

# Matter & Energy Catalysts

Physical Science

# Catalyst 9/28

1. How are mass and weight related?
2. What would happen to your mass and weight if you moved to a planet with less gravity?  
Stronger gravity?
3. How do pure substances differ from mixtures?
4. How do elements and compounds differ?

# Catalyst 9/21

## How can two similar objects differ?

- Procedure
  - Look at the two balls but do not pick them up. Compare their sizes and shapes. Record their observations.
  - Pick up each ball. Compare the way the objects feel in your hands. Record your observations
- What do you think?
  - How would your observation be different if the larger ball were made of foam

# Catalyst 9/21 Cont.

1. What is mass? How is it measured? What is the SI unit?
2. What is volume? How do we measure solid volume? Units? What if the object is irregularly shaped? How do we measure liquid volume? Units?

# Catalyst 9/22

1. What is the difference between mass and weight? What are the units for each? What tools do we use to measure each.
2. What is the volume of a box that is 12cm long, 6 cm wide, and 4cm high?
3. Why might a small increase in the dimensions of an object cause a large change in its volume?
4. What is density? What is the equations to calculate it? What are its units?

# Physical Science Catalyst 9/26

1. What was the density of the green liquid? What do you think this liquid was?
2. What was the density of the first (actual) rock? Did it sink or float when you tried to use water displacement?
3. What was the density of the second (cork) rock? Did it sink or float when you tried to use water displacement?
4. What can you conclude about the relationship between density of an object compared to density of water and whether the object will float or not?

# Catalyst 9/28

1. What is the relationship between mass and weight?
2. How would the mass and weight of something change if you moved to a planet with less gravity? More gravity?
3. How do pure substances and mixtures differ?
4. How do compounds and elements differ?

# Catalyst 9/30

Read the written portion of your lab. Answer the last 4 questions on a separate piece of paper to turn in with your lab.

# Review 9/30

Write a definition for the following words:

1. Matter

2. Mass

3. Volume

4. Weight

5. Compound

6. Element

7. Mixture

8. Solution

9. Suspension

10. Atom

# Review 9/30 cont.

1. List the 3 states of matter.

Name the state of matter that is described by each characteristic.

2. Particles are locked into rigid pattern; vibrate in place.

3. Fixed volume; No fixed shape; takes the shape of its container.

4. Fixed shape and fixed volume.

5. No fixed volume; expands to fill its container.

6. Particles are close together but can slide past one another.

7. Particles are furthest apart; when forced together- pressure increases.

## Review 9/30 cont.

1. What are the three major types of matter? Identify each as an element, compound, mixture.
2. Can be separated by a physical means
3. Arsenic contains only a single type of atom
4. Sugar is the combo of Carbon, Hydrogen, Oxygen and has properties that are different than its components.
5. Lake water contains dirt, small organisms and dissolved gasses
6. Carbon Dioxide

# Review 9/30

1. What are the 3 things that can not be classified as matter.
2. What are the tools we use to measure mass?
3. What is the SI unit for mass?
4. What is the SI unit for volume?
5. What is the scientific unit for weight?
6. What is the equation to calculate the volume of a regularly shaped solid object?
7. What are the units for this object's volume?
8. What is the method used to find the volume of a irregularly shaped solid?
9. What is the unit for liquid volume?
10. What is the tool used to measure liquid volume?

## Problems 9/30

1. What is the volume of an aquarium that is 120 cm long, 60cm wide, and 100cm?
2. What is the density of a piece of wood that has a mass of 25.0 grams and a volume of 29.4 cm<sup>3</sup> ?

# Review for test in Book

I recommend doing the following:

Pg 35 #1-22

Remember my tests are cumulative so you have some questions about:

graphing, independent/dependent variable, units/types of measurements, conversions.