



STEM Outdoors with GSCTX

Experience STEM in the outdoors. Explore different environments, plant life and wildlife while learning about how they all work together. Earn one or all 12 charms to wear proudly on your vest or sash. Once you earn your first charm, be sure to pick up the patch as well. Be on the lookout for events that will help you earn charms!

To earn a charm: complete the requirements by leading your own adventure. Below are suggestions to help guide you on your way to having fun with STEM in the outdoors.

The World Around You:



- **Ecosystems:** Learn about what an ecosystem is and explore one ecosystem. Try out an aquatic ecosystem – marine, freshwater, or human-made. Or investigate terrestrial ecosystems – grasslands, forests, forest health, soils.



- **Plant Study:** Learn about how plants grow and the habitats that different plants grow in. Experience a forest, desert, marsh or tundra and learn about the plants that grow there. Learn the different parts of a plant and how each part works as a whole to make a plant healthy and strong.



- **Atmosphere:** Investigate the atmosphere. What is the atmosphere? What is it made of? Learn about weather, wind patterns, air quality, night skies or any other event that happens in our atmosphere.

The Animals Around You:



- **Native Species:** Discover a native species in your area. Learn about its habitat and why that species thrives there. Look into if that species is endangered or threatened. Discover what conservation efforts are doing to preserve native species and their habitats.



- **Reptile Life:** Learn about what it takes to be a reptile. Investigate where reptiles live and how they have adapted to their environments. Discover a reptile from your area and why it lives there. Look into the past at ancient reptiles.



- **Bird Life:** Investigate how birds are unique from other creatures. Find out ways they are similar. Learn about feathers and flight. Discover what bird species live in your area and if it migrates. Search for ancient birds.



- **Fish Life:** Find out what lurks below! Investigate the anatomy of a fish. Learn about what happens in the life of a fish. Pick one species of fish and learn where it comes from and how humans have impacted the life of that fish species. Research ancient fish.



- **Amphibian Life:** Define what is an amphibian. Discover how an amphibian is different from a lizard and a fish. Investigate where amphibians live and why they live there. Discover an amphibian species near where you live.



- **Mammal Life:** Describe what it takes to be a mammal. Find areas where mammals live. Learn about the wide variety of mammals. Discover the different ecosystems in which mammals live. Take a look into ancient mammals.



- **Insects and Spiders:** Keep an eye out for creepy crawlies! Examine the different types of creatures that are small. Discover the differences there are in spiders, beetles, insects and other ground dwellers. Go back in time to look at prehistoric bugs!

You and Your Impact:



- **Energy:** Recognize where energy comes from. Learn the differences between renewable and non-renewable energy sources. Try your hand at creating an energy source and using it to power a toy or model. Find out ways you can conserve energy and why it is important. Learn about how energy consumption plays a part in the greater ecosystem.



- **Green at Home:** Bring nature home! Uncover ways to bring the natural world in. Find out about native plants and use them to plant a garden. Understand how composting works and give it a try. Learn about recycling programs in your area and how they work. Try to reuse an item that cannot be recycled. Take a look at your carbon footprint and why it is important to know about.