

Just for Fun
Art & Math “Magnificent Seven”
Encourage your teacher to have your entire class participate in this activity.
Share your artwork and evaluate.

Draw pictures or cut and paste pictures of seven items (anything --- Ducks, Cartoons, Cowboys, Superheroes, the Continents etc.) where each represents one of the seven basic units in the metric system. Identify each character with one of the seven basic units with a brief description. We have provided examples at www.artsandsciences.sc.edu/cse & www.scacademysci.org (click on MESAS).

1. Meter (m), 2. Second (s), 3. Ampere (A), 4. Candela (cd),
5. Celsius (C), 6. Kilogram (kg) 7. Mole (mol).

Use *landscape* and put this on one page 8.5 by 11. Use color.

Consider having members in your class, or a group of friends, or family members involved.

We provide a rubric, but any evaluation procedure you agree upon is good.

Creative Presentation of each of the seven objects.	10 points	_____
Association and Description used with your seven objects.	15 points	_____
Use of Color	05 points	_____
Overall Artistry	15 points	_____
Spacing	05 points	_____

Total Points = _____

We hope you will draw a picture using seven characters to represent one of the seven basic units.

1. Meter (m), 2. Second (s), 3. Ampere (A), 4. Candela (cd), 5. Celsius (C), 6. Kilogram (kg) and 7. Mole (mol).

This question does not count. One does not need to use the rubric provided above. Just have Fun! Provided for fun only!

The Seven Basic Units in the Metric System

The Magnificent Seven

The International System of Units (SI) or Metric System is established by international agreement. It provides a logical and interconnected frame work for all measurements in science, industry, and commerce. Officially abbreviated SI, the system is built upon a foundation of seven base units below. **All other SI units are derived from these units.**

1. Length **Meter m**

The SI unit of speed is meter per second (m/s); The SI unit of acceleration is the meter per second per second (m/s²); The SI unit of Area is square meter (m²); The SI unit of Volume is the cubic meter (m³).

The Liter (1 cubic decimeter) [as will as the milliliter (mL)] is accepted for use in SI and is commonly used to measure fluid volume.

2. Time **Second s**

3. Electric Current **Ampere A**

4. Luminous Intensity **Candela cd**

5. Temperature Kelvin K or **Celsius C**

Zero degrees Celsius is 273.15 K; 37 ° C is normal body temperature

6. Mass **Kilogram kg**

The gram, g, is used to measure small quantities such as candy.

1 gram is the mass of H₂O in 1 cubic centimeter at 4 ° C.

The SI unit of force is the Newton (N). One Newton is a force that applied to a one kilogram object, will give the object an acceleration of one meter per second per second

$$1 \text{ N} = 1 \text{ kg} \cdot \text{m/s}^2$$

The weight of an object is the force exerted on it by gravity. Gravity gives a mass a downward acceleration of about 9.8 m/s²

7. Amount of Substance **Mole mol**

The mole is the amount of substance of a system that contains as many elementary entities as there are atoms in 0.012 kilogram of carbon 12.

When the mole is used, the elementary entities must be specified and may be atoms, molecules, ions, electrons, or other particles.

The SI unit of concentration (of amount of substance) is the mole per cubic meter (mol/m³)

The base units for time, electric current, amount of substance, and luminous intensity are the same in both the inch-pound and metric system

www.artsandsciences.sc.edu/cse (Click on-Programs then Metric) or <http://scacademysci.org> (click on South Carolina Academy of Science Founded 1924) then click on Metric, top of page. We want you to know the opportunities offered to Teachers and Students by the National Institute of Science & Technology (NIST) Metric Program. <https://www.nist.gov/metric>. Also, USMA Site usma.org is a good site for information.



Doc- He is helpful around the house because when someone is sick, he can take their **Temperature (Kelvin/Celsius)** to see if they are contagious.

Bashful- He tries to keep his **Distance/Length** from others because he is very shy and bashful. He finds himself standing **meters** away from the “crowd”.



Grumpy- He spends so much **Time (seconds)** being grumpy that his friends ever wonder if he will spend some time trying to be content with his self.

Sneezy- He sometimes worries about the **Amount of Substance (Moles)** he is creating when he sneezes! Ahhhhhchoooo!



