



HOWTOSMILE.ORG
ALL THE BEST SCIENCE & MATH ACTIVITIES

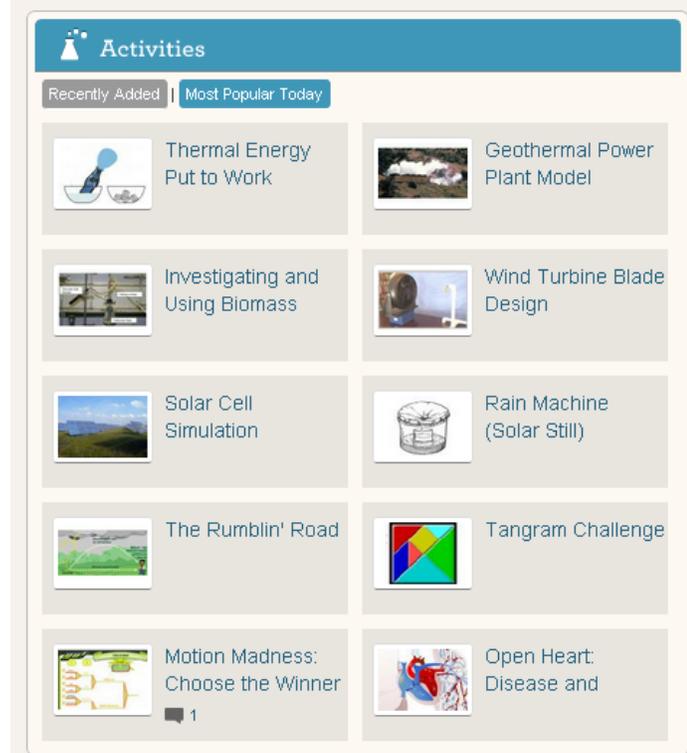
www.howtosmile.org

Website Description: SMILE (Science and Math Informal Learning Educators) is a collection of science and math activities designed for school aged children with lessons and activities gathered together in one place from various online sources. Though in their FAQ they state that the activities are targeted at those in non-school settings (like after school programs, museums, or zoos) they could also be used by teachers in the classroom.

The three steps laid out to use SMILE are to make an account, search SMILE, and create a list. In addition you can contribute to the website with reviews, comments on lessons, and suggesting additional resources. According to the website, "Together we're gathering the best STEM education materials from the web, and encouraging educators to both use and contribute to the growing collection."

Ways to use this website:

1. You can create an account in order to keep lists of the activities you use or want to use, but you can also browse activities and other member's lists without creating an account.
2. You can search for activities based on your own key word searches, advanced searches, chemical searches, or explore their list of recently added or most popular today activities



3. When you open activities you will see a brief description, materials needed per student, subject area correlation, appropriate audience for the activity, documents needed, a link to the site that hosts the actual activity, and comments from other SMILE members about the activity.

Standards Correlations: This is not intended to be an exhaustive list, but a sampling of state and national standards that the site may be used for.

Standards for the 21st-Century Learner

- 1.3.4 Contribute to the exchange of ideas within a learning community.
- 3.1.2 Participate and collaborate as members of a social and intellectual network of learners.
- 3.1.4 Use technology and other information tools to organize and display knowledge and understanding in ways that others can view, use, and assess.
- 4.3.1 Participate in the social exchange of ideas, both electronically and in person.

Nebraska Standards Science

SC K-12.1 Comprehensive Science Standard – Inquiry, the Nature of Science, and Technology
Students will combine scientific processes and knowledge with scientific reasoning and critical thinking to ask questions about phenomena and propose explanations based on gathered evidence

SC K-12.2 Comprehensive Science Standard – Physical Science
Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Physical Sciences to make connections with the natural and engineered world.

SC K-12.3 Comprehensive Science Standard – Life Science
Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.

SC K-12.4 Comprehensive Science Standard – Earth and Space Sciences
Students will integrate and communicate the information, concepts, principles, processes, theories, and models of Earth and Space Sciences to make connections with the natural and engineered world.

Math

Math standards would vary based on the grade level.

Curricular Connections: Teachers can use the activities linked on SMILE to incorporate more hands on activities into their lessons.

