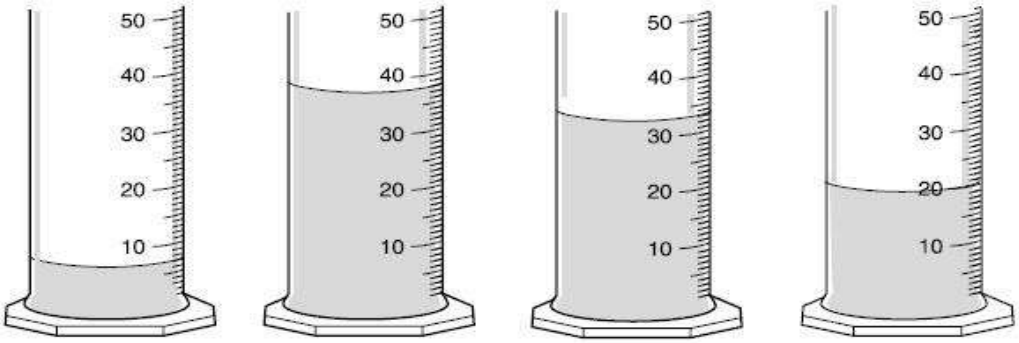
Benchmark One Study Guide: Science Benchmark Wed. Oct. 3rd

Characteristics of Science:

1. What is a graduated cylinder used to measure?
2. Explain how you read a graduated cylinder.

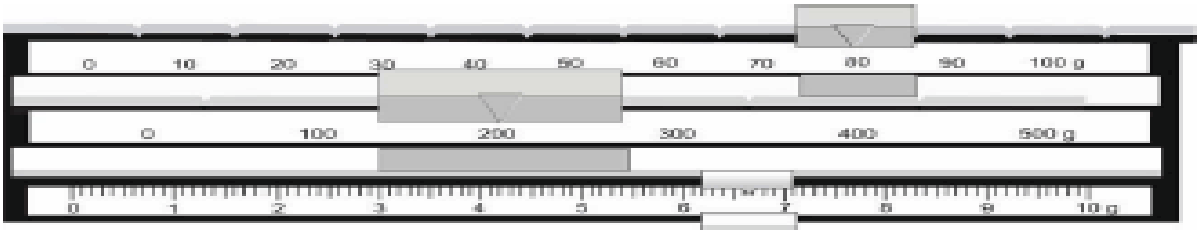
3. What science tool is used to measure the mass of an object?

4. Read the graduated cylinders below. Be sure to put the appropriate units with your measure!



1. _____ 2. _____ 3. _____ 4. _____

5. Read the triple beam balances below. Be sure to but the appropriate units with your measure!



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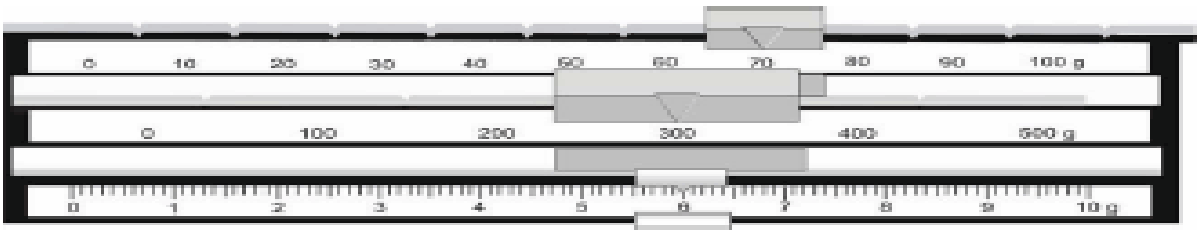


_____

Write the steps of the scientific method.

7. A hypothesis should be formed after which step of the scientific method?

8. When should safety rules and precautions be planned?

10. Why is it important for scientists to record accurate data while experimenting?

11. In what step of the scientific method should the mean or average from results be calculated and graphed?

S6E1: A-Theories of the universe:

Name that Theory:

_____1. Expansion of the universe
_____ 2. Sun Centered Solar System
_____3. Earth Centered Solar System
_____4. Georges Llamatre and Edwin Hubble
_____5. Ancient Greeks and Aristotle
_____6. Copernicus and Galileo
_____7. Singularity: concentrated point of matter & energy
_____8. Venus' phases and Jupiter's Moons

9. Draw and explain Geocentric Theory.
10. Draw and explain Heliocentric Theory.
11. Draw and explain Big Bang Theory.
12. What is nebula?
13. What evidence did Edwin Hubble detect to support the Big Bang when he created the Hubble Telescope? (2 pieces of evidence)

14. Rank the following objects in terms of size (1-largest to 4-smallest.)
_____ Galaxy
_____ Earth
_____Sun
_____Universe

S6E1 B-Milky Way Galaxy

1. What is a galaxy?

2. What type of galaxy do we live in?

3. Where is our solar system located within the Milky Way?

4. What unit of measurement do we use to measure distance within the Milky Way Galaxy? _____ What unit of measurement do we use to measure within our solar system? _____
5. Identify each type of galaxy below.



S6E1 C – Comparing Planets

1. What mneumonic device helps you remember the order of the planets, closest to the Sun?

2. How do the inner or terrestrial planets differ from the outer planets in terms of composition (what the planets are made up of) and size?

