SC Metric Week October 9 – 15, 2016, Governor’s Proclamation

September 29, 2016  Please Distribute Proclamation & Activities for Students

Dear District Leaders and/or Math & Science Coordinators:

Celebrating Metric Week in South Carolina 2016 (October 9-15) is a very important opportunity for K-12 students. An announcement at each school in your district and encouragement of metric system activities during and after Metric Week would be an excellent idea. (Some easy-to-use ideas on celebrating Metric Week are available online at: www.artsandsciences.sc.edu/cse (Click on Center for Science Education – College of Arts and Sciences Then Programs then Metric) or http://scacademysci.org (click on South Carolina Academy of Science - Founded 1924) then click on Metric top of page.

Also USMA Site www.us-metric.org is a good site for information.

As you know very well, companies (which will eventually employ many of our students) are gradually producing products to metric system standards. This means that the jobs of tomorrow will require employees to be able to use metric units. The Metric System has become more prevalent in U.S. society. The use of metric measurements includes areas such as global warming when referring to metric tons of CO2 emissions and in military deployments using kilometers. In sports such as track and field, cycling, and The Olympics are all metric. Additionally, package labeling (especially beverages) express the contents in metric. In healthcare, blood pressure, cholesterol levels, glucose measurements, prescription and over the counter medicines and dietary supplement dosages are all metric. U.S. consumers are becoming more familiar with grams and milligrams through information provided on mandatory nutritional labeling. The South Carolina Metric Proclamation is distributed to all schools in South Carolina, public and private, and is recommended and approved by the South Carolina Academy of Science (SCAS) and coordinated with the Center for Science Education at USC and the Office of Metric Programs at the National Institute of Standards & Technology (NIST), part of the U.S Department of Commerce. Special thanks goes to Governor Nikki R. Haley for her support of this worthwhile endeavor.

Sincerely,

Don Jordan, USC

Check out the USMA & National Institute of Standards (NIST) Metric Programs at www.us-metric.org & www.nist.gov/metric It will be FUN! and others at: http://www.artsandsciences.sc.edu/cse click on Programs then Metric.

Teachers- these sites have something for all grades!

We encourage your students to visit www.MetrologyCareers.com, where they can learn about careers in Metrology (measurement science). Currently, over 25% of the metrology workforce is eligible to retire.

Key Teaching Point:

One Key Point to teaching metric to small children. “Never convert between the customary system and the metric system”. When teaching metric pretend you only know metric. Do not show examples like a meter is about a yard. Show instead that a meter is about the length of a baseball bat or the distance from the floor to the center of a door knob.
WHEREAS, the metric system is a universal, decimal-based system of measurement; and

WHEREAS, based on a system developed in France in the late 18th century in an effort to standardize weights and measures throughout that country, the metric system was authorized for use in the United States by Congress in 1866; and

WHEREAS, the development of the metric system as an international standard of trade has contributed to advances in global commerce, technology, and science; and

WHEREAS, National Metric Week calls attention to the educational and economic benefits of using the metric system.

NOW, THEREFORE, I, Nikki R. Haley, Governor of the great State of South Carolina, do hereby proclaim October 9-15, 2016, as

SOUTH CAROLINA METRIC WEEK

throughout the state and encourage all South Carolinians to learn more about the metric system.

NIKKI R. HALEY
GOVERNOR
STATE OF SOUTH CAROLINA
SUGGESTED YEAR-ROUND METRIC ACTIVITIES

TO START DURING

SOUTH CAROLINA METRIC WEEK

OCTOBER 9 - 15, 2016

1. Have a school Open House or Parents’ Night sponsored by the Science and Mathematics Departments and include a session on “Why we need to teach metric first”.

2. Devise a Metric Fair for your school with all metric events. Create a Metric Contest, i.e - Crossword Puzzles. Have awards for the winners.

3. Write articles for the school or local newspaper promoting the use of metric measurement.

4. Have the Science and Math Departments plan a metric in-service session for the school faculty.

5. Metric Survey -- Conduct a survey of the student body and families of students to determine:
   • What people know about the metric system.
   • How people feel about the ongoing conversion to metric.
   • Reasons given in favor of conversion.
   • Objections given by those opposed to conversion.

6. Metric Center -- Collect and catalog recent, significant articles, books and pamphlets on the Metric System to serve as reference materials.

