National Institute of Science & Technology (NIST) Metric Program

How to assess - Type the following – "NIST Metric"

On the left of the page Go to SI Education and Training

Under SI Education and Training Consider the following:

Education Resources on the Metric System (SI)

This collection of resources can be used to enrich classroom curriculum and reinforce student learning. These resources are helpful to students as they become familiar with the metric system and learn more about SI basics. This site has numerous educational materials published by NIST that can be downloaded and freely reproduced. Contact the NIST Metric Program regarding handouts available in bulk so that each student can receive a copy.

The International System of Units (SI), commonly known as the metric system, is the international standard for measurement. SI use in product design, manufacturing, marketing, and labeling is essential for United States industry's success in the global marketplace. SI measurement system familiarity and fluency must be developed along the Science, Technology, Engineering, Art, and Mathematics (STEAM) career pipeline to produce an U.S. engineering workforce with this essential 21st century skill.

Metric Program Training

Looking for opportunities to expand your International System of Units (SI) subject-matter knowledge and skills? Ongoing opportunities throughout the year are available to fit your schedule. Explore technical training and professional development opportunities offered by the NIST Metric Program.

Resources

- NIST Metric Trivia Quiz – How much do you know about the metric system (SI)? Try the NIST Metric Trivia Quiz online or use the Alexa skill to test your knowledge and be on your way to thinking metric!
- SI Basics – Learn more about the 7 base units that define 22 derived units with special names and symbols
- SI Teacher Kits Available for Educators – Obtain a free set of metric education resources for your classroom
- Education Resources on the Metric System (SI) – A collection of resources to enrich classroom curriculum and reinforce student learning
- Occupational Metric System Training – A workbook series containing educational information that apply metric measurements within a variety of occupations
    - Industries in Alphabetical Order

  - Goods Providing Industries
  - Services Providing Industries
  -
- Communication Resources for Science, Technology, Engineering, Art, and Mathematics (STEAM)
  - Writing with SI (Metric) Units – Find quick answers to SI questions that arise while writing and reviewing technical documents
  - NIST SP 1265 - Sketchnoting Science: How to Make Sketchnotes from Technical Content (PDF)
- Presidents and Measurements – Measurement education resources celebrating Presidents' Day national holiday
  - Presidential Measurement Timeline
  - Presidential Height Graph (PDF)

- **The NIST Do-It-Yourself Kibble Balance (Made with LEGO® Bricks!)**
  The NIST "D.I.Y." Kibble balance is a science project that teaches the principles used in the international kilogram redefinition effort. Students, teachers and science enthusiasts can build a working demo Kibble balance capable of performing mass measurements with as little as 1 % uncertainty, making them more accurate than some commercial jewelry, cooking, and postage scales.
  - **A LEGO Watt balance: An apparatus to determine a mass based on the new SI** (Instructions)
  - **How to Build Your NIST D.I.Y. Watt Balance** (Video)

The Measurement League: Guardians of the SI

The Measurement League: Guardians of the SI are superheroes dedicated to the fight against uncertainty, imprecision, and inaccuracy and to improving the quality of our lives and the things we build, using their incredible powers of measurement to perform amazing feats of science and engineering. This comic book-style video animation series has been developed to help middle school students learn about the 7 SI base measurement units. Videos are available on the NIST YouTube Channel.

Episode 1: Desperate Measures!
The SI Superheroes use the power of measurement to help a stranded soccer player get home. There are three more Episodes

Highlights

SI Teachers Kit: Obtain a free set of metric education resources for your classroom by contacting TheSI@nist.gov (include your name, school, subject, grade level, phone number, and mailing address).

Professional Development and Award Opportunities

NIST Summer Institute for Middle School Science Teachers

The National Institute of Standards and Technology (NIST) Summer Institute for Middle School Science Teachers is a two-week workshop in July for middle school science teachers featuring hands-on activities, lectures, tours, and visits with NIST scientists and engineers in their laboratories. See NIST Website on how to apply. Application process and details and deadlines are described on the Summer Institute program webpage. Applications must be submitted through your school district or private school administration.

U.S. Metric Association-Blake Family Foundation Metric Awards. The U.S. Metric Association (USMA) has partnered with the Blake Family Foundation to offer two awards to increase awareness and usage of the International System of Units (SI) in the United States. Applicants are asked to explain their efforts to promote metric in the United States. Teacher and High School Students can apply; $2,500 to a student and $500 to a teacher. Visit the United States Metric Association site – USMA.org

Time Could be Saved:

"Much more important, though, is the time that could be saved if students did not have to be drilled in the fractions necessary to cope with the customary system. Estimates varied, but mathematics teachers said that in elementary school they spend from 15 to 25 percent of their class time driving home the details of adding, subtracting, multiplying, and dividing common fractions. "

They believe much of this is unnecessary. If the metric system, with its simpler decimal relationships, were taught, they could rapidly give their pupils the basic principles of fractions and then move on to other useful aspects of mathematics.

Time can be saved simply by having to teach just one system of measurement. Example: Teachers in Japan use one system of measurement – The Metric System - while the United States teaches two systems of measurement – Metric and customary. "

How do I get a metric only ruler?

Metric rulers are available from many retail vendors, but most include both customary and metric. What you need is a metric only ruler to use to teach metric in your classroom. These are harder to find. USMA.org offers a quality metric only ruler. A plastic 25 cm (250 mm) Ruler, marked in millimeters on one side, and centimeters on the other side.

Go To: USMA.org

One Key Point to teaching metric to small children. "***Never convert between the customary system and the metric system"***.