Dopey- He sometimes forgets how “dopey” he can be and tries to pick up objects that have a heavy **Mass (kilogram)** and realizes that he made a mistake



Sleepy- He spends so much time sleeping and resting around the house. His friends think he needs something to give him a sense of **Electric Current (Ampere)** so he can stop



Happy- He is always smiling! His friends say that he puts off a **Luminous Intensity (Candela)** that is so strong. Some say just seeing him smile puts them in a better mood!



Magnificent Seven

The Seven

THE MAGNIFICENT SEVEN

(AKA Winnie the Pooh's Friends)



Kanga-LENGTH: Her tail may well enable her to jump a METER at a time.



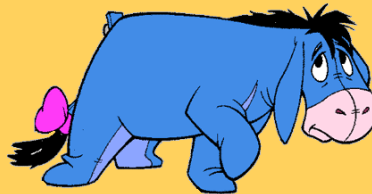
Rabbit-TIME: He can hop Anywhere in under a SECOND.



Tigger-ELECTRIC CURRENT: His energy level is measured in AMPERES.



Owl-LUMINOUS INTENSITY: Owl's ability to think is so intense it is measured by CANDELAS.



Eeyore-TEMPERATURE: Eeyore's outlook on life is sure to be low on the KELVIN or CELCIUS scale.



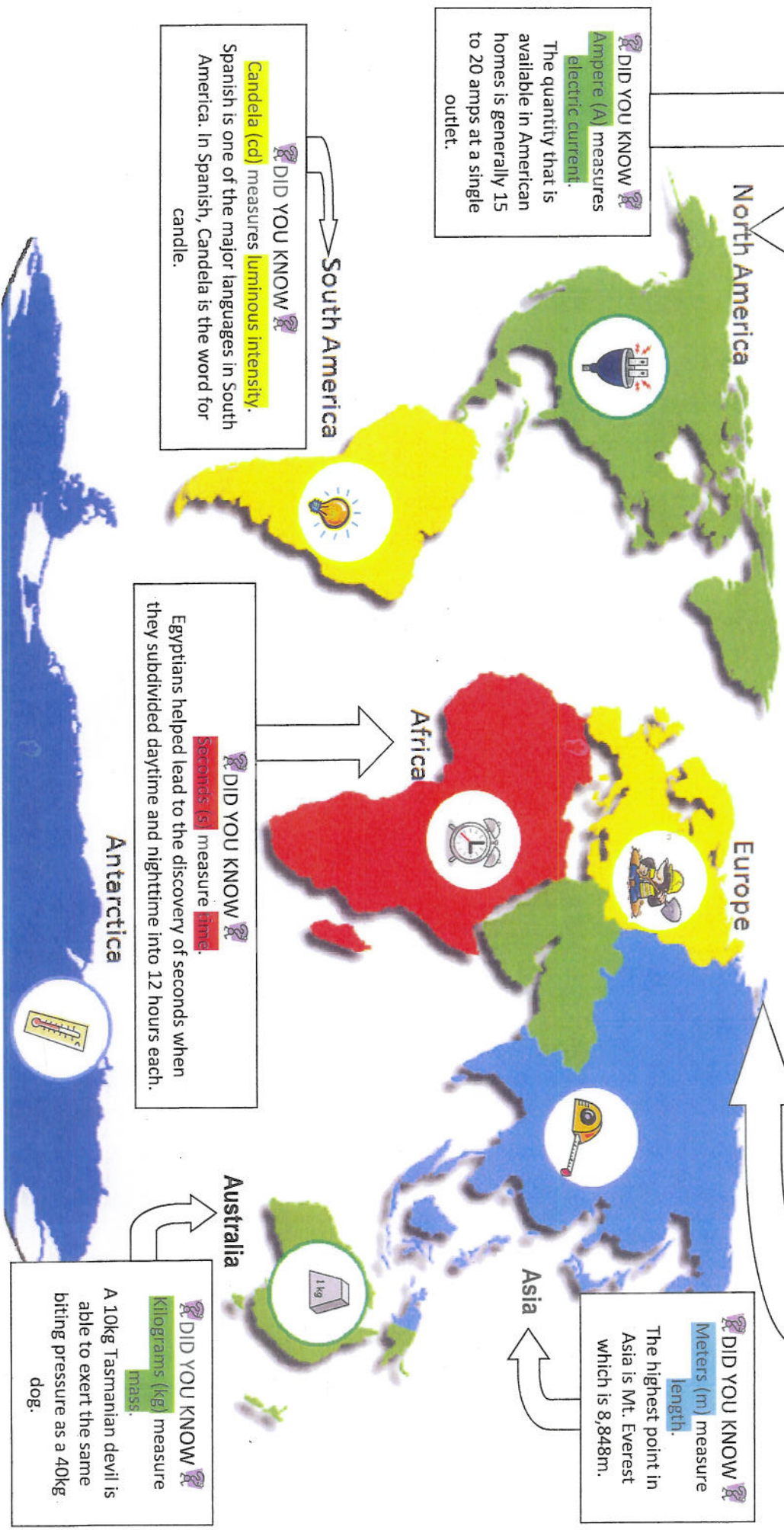
Heffalump-MASS: Her mass is sure to be high in KILOGRAMS.