7. Shopping Assignments -- Choose a product line such as food, cosmetics, drugs, hardware, medical devices or sports equipment, and shop for items in that product line which carry labels or descriptions in metric units. Report findings to the class.

MULTIDISCIPLINARY PROJECTS/ACTIVITIES

8. ART -- Design posters and bulletin boards to illustrate the Metric System. Make up cartoons to illustrate the humorous aspects of metric conversion. Make a mural of the history of the Metric System. Create Metric Songs. Most art supplies are produced in metric.

9. ENGLISH -- Write a glossary of metric terms for the average person working with metrics for the first time. Prepare a series of essays for the school or local newspaper on the advantages of the ongoing metric conversion in the U.S. Have a “Metric Bee” using words taken from a dictionary of metric terms.

10. HISTORY AND SOCIAL STUDIES -- Prepare and give an illustrated talk on the history of weights and measures in the U.S. or another country of your choice. Write a brief biographical sketch and description of James Watt, Andre Ampere, Gabriel Moulton, John Quincy Adams or Napoleon. Make a map of the school using metric scale.

11. HOME ECONOMICS -- Research how foreign cooks measure food quantities in metric units. Then find a metric recipe (or make one) and have students prepare it. Take body measurements in metric units. Determine size with a metric pattern chart. Research how clothing is sized in some of the countries already using metric. Ask the lunch room staff to create a “Metric Meal” and have your students prepare signs with metric slogans beside each food item.

12. PHYSICAL EDUCATION -- Have a Metric Field Day, with track and field events using the Metric System. Check with AIMS (Activities Integrating Math & Science) for suggestions.

13. INDUSTRIAL ARTS -- Measure the standard pieces of lumber such as a 2x4, 1x6, etc., in metric units. What would the nominal dimensions be in the Metric System? Develop a set of plans for a birdhouse, etc., and then build the item, using only metric measuring devices.
14. DRIVER’S TRAINING -- Convert mileage, distances, and highway signs to metric units. Research what conversion the Department of Transportation now accepts. Write questions that could be included in a state driver’s test to evaluate a driver’s knowledge of the metric units that are used in motoring.

15. ME IN METRIC – Ask the students to explore how metric measurements relate to their own bodies.

Check out the United States Metric Association Web-site at www.us-metric.org where you will find many links to metric information. One of the best would be the "Metric Guide" for teachers which can be found about halfway down the home page in the teacher/educators section.

Check out the National Institute of Standards (NIST) Metric Programs at www.nist.gov/kids

It will be FUN!

Did you know that..?  
- Metric minimizes the likelihood of error.
- Metric does not have the numerous conversion factors of other systems.
- Metric has one unit for a quantity.
- Metric is legal, logical and preferred.
- Six months to two years of elementary arithmetic could be eliminated with the adoption of SI-Metric.
- IBM during metric conversion reduced fastener part numbers from 38,000 to 4,000.
- One bottling industry reduced its container sizes from 53 to 7.
- You would weigh 82 kilograms instead of 180 pounds.
- Public Law 103-227 of March 31, 1994, asserts that mathematics and science education, including the metric system of measurement, will be strengthened throughout the system, especially in the early grades.
- All major science and education organizations have encouraged the United States to fully adopt the metric system as the language of measurement.
- The National Association of Academies of Science and the United States Metric Association support our efforts promoting the metric system and metric training for teachers.

METRIC FACTS

English is the international language of business.
Metric is the international language of measurement.

😊 The Metric System – How to teach young people what they need to know!

1. Teach using only the Metric System.
2. Use rulers and measuring tools that have only metric scale units.
3. Teach measurement and physical quantities using materials and examples that students can see and touch.
4. Select, estimate, compare and use appropriate units to measure:
   - length (meter/centimeter);
   - mass (kilogram/gram);
   - volume (liter/milliliter);
   - temperature (degree Celsius)
5. Teach by actively involving the students in measuring activities.
6. Universities and Colleges that educate elementary school teachers should teach the system and how to use it. Very little time should be given to the Customary System. Teachers must know how to teach the Metric System and feel confident by doing so.
7. The change to the metric system is for all people and all disciplines (not just science, engineering and math).

What South Carolina Needs:

A Certified Metric Specialist in each of the over 2,000 Schools in South Carolina.
See http://www.artsandsciences.sc.edu/cse click on programs then Metric for more information
If you want to know how to become a Certified Metric Specialist, write or email Dr. Don M. Jordan / Center for Science Education / College of Arts & Science / Sumwalt Rm. 321 / USC Columbia, SC / 29208 djordan@sc.edu / 803 777 7007

Mark your calendars now for October 9 - 15, 2016, and incorporate Metric Week Activities into your teaching year-round!

