





# STEAM

SCIENCE  TECHNOLOGY  ENGINEERING  AVIATION  MATH

# ahead



Welcome to our STEAM ahead program! We are offering the same great STEM education materials as previous years with some fresh updates. It's hard to believe we are entering our 9<sup>th</sup> year of this great homeschool program!

Our sessions run 10:00am-3:30 pm once per month starting in September and ending in January. The day consists of three classes that cover a common grade level topic and build on each other, so it is important students attend the full day. In general, each day will cover the equivalent of a typical week's worth of science lessons. If your student attends all 5 sessions it will cover the equivalent of a semester's worth of science lessons!

Each month, students may have assignments they can complete at home with parental support. This provides a great opportunity to discuss the day's activities with your child, and further solidify their learning of the material. Some of the assignments are follow-ups to the day's activities, and some are an extension of classroom learning.

The cost per session (full day) is \$200 and children need to bring a sack lunch. If you register and pay-in-full for all five sessions, you will receive a 10% discount! Registration forms are available online at [www.akchallenger.org](http://www.akchallenger.org). You will find them under the Homeschool Tab.

If you have questions about any of the activities, content, or standard's being covered, please feel free to contact me.

Sincerely,

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**Grades 1-2 Science S.T.E.A.M. ahead Units**  
 (Tuesdays, 10am-3:30 pm) Engage, Explore, Explain, Elaborate, Evaluate



Unit	Dates	Topic and Activity
<b>Session 1</b> <b>Are You Green?</b>	9/4/2018	Observe Plants in a Local Environment
		What Makes a Plant a Plant?
		Compare and Contrast Different Plants and Plant Art
<b>Session 2</b> <b>Animal Survivors</b>	10/2/2018	Observe Animals in a Local Environment
		Animals Need Food, Water, Air and Shelter
		Animals and Their Habitats
<b>Session 3</b> <b>Who Eats Who?</b>	11/06/2018	Animals Eat Animals and Plants (Food Web)
		Predator/Prey Relationships
		Observe Local Conditions that Impact Animals
<b>Session 4</b> <b>Waves: Light and Sound</b>	12/04/2018	Motion and Forces that Make Things Move
		Use the Force! Changing Motions, Pushes and Pulls
		Moving with Magnets
<b>Session 5</b> <b>Your Turn to be a Scientist!</b>	1/08/2018	Sizing Things Up: Measurements and Tools
		Are You Scientist? What Kind Would You Like to Be
		Experimental Design: What Can You Do? Design and Carry Out Your Own Investigation.

**Grades 3-4 Science S.T.E.A.M. Ahead Units**  
 (Tuesdays, 10am-3:30pm) Engage, Explore, Explain, Elaborate, Evaluate



Unit	Dates	Topic and Activity
<b>Session 1</b> <b>Earth Systems</b>	09/04/2018	Using Maps to Identify the Physical Features of the Earth
		Volcanos and Earthquakes
		Solutions Humans Use to Reduce the Impact of Natural Disasters
<b>Session 2</b> <b>Animal Survivors</b>	10/02/2018	Survivor: Tactics and Habitats for Animals
		Relationships Between Physical Characteristics and Habitats
		Characteristics That Let Plants and Animals Survive in the Arctic
<b>Session 3</b> <b>What Do Cells, Webs, and Energy have in Common?</b>	11/06/2018	Cells: We All Have Them. We All Need Them. What Do They Do?
		Living vs. Non-living Things and Energy Transfer
		Food Webs of Alaska
<b>Session 4</b> <b>Rocks, Water, and Ice Shape Our World</b>	12/04/2018	Water Cycles
		Identifying Alaskan Land Features
		Erosion and Shaping the Landscape
<b>Session 5</b> <b>What's up with the Weather?</b>	01/08/2018	Tools and Technology for Weathering the Weather
		Can You Predict the Weather?
		Our Changing Climate

**Grades 5-6 Science S.T.E.A.M. ahead Units**  
 (Tuesdays, 10am-3:30 pm) Engage, Explore, Explain, Elaborate, Evaluate



Unit	Dates	Topic and Activity
<b>Session 1</b> <b>Food for Thought and Energy</b>	09/04/2018	Food Chains and Webs-What's the difference?
		Energy Transfer and Conservation Through the Web
		Organisms and Physical and Chemical Changes to the Environment
<b>Session 2</b> <b>Animals and Functions</b>	10/02/2018	Dichotomous Keys and How to Use Them
		Animal Behavior: Migration, Communication Adaptation and Hibernation
		Identification and Function of Human Organs
<b>Session 3</b> <b>Rocks: Do You Take Them All for Granite?</b>	11/06/2018	The Rock Cycle and Identifying the Three Main Classes of Rocks. Careers in Geology
		Tectonic plate Movement and Changes on the Earth
		Earthquakes and Volcanoes and Changes in Topography
<b>Session 4</b> <b>Citizen Scientists: How Can You Impact Our World Through Work?</b>	12/04/2018	Local Environmental Concerns
		Careers in Science-Pick One, Be One!
		Design a Fix
<b>Mars and Beyond</b>	01/08/2018	Compare and Contrast Mars to Earth Explain How the Existence of Extremophiles Hints to the Possibility of Life on Mars
		How to Take Off and Land on Mars
		Identify and Analyze Evidence of Water on Mars
		Expedition Mars Mission