Gopher-AMOUNT OF SUBSTANCE: Gopher digs up MOLES of dirt.

THE MAGNIFICENT SEVEN

Our World: The Seven Continents



DID YOU KNOW
 Amperes (A) measures electric current.
 The quantity that is available in American homes is generally 15 to 20 amps at a single outlet.

DID YOU KNOW
 Candela (cd) measures luminous intensity.
 Spanish is one of the major languages in South America. In Spanish, Candela is the word for candle.

DID YOU KNOW
 Mole (mol) measures the amount of substance.
 Chemist Wilhelm Ostwald, who coined the term mole in 1893, died in Leipzig, Germany.

DID YOU KNOW
 Meters (m) measure length.
 The highest point in Asia is Mt. Everest which is 8,848m.

DID YOU KNOW
 Seconds (s) measure time.
 Egyptians helped lead to the discovery of seconds when they subdivided daytime and nighttime into 12 hours each.

DID YOU KNOW
 Kilograms (kg) measure mass.
 A 10kg Tasmanian devil is able to exert the same biting pressure as a 40kg dog.

DID YOU KNOW
 Kelvin (K) or Celsius (C) measures temperature.
 Antarctica's average summer temperature is -15 to -35°C, and the average winter temperature is -40 to -70°C.

The METRIC Shoes

By Shaina Barber



SECOND

These are sprinters shoes, meant for a race where seconds matter.



CELSIUS

These shoes are meant for the most extreme of climates.



AMPERE

These are battery powered/electric massaging shoes. Amps are necessary to get these going.



MOLE

A really big shoe represents a mole because it shows an 'amount' of a 'substance'. In this case, it's 'a lot' of 'shoe'.

METER

Shoes meant for a distance runner. 100 meter, 400 meters or more. These shoes do it all.



CANDELA

Light up shoes help you find your way in the dark!

KILOGRAM

Strap a few kg's to your shoes and you're sure to get toned.



Seven Cartoon Characters

Representing the 7 Basic Units in the Metric System



Ampere (A): Electric Current; Pikachu's power is electricity.



Meter (m): Length; Slink stretches far distances to help his friends in Toy Story.



Candela (cd): Luminosity; Tinkerbell lights up the sky with her bright glow.



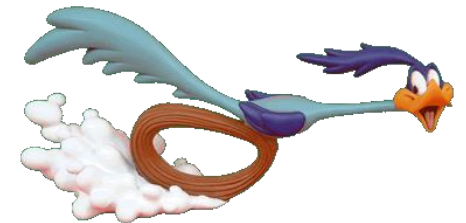
Celsius (C): Temperature; Betty Boop was a hot cartoon character years ago.



Kilogram (kg): Weight; Garfield is one fat cat who loves to eat. His weight and love for pizza make him a stand-out character



Mole (mol): Chemical Substances; Dexter was always mixing up chemicals and coming up with new experiments in his laboratory



Second (s): Time; The roadrunner is extremely fast (and smart). He has yet to get caught by the mischievous Wyl E. Coyote!