Metric Week in South Carolina is sponsored by the South Carolina Academy of Science, Founded in 1924 & The Center for Science Education at USC The United States Metric Association
SI (pronounced ess-EYE) is the abbreviation for the Système International d'Unités, the modernized version of the metric system that the U.S. and other nations have agreed to use. (Do not abbreviate it as S.I.)

This list is provided to point out the correct way to use the metric system and to show many of the incorrect examples of its usage that may be given on package labels and in other printed matter. These correct ways to use SI are set by the international standards that define the SI.

### Important in SI-metric:

1. The short forms for SI units (such as mm for millimeter) are **symbols**, not abbreviations.
2. SI symbols *never end with a period* unless they are the last word in a sentence.
   - **RIGHT:** 20 mm, 10 kg
   - **WRONG:** 20 mm., 10 kg.
3. SI symbols should be preceded by digits and *a space must separate the digits from the symbol*.
   - **RIGHT:** It was 300 mm wide. The millimeter width was given.
   - **WRONG:** It was 300mm wide. The mm width was given.
4. Symbols *always are written in the singular form* (even when more than one is meant).
   - **RIGHT:** 1 mm, 500 mm, 1 kg, 36 kg
   - **WRONG:** 500 mms, 36 kgs
   - **BUT:** It is correct to pluralize written-out metric unit names: 25 kilograms, 250 milliliters
5. The symbol for a compound unit that is *a quotient of two units is indicated by a solidus* or by a negative exponent.
   - **RIGHT:** km/h or km·h$^{-1}$ (for kilometers per hour)
   - **WRONG:** kmph or kph (do *not* use p as a symbol for "per").
   - **BUT:** It is correct to say or write "kilometers per hour".
6. The meaning of an SI symbol can be changed if you substitute a capital letter for a lower case letter.
   - **RIGHT:** mm (for millimeter, which means 1/1000 of a meter)
   - **WRONG:** MM or Mm (M is the prefix for mega, which means one million; a megameter is a million meters)

The **symbol for liter** (or litre) may be either a capital el (L) or a lowercase el (l); both are correct. In the U.S., Canada, and Australia, the capital el (L) is preferred, but most other nations use the lowercase el (l).

More information for students and teachers can be found at

www.metric.org
Examples of incorrect SI-metric usage:

<table>
<thead>
<tr>
<th>Correct Usage</th>
<th>Examples of Incorrect Usage</th>
<th>For</th>
</tr>
</thead>
<tbody>
<tr>
<td>km</td>
<td>Km, km., KM, kms, K, k</td>
<td>kilometer</td>
</tr>
<tr>
<td>m</td>
<td>M, m.</td>
<td>meter</td>
</tr>
<tr>
<td>mm</td>
<td>Mm, mm., MM</td>
<td>millimeter</td>
</tr>
<tr>
<td>L or l</td>
<td>L., l.</td>
<td>liter</td>
</tr>
<tr>
<td>mL or ml</td>
<td>ML, Ml, mL., ml., mls</td>
<td>milliliter</td>
</tr>
<tr>
<td>kg</td>
<td>KG, KG., Kg, Kg., kgr, kgs, kilo</td>
<td>kilogram</td>
</tr>
<tr>
<td>g</td>
<td>G, G., g., gr, gm, GR, GM, GRM, grms</td>
<td>gram</td>
</tr>
<tr>
<td>µg</td>
<td>mcg&lt;sup&gt;1&lt;/sup&gt;</td>
<td>microgram</td>
</tr>
<tr>
<td>h</td>
<td>hr, hrs, HR, h., HR., HRS.</td>
<td>hour</td>
</tr>
<tr>
<td>s</td>
<td>sec, S, SEC, sec., s., S.</td>
<td>second</td>
</tr>
<tr>
<td>cm&lt;sup&gt;3&lt;/sup&gt;</td>
<td>cc</td>
<td>cubic centimeter</td>
</tr>
<tr>
<td>km/h</td>
<td>KPH, kph, kmph, km/hr</td>
<td>kilometer per hour</td>
</tr>
<tr>
<td>kHz</td>
<td>KHz, KHZ, Khz</td>
<td>kilohertz</td>
</tr>
<tr>
<td>MHz</td>
<td>MHZ, Mhz</td>
<td>megahertz</td>
</tr>
<tr>
<td>hPa</td>
<td>HPa, HPA, Hpa, mb</td>
<td>hectopascal</td>
</tr>
<tr>
<td>kPa</td>
<td>KPa, KPA, Kpa</td>
<td>kilopascal</td>
</tr>
<tr>
<td>°C</td>
<td>C, deg C, ° C, C°</td>
<td>degree Celsius</td>
</tr>
<tr>
<td>K</td>
<td>°K, deg K</td>
<td>kelvin</td>
</tr>
</tbody>
</table>

