnet’s unique force to create a NEW kind of force — an electromagnetic one! Did we mention Earth’s invisible force shield? Or levitation? May the magnetic force be with us as we observe and experiment with a magnet’s power and full potential!

Discovering Life on Earth: (Biology, microbiology)
It’s ALIVE! Scouts will be playing Dr. Frankenstein as they discover what it means to be alive! From microscopic cells to ecological systems, life is evolving all around us, all the time. In this module, Scouts will use pocket-scopes to take a closer look at cell structure, discover how energy is made and consumed, and research the vital roles that come together to create the biomes we live in. Let’s explore biology!

Get Under Your Skin: (Anatomy)
Head, shoulders, knees, and — organs? There is more to us than meets the eye! Let’s get under your skin and recognize what really holds you together! In this module, Scouts will identify the bones in our major skeletal system, assemble muscle groups, and design functional organs. They will then investigate our major power source — the brain — and will reconstruct our smallest yet strongest communicator, the neuron!

For more information, contact Kyle Tons, Denver Area Council STEM Scouts Executive at Kyle.Tons@scouting.org or 720-266-2144.
Middle School Modules

Criminal Case Files: (Forensic Science)
Crime Investigators use Forensic Science to help solve crimes in your community. There are three different branches of forensic science, and plentiful, exciting careers in each! In this module, Scouts will learn about Forensic Science as it relates to DNA, fingerprints, Graphology and Blood Spatter. Scouts will play detective and use forensic techniques, critical thinking skills and teamwork to solve a crime challenge.

That’s Showbiz, Baby: (Film production)
The Silver Screen has been fascinating audiences since the early 19th century. We think of the movie industry as compelling storylines, red carpets, popcorn and candy. But beneath the glamour, there is a whole world of scientific engineering and innovation that made all our favorite films possible. In this module, Scouts will focus on the “science” of movie making. They will discover the tools to create every element in filmmaking—from building their own pinhole cameras, engineering their own sound effects, to writing, directing, acting in, and “shooting” their own cinematic masterpieces. Lights, Camera, Action!

Spheros Robot Game Design: (Robotics)
What makes a game fun? How are games designed from the very core? Let’s dive into the code to find out! In this module, Scouts will learn all about the elements that make a game, and they’ll learn how to code a robot along the way! They will apply their skills to design their very own robot game and will code the program that powers it.

The Chemistry of Combustion: (Chemistry)
Chemistry is the wondrous study of all the things and reactions around us. Have you ever lit a candle or sat around a campfire and wondered what it was that made these objects burn? In this module, Scouts will learn all about combustion and what is necessary for these reactions to occur. They will apply laboratory skills to observe and analyze different reactions and use the engineering process to design an experiment of their own.

APPventures: (Mobile App Technology/Development)
The Mobile App Development module will engage Scouts in important aspects of the app design process. Scouts will be encouraged to plan for the creation of an app by exploring purpose, functionality, and design. They will build paper and digital prototypes, gain feedback from peers, and make changes to improve their designs before using App Lab by Code.org to create final versions of their apps. Scouts will also experience augmented reality (AR) and be given an opportunity to create an AR experience of their own. Throughout the modules, Scouts are encouraged to use both traditional and digital material as they design, test, and create their apps.