



## Idaho Resources to Support Science, Technology, Engineering, and Math (STEM) Learning

### Idaho Early Learning Guidelines

Adapted from the work of a number of states, national experts, and professional organizations, a representative group of Idaho educators and professionals generated the *Idaho Early Learning eGuidelines* utilizing the latest research in early childhood development. Idahoans and national experts revised and refined the product to meet the unique needs and concerns of children, parents, and stakeholders in our state. For those who care for and teach young children, the *Idaho Early Learning eGuidelines* is a resource designed to assist in guiding children's development and learning. **Parents can use this resource to see what young children should be learning about math, science, and language from birth to age 8.**

Although there are several guidelines pertaining to early care and targeted to child care providers, [Domain 4: General Knowledge](#), relates directly to STEM concepts:

### Mathematics and Numeracy

Mathematics and numeracy skills include skills for understanding and using numbers and quantity, special relations, numerous mathematical operations, measurements, and properties of ordering. These skills are essential for children to effectively navigate mathematical situations that arise in everyday life.

 [Goal 39: Understanding Numbers and Number Systems](#)

 [Goal 40: Understanding Processes of Measurement](#)

 [Goal 41: Understanding Organization and Problem Solving](#)

### Science

Scientific thinking and knowledge skills include observation, building an understanding of cause and effect in the natural world, and making predictions. It is the development of scientific thinking that helps children apply and test their knowledge through methodical inquiry and verification. By acquiring scientific knowledge, children gain an understanding of and information about their surroundings.

 [Goal 43: Cause and Effect Relations](#)

 [Goal 42: Observing and Collecting Information by Exploring](#)



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The following resources are targeted to school-age children:

#### 4-H Robotics

The 4-H Robotics program is part of the continuum of robotics activities known as Idaho Robotics Opportunities for K-12 Students (Idaho ROKS). 4-H Robotics is essentially a set of engineering activities designed to reach new, commonly underserved youth introducing youth (ages 8-14) to the LEGO Robotics System. While it is a stand-alone program suitable for traditional 4-H club activities, it can also be adapted for non-traditional 4-H programs such as afterschool programs. The 4-H Robotics Program is coordinated through the County 4-H Office.

Location: Moscow

Target Audiences: K-6th Grade, 7-8th Grade, Females, Underrepresented Minorities, Persons with Disabilities

Length of Event: The program is coordinated by county 4-H staff who determine the time, dates, and duration of the programs.

Dr. Tim Ewers (885-4080)

[tewers@uidaho.edu](mailto:tewers@uidaho.edu)

#### Be Outside: Idaho Children in Nature

The Idaho Children and Nature Network is a coalition of diverse organizations and agencies united in the common cause of empowering all Idahoans to lead healthy lives by developing a sense of place in Idaho's outdoors.

Target Audiences: K-6th Grade, 7-8th Grade, 9-12th Grade, Underrepresented Minorities, Community  
Idaho Children and Nature Network

Meggan Laxalt Mackey (378-5796)

[beoutsideidaho@gmail.com](mailto:beoutsideidaho@gmail.com)

<http://www.visitidaho.org/children-in-nature/>

#### Boise State University GK-12 – Graduate STEM Fellows in K-12 Education

This NSF-funded project focuses on using local and regional science issues to stimulate learning in the K-12 community. Graduate GK-12 Fellows from Boise State's departments of Biology and Geosciences are available to the K-12 community to lead educational activities at the learning centers or in school classrooms through outreach visits. Fellows are also available to work with after school science clubs or special interest groups.

Location: Boise - BSU, Boise WaterShed, Foothills Learning Center

Target Audiences: K-6th Grade, 7-8th Grade, 9-12th Grade, Graduate Students

Length of Event: Program began summer 2008 and will continue with NSF funding through spring 2013

Eligibility Criteria: Any class/group can request to work with K-12 Fellows.