<sup>1</sup>Because the handwritten symbol "µg" looks almost exactly like "mg" and is therefore a frequent cause of overdoses, the abbreviation "mcg" is preferred in the medical field. See The Joint Commission recommendations.

Some explanations:

The spellings of meter and metre [or liter and litre] are both correct. In the U.S., the meter and liter spellings are used most often; but the English-spellings used in most other nations are metre and litre.

In a strict sense, spelling and pronunciation are matters of language and are <i>not</i> set by the international standards that define SI. But, in keeping with the pronunciation of the other SI units involving prefixes, which all accent the first syllable, the USMA-preferred pronunciation of the word, kilometer, is KILL-oh-meet-ur, (<i>not</i> kill-AHM-it-ur).
The Scale of Things – Nanometers and More

Things Natural

- Dust mite
  - 200 µm
- Human hair
  - 60-120 µm wide
- Red blood cells
  - ~7-8 µm
- Ant
  - ~5 mm
- Fly ash
  - ~10-20 µm

Things Manmade

- Head of a pin
  - 1-2 mm
- MicroElectroMechanical (MEMS) devices
  - 10-100 µm wide
- Zone plate x-ray “lens”
  - Outer ring spacing ~35 nm
- Self-assembled, Nature-inspired structure
  - Many 10s of nm
- Nanotube electrode
  - Carbon nanotube
  - ~1.3 nm diameter
- Carbon buckyball
  - ~1 nm diameter

The Challenge

Fabricate and combine nanoscale building blocks to make useful devices, e.g., a photosynthetic reaction center with integral semiconductor storage.

The Scale of Things – Nanometers and More

- Red blood cells
  - 7-8 µm
- DNA
  - 2-1/2 nm diameter
- Atoms of silicon
  - spacing ~tenths of nm
- ATP synthase

0.1 nm
1 nanometer (nm)

10-10 m
10-9 m
10-8 m
10-7 m
10-6 m
10-5 m
10-4 m
10-3 m
10-2 m
1 cm
10 mm
1,000,000 nanometers = 1 millimeter (mm)
1,000 nanometers = 1 micrometer (µm)
0.1 µm
100 nm
0.01 µm
10 nm
0.1 nm
10 µm
1 mm
100 µm
1000 µm
1 mm
10 mm
100 mm
1 m

Visible
Infrared
Microwave
Soft x-ray
Ultra violet
Nanoworld
Microworld
Nanometers and More
Test
Measurement & Nanotechnology
Grades 6 - 12

Answer the following True or False:  Circle One

1. A liter contains 1,000 smaller units called milliliters.
   True or False

2. A liter has a Volume of 1,000 cubic centimeters.
   True or False

3. If we convert 6,543,219 meters, to kilometers we get 6,543,219 km.
   True or False

4. Nanoscience is the study and development of materials and structures in the range of 1 nm (10^{-9} m) to 100 nanometers (100 x 10^{-9} m = 10^2 x 10^{-9} = 10^{-7}) and the unique properties that arise at that scale.
   True or False

5. An angstrom X is within the nanoscale but not the subatomic scale.
   True or False

End of True/False

Answer the following Multiple Choice Questions:  Circle One answer for each question.

6. A vitamin C tablet has a mass of 500 mg. That is the same as____.
   (a) 5 g  (b) 0.05 g  (c) 0.5 g  (d) 0.5 kg  (e)

7. The length of a pencil would probably best be measured in______.
   (a) milligrams  (b) meters  (c) decameters
   (d) centimeters  (e) micrometers

8. The unit of volume that is the same as one cubic decimeter is the______.
   (a) meter  (b) liter  (c) gram
   (d) hectometer  (e) none of these

9. Determine the order of magnitude difference in the sizes of the radii for Atoms (10^{-10} meter) compared with neutrons (10^{-15} meter).
   (a) Order 4  (b) Order 2  (c) order 12
   (d) Order 6  (e) none of these

10. How long has it been legal to use the metric system in the U.S.?
    (a) 1958.
    (b) 1975
    (c) 1866
    (d) 1921.
    (e) None of these.