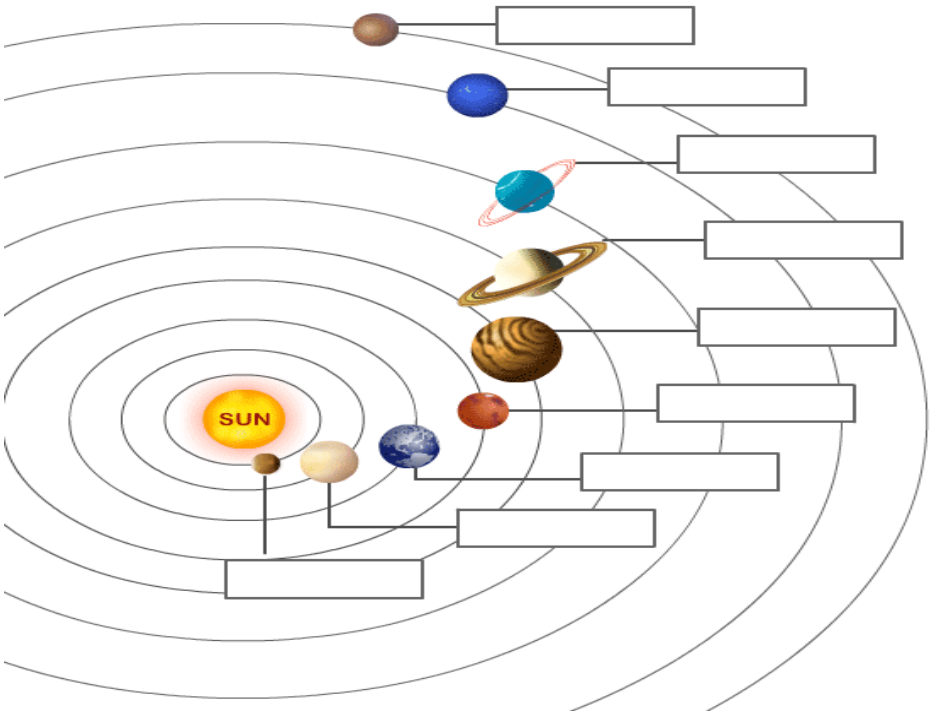
3. Which planets have a gravity greater/stronger than Earth?

4. What makes Earth unique and have the ability to support life?

5. Name that Planet:
_____Largest Planet
_____ Earth's Twin Sister
_____ Dried River Beds/Red Planet
_____ Methane Gas makes it Blue
_____ Tilted 90 degrees on its axis
_____ Hottest Planet-Thick atmosphere
_____ Great Red Spot
_____ Most Visible Ring System-Ice Crystals

6. Explain orbital velocity in relation to a planets distance from the Sun. Compare inner vs. outer planets.

Identify and fill in the names of the planets.



S6E1 D – Motions

1. What is the difference between the terms rotation and revolution?

2. Name the Motion:

_____ Earth orbiting the Sun
_____ Earth spinning on its axis
_____ Makes stars appear to move across the night sky
_____ 365 ¼ days or One Earth Year
_____ 24 hours, or One Day
_____ Causes the Sun to appear to rise and set each day

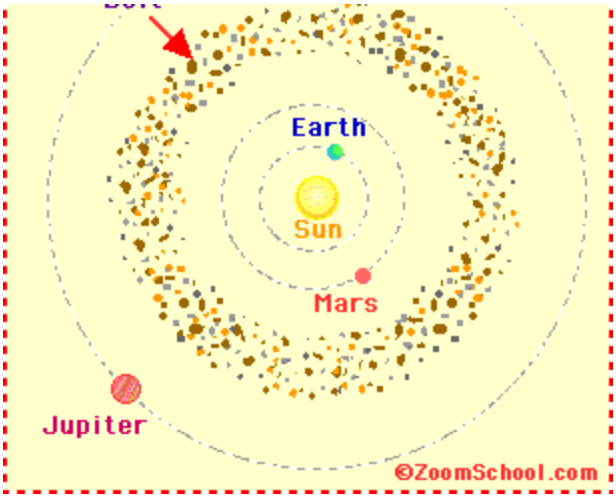
3. How many degrees is Earth tilted on its axis?
4. What does Earth's tilt cause?
5. Why do we have more hours of daylight in the summer than in the winter?
6. What percentage of Earth is illuminated or lit up at any given time?
7. What percentage of Earth is dark, or having night at any given time?

S6E1 E – Gravity

1. What is the force that governs motion in the solar system?
2. What two factors affect the gravitational force between two objects?
3. Why does the moon revolve or orbit Earth instead of the Sun?
4. If Earth was larger in mass, how would the gravitational force be affected?

S6E1-F Asteroids, Comets, Meteors

1. Identify the object in the diagram and explain where they are located.



2. Draw and explain the difference between a meteoroid, meteor, and meteorite.

Meteoroid	Meteor	Meteorite

4. What are comets?
5. Where do they form?
6. Why does a comets tail always point away from the Sun?

7. Name that object!

_____ A large chunk of rock/metal orbiting between Mars and Jupiter

_____ A piece of an asteroid that has broken off and is moving in space

_____ A meteoroid that is burning up in the atmosphere; a shooting star

_____ A chuck of rock or metal that hits the surface of a planet; creating a huge crater on impact

8. Identify the parts of a comet.