Tip: Use the advanced search to find activities geared toward a subject area & age group

The screenshot shows the 'Advanced Search' interface. At the top, it says 'Choose as many or as few customizations to your search as you would like.' Below this are 'Clear Form' and 'Submit' buttons. The 'General Search Term' is 'Cells'. There are three main filter sections: 'Basic', 'Age Range', and 'Resource Type'. The 'Basic' section has checkboxes for 'Earth and Space Science', 'Engineering and Technology', 'Life Sciences', 'Mathematics', 'Physical Sciences', 'Chemistry', 'The Nature of Science', and 'The Nature of Technology'. The 'Age Range' section has checkboxes for '4-6 years old (PreK-K)', '6-8 years old (grades 1-2)', '8-11 years old (grades 3-5)', '11-14 years old (grades 6-8)', '14-18 years old (grades 9-12)', and '18 years and older (adult)'. The 'Resource Type' section has checkboxes for 'Android Mobile App', 'Demonstration', 'Exhibit', 'Experiment/Lab Activity', 'Field Trip', 'Game', 'iOS Mobile App', 'Lesson/Lesson Plan', 'Model', and 'Simulation'. There is also a 'Language, Standards, and Assessments' section with checkboxes for 'Arabic', 'Basque', 'Chinese', 'Croatian', 'Includes alignment to state and/or national standards', and 'Includes assessments of student learning'. Three large grey arrows point from the right towards the 'Basic', 'Age Range', and 'Resource Type' sections.

You can further narrow results by cost of materials, learning time, specific subject, prep time, resource type, language (Spanish and English in above result), and source institution.

Embedded Librarian Tips:

1. There is a SMILE Widget available that you could link on your webpage. You could have all Life Sciences results listed for the biology teachers for example.
2. Sign up for the newsletter on homepage

Subscribe to the howtosmile.org newsletter

Your email here

Set up your account and start exploring today!

Find the Best Science & Math Activities from some of the top leaders in science education

From The Smile Blog

10 JUL **Crash Course on Creativity**
by Deborah Lee Rose [Add a comment](#)

Creativity is not just a trait we're born with, but a skill that can be taught and learned, says neuroscientist Tina Seelig. Seelig teaches young scientists and engineers to develop and heighten their creativity at the Stanford Technology Ventures Program, the entrepreneurship center of Stanford University's School of Engineering. In her new book, *InGenius: A Crash Course on Creativity*, she is out to inspire all her readers, including new and experienced STEM educators, to infuse their learners' experiences with much more creativity.



"Creativity fuels great scientific discoveries," and can engage learners of all ages, backgrounds and skill levels, says Seelig. She encourages brainstorming as one of the most valuable creativity techniques that can be used in both professional and academic settings. "Brainstorming is the exploration phase of a project, a key to enhancing and expressing your imagination," she explains.

Recent Posts

- [National Fossil Day Contest](#)
- [Crash Course on Creativity](#)
- [Ancient Egypt](#)
- [Science in the Stacks](#)
- [Dig into Dinos](#)

3. Follow SMILE blog linked on the homepage

4. Say you are looking for an activity on ratios and proportions for 8th graders, you do a search, and come across this "How Much Is a Million" activity. This is just the top of the page that you would see on SMILE, including the link to the original activity posted on Illuminations

How Much Is a Million?



★★★★★

Description

This lesson focuses learners on the concept of 1,000,000. It allows learners to see firsthand the sheer size of 1 million, while at the same time providing learners with an introduction to sampling and its use in mathematics. Learners use grains of rice and a balance to figure out the approximate volume and weight of 1,000,000 grains of rice. This lesson guide includes questions for learners, assessment options, extensions, and reflection questions.

Source Institution

NCTM Illuminations

Keywords

[million](#) [sampling](#) [rice](#) [volume](#)
[weight](#) [rate problem](#) [proportion](#)
[ratio](#) [extrapolation](#)

Quick Guide

Preparation Time:	Under 5 minutes
<input checked="" type="checkbox"/> Learning Time:	45 to 60 minutes
Estimated materials cost:	\$1 - \$5 per group of students
Age Range:	Ages 11 - 14
Resource Types:	Activity Lesson/Lesson Plan
Language:	English

Materials List (per group of students)

- Small cups
- 1 larger cup or glass jar
- Rice
- [Dollar Diner \(optional\)](#)

This activity would work for Nebraska math standard MA 8.1.3.e *Solve problems involving ratios and proportions (e.g., $\frac{x}{5} = \frac{10}{17}$)* as well as MA 8.3 *Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.*

For classes that are on teams, this activity can go even further because toward the bottom of the activity on the Illuminations website there is an extension activity having to do with national debt which would apply to the social studies curriculum *SS8.3.5 Students will explain the structure and operation of the United States economy and the role of citizens as producers and consumers*. This would be an opportunity to help create an interdisciplinary lesson and then perhaps have students even come into the library to research the national debt.

Potential Pitfalls – Because SMILE was created for people working with students outside of the typical classroom setting, standards are not listed on their site. They may be listed when you link to the original host of the activity depending on where that is. Also, because of the initial purpose, some activities may be better suited to smaller groups.

Additional Resources –

[How to Smile](#)