Answers: 1. T  2. T  3. F  4. T  5. F  6. (c) 7. (d) 8. (b) 9. (e) 10 (c)
More Metric Questions including:
Surface Area, Volume & Mass
Consider the box (rectangular Prism) 7 cm by 8 cm by 9 cm and then answer the questions:

1. The 7 cm by 8 cm by 9 cm box has a capacity less than one half liter (500 cm$^3$ or 500 mL).
   (a) TRUE   (b) FALSE

2. The 7 cm by 8 cm by 9 cm box has a Volume of 500 cm$^3$.
   (a) TRUE   (b) FALSE

Answer the Follow True or False: Circle the correct Answer and write the answer in the space provide.

1. The 7 cm by 8 cm by 9 cm box has a capacity less than one half liter (500 cm$^3$ or 500 mL).
   1. Answer _________________

2. The 7 cm by 8 cm by 9 cm box has a Volume of 500 cm$^3$.
   2. Answer ________________

End of True/False

Answers: 1. (b) Volume = 504 cm$^3$ or 504 mL 2. (b)
3. (b) $7 \times 8 + 7 \times 9 + 8 \times 9$ twice 4. (d) 5. (c)

Answer these Multiple Choice Questions:

3. What is the surface area of the 7 cm by 8 cm by 9 cm box?
   3. Answer ______________
   (a) 191 cm$^2$   (b) 382 cm$^2$   (c) 94 cm$^2$   (d) 32 cm$^2$
   (e) None of these

4. If the box is filled brim full of water what is the mass of the water?
   4. Ans = ___________ g
   (a) 94 g   (b) 382 g   (c) 500 g   (d) 504 g
   (e) None of these

5. Consider a Liter Cube (10 cm by 10 cm by 10 cm) and compare with the box above 7 cm by 8 cm by 9 cm.
   What is the difference in their capacity (volumes) in mL.
   5. Ans = __________
   (a) 1 000 mL   (c) 94 mL   (c) 496 mL
   (d) 940 mL   (e) None of these

6. Hello my name is ____________________________
   and I am ________________ cm tall.

7. Hello my School is ______________________________
   And we like the Metric System because: __________***
   _________________________________________________***
   _________________________________________________****

The End
NIST
National Institute of Standards and Technology
SI Teacher Kits Available for Educators

September 2015

Attention Teachers! Did you know that you can obtain a free set of metric education resources for use in your classroom? Contact the NIST Metric Program:

Email: TheSI@nist.gov and include your name, school, subject, grade level, phone number, and mailing address. The NIST SI Teacher Kit a classroom set of metric rulers (300 mm ruler), laminated metric conversion cards, SI Education CD, and other measurement resources.

Our website www.nist.gov/metric has numerous educational materials that can be downloaded and freely reproduced. These resources are helpful to students as they become familiar with the SI, develop reference points or that innate understanding of how much a quantity is, and learn more about SI basics. Your students may find Everyday Estimation and Becoming Familiar with the SI helpful. In addition, there are several Unit Conversion resources available.

Popular Links: • Education Resources; • Becoming Familiar with the SI • Everyday Estimation

Please note the following Recommendation from NIST:

FAQ: My students are having difficulty using dual measurement unit tools, such as rulers that use both inches and centimeters. They keep mixing up the units! What can I do to improve their learning experience?

One recommended education best practice is to teach the SI by using the SI. Students must build proficiency and confidence working with metric measurements before they can effectively make comparisons with other measurement systems. Use single system measurement tools whenever possible. Using dual unit measuring equipment can confuse learners because it is easy to select and use the wrong scale. When possible, acquire metric measuring devices (meter sticks, kilogram or gram scales, and Celsius thermometers). If dual unit measurement tools are used (e.g., those using U.S. customary units), block the non-metric units from view. For example, use opaque tape, an index card, or paint to cover up inches on a dual unit ruler.

FAQ: How do I get a metric ruler?