Karen Viskupic (426-3658)

[karenaviskupic@boisestate.edu](mailto:karenaviskupic@boisestate.edu)

<http://gk12.boisestate.edu>



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### **FIRST Robotics**

Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

Target Audiences: K-6th Grade, 7-8th Grade, 9-12th Grade, Females, Underrepresented Minorities, Persons with Disabilities

Length of Event: FIRST Robotics programs are year-round after school/in school activities for K-12 students. Competitions are through the month of December for FIRST Lego League (FLL) with the Championship in January. FIRST Tech Challenge competition is during Jan.

Award Amount: Awards are to teams across the programs. \$11 million in scholarships for high school age participants of FIRST Robotics Competition

Richard Anderson, Regional Director FIRST (709-5076)

[rimrock43@gmail.com](mailto:rimrock43@gmail.com)

[www.usfirst.org](http://www.usfirst.org)

### **Idaho Robotic Opportunities for K-12 Students (ROKS) Junior FIRST LEGO league (Jr. FLL)**

Junior FIRST LEGO League (Jr.FLL) is the first program in the continuum of robotics activities called Idaho Robotics Opportunities for K-12 Students (Idaho ROKS). In Jr.FLL, youth, ages 6-8, learn to work together in teams to research and learn about real-world topics in science and engineering. Teams of up to 6 children and an adult mentor receive a mini challenge, based on the annual FIRST LEGO League (FLL) research project. Using an open-ended LEGO building set, the youth work together to design a model depicting an aspect of the year's challenge. Children spend approximately one month exploring, investigating, designing and building a model made with LEGO bricks. In conjunction, teams create a "Show Me" poster that depicts the teams' experience during this process through drawings and words. Teams have the opportunity to present their models and posters to family and friends at Jr.FLL Exhibitions commonly associated with FLL tournaments.

Location: Moscow - FIRST LEGO League tournaments, which occur in December and January in several locations around Idaho.

Target Audiences: K-6th Grade, Females, Underrepresented Minorities, Persons with Disabilities

Length of Event: October-January, annually

Dr. Tim Ewers (885-4080)

[tewers@uidaho.edu](mailto:tewers@uidaho.edu)

### **K-12 Connection**

K-12 Connection is a website that features STEM outreach activities available to students, families and teachers. The site also includes a wide array of activities and links to programs and activities that support science, technology, engineering and math learning.

Location: Boise

Target Audiences: K-6th Grade, 7-8th Grade, 9-12th Grade, Females, Underrepresented Minorities, Low-Income and/or First-Generation College Students , Persons with Disabilities, Community



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# Have fun with mATH & SCIENCE

This is an ongoing event  
Margaret Scott (426-5789)  
Boise State University College of Engineering  
1910 University Drive, Boise, ID 83725-2100  
[margaretscott@boisestate.edu](mailto:margaretscott@boisestate.edu)  
<http://coen.boisestate.edu/K-12connection/home.html>

## **MICRON Hands-on STEM Lessons**

Employee teams present Micron-developed lesson plans using hands-on activities to reinforce the math, science, engineering, or technology concepts students are studying in the classroom. Lessons are aligned with the National Science Content Standards. Lessons can be viewed online, [www.micron.com/k12](http://www.micron.com/k12).

Location: Boise - Available throughout the Treasure Valley  
Target Audiences: K-6th Grade, 7-8th Grade, 9-12th Grade  
Cost to Attend: No cost  
Alecia Baker (368-5933)  
[arbaker@micron.com](mailto:arbaker@micron.com)  
<http://www.micron.com/k12>

## **Micron Technology: Math Fun d'Mentals**

Math Fun d'Mentals is a kit that provides the planning materials, activities, and manipulatives for school parent organizations to host family math events. Parents and their children engage in fun and enriching mathematical activities at their schools.

Available in the Treasure Valley through Micron Technology and statewide through the State Dept. of Education Math Initiative.

Target Audiences: K-6th Grade, 9-12th Grade, Parents  
Length of Event: ongoing kit checkout  
Alecia Baker (368-5933)  
[arbaker@micron.com](mailto:arbaker@micron.com)  
<http://www.micron.com/k12/mathfundamentals>

(The material for this document was adapted from the Idaho STEM Pipeline website. There are more resources there for middle school to college age students. <http://www.idahostem.org/> )



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