Metric rulers are available from many retail vendors, which can be identified by using search terms such as "metric rule," "meter stick," or "metric stick." Printable rulers such as the centimeter Color-square rules, can be color printed on to overhead transparency sheets to make inexpensive metric rulers. You may also be interested in similar printable teaching aids that create a liter cube or a cubic decimeter box, which are easily constructed using cardstock.

The National Institute of Standards and Technology (NIST) is an agency of the U.S. Department of Commerce.
Learn more about us from our video, Making Connections.

The National Institute of Standards and Technology (NIST) Summer Institute for Middle School Science Teachers is a two-week workshop for middle school science teachers featuring hands-on activities, lectures, tours, and visits with NIST scientists and engineers in their laboratories.

Teachers who participate in the NIST Summer Institute gain:
- Increased understanding of the subjects they teach
- Increased understanding of how scientific research is performed
- Materials and resources to implement what they learned at NIST in their classrooms
- Increased enthusiasm for science
- A network of scientists and engineers at NIST with whom to consult
- Teachers finish the NIST Summer Institute with a wealth of new knowledge about core topics such as forensics and materials science, and materials to integrate these topics into their classroom while meeting curriculum standards.

For more information:

http://www.nist.gov/iaao/teachlearn/index.cfm

Our website www.nist.gov/metric has numerous educational materials that can be downloaded and freely reproduced. These resources are helpful to students as they become familiar with the metric system (e.g., developing reference points or that innate understanding of how much a quantity is) and learn more about SI basics. There are several Unit Conversion resources on our website (http://www.nist.gov/pml/wmd/metric/unit-conversion.cfm).

Your students may find Everyday Estimation (http://www.nist.gov/pml/wmd/metric/estimation.cfm) and Becoming Familiar with the SI (http://www.nist.gov/pml/wmd/metric/si-familiar.cfm) helpful.

Testimonials about NIST Summer Institute

"This is a remarkable experience and I can't really put into words how much fun I am having."
"This program has opened up so many doors and has rejuvenated my passion and love of teaching science."

The NIST Research Experience for Teachers is a follow-on program that provides two local middle school science teachers with six weeks of real-world research experience at NIST. Completion of the NIST Summer Institute is a prerequisite for participating in the Research Experience for Teachers.

The National Institute of Standards and Technology (NIST) is an agency of the U.S. Department of Commerce.
Metric True and False Quiz

Try these ten metric true and false statements.

1. A centimeter is one-hundredth of a meter. T F
2. A kilometer is shorter than a mile. T F
3. A liter is larger than a quart. T F
4. A meter is longer than a yard. T F
5. There are five hundred milliliters in a liter. T F
6. Metric conversion is voluntary in America. T F
7. Photographic film is measured in millimeters. T F
8. Zero degrees Celsius is the same as 100 degrees Fahrenheit. T F
9. The symbol for kilogram is kg. T F
10. The approximate thickness of a dime is 1 millimeter. T F

Answers:

www.metric.org
Metric: The Choice is Yours
Test your metric knowledge: Circle the correct answer to each of these ten multiple choice questions.

1. What metric measure would you use to measure the length of a pencil?
   - gram
   - Celsius
   - liter
   - centimeter

2. When weighing a moose in metric measure, which word would you use?
   - kilograms
   - meters
   - Celsius
   - liters

3. If the temperature outside is 35 degrees Celsius, what will you most likely be doing?
   - cross country skiing
   - ice skating
   - swimming
   - hiking

4. Which is the shortest distance?
   - 23 kilometers
   - 24 meters
   - 25 centimeters
   - 26 millimeters

5. If you were buying tomato juice that had been packaged in a metric sized can, what metric measure would be used?
   - kilometers
   - liters
   - Celsius
   - ton

6. What is the metric measure used for snow skis?
   - millimeters
   - centimeters
   - liters
   - grams

7. At birth, which of these babies might weigh 3 kilograms?
   - moose
   - elephant
   - flea
   - human

8. Which of these is about the same size as a liter?
   - gallon
   - quart
   - ounce
   - inch

9. About how much does a paper clip weigh?
   - 1 kilogram
   - 1 liter
   - 1 gram
   - 1 meter

10. Which one of these measures is about the width of an average doorway?
    - meter
    - kilometer
    - gram
    - Celsius

Answers:
1. centimeter
2. kilograms
3. swimming
4. 26 millimeters
5. liters
6. centimeters
7. human
8. quart
9. gram
10. meter