Name: _____ Class: _____ Date: _____

H.W. – Unit 1 Study Guide

This Study guide is due tomorrow, Sept. 30th. You will need to visit www.MrAscience.com to answer most of the questions!

Topics:

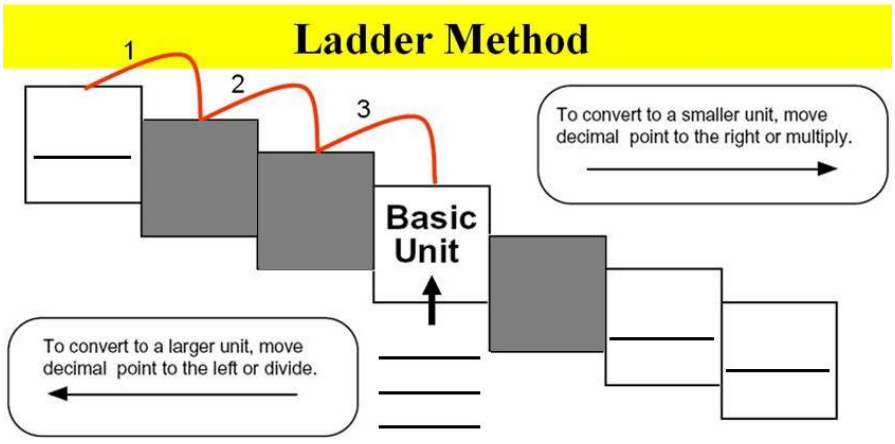
1. The Meter
2. Converting Metric Units
3. Volume
4. Mass
5. Density
6. Boats

Class Calendar:

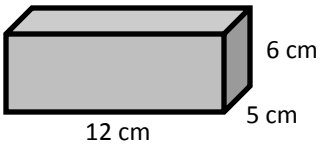
	September 1: Introduction to 8th Grade Science H.W. None	**September 2:** DDM Pre-Tests H.W. Get 3-Ring Binder	**September 3:** The Meter H.W. None	
	September 8: Converting Metric Units H.W. None	**September 9:** Volume H.W. None	**September 10:** Mass H.W. Website Check	**September 11:** The Mass of Water Lab H.W. None
September 14: Density Lecture (Picture Day) H.W. Checkpoint Quiz	**September 15:** Density Lab H.W. None	**September 16:** Changes in Density H.W. Finish Post-Lab	**September 17:** Go Over H.W. H.W. None	**September 18:** Review Carousel H.W. None
September 21: Intro to Boats H.W. None	**September 22:** Building Boats H.W. None	**September 23:** Boat Testing H.W. Begin Boats Essay	**September 24:** How Much Will It Hold? Day #1 H.W. Boats Essay	**September 25:** The Finest Hours Day H.W. Finish Boats Essay
September 28: How Much Will It Hold? Day #2 H.W. None	**September 29:** Review Day H.W. Study Guide	**September 30:** Unit 1 Test (Mr. A absent) H.W. None		

Day-by-Day Recap:

Go to www.MrAscience.com and visit the journal entry for each day.
After reading it, answer the "key question" to the right…

September 1: Intro to Grade 8 Science	What is the name of the device in the picture? **windmill** Which of this year's seven units is it related to? **Environmental Science**
September 2: DDM Pre-Tests	Why did Mr. A give all three DDM pre-tests at once? **To same time (and still find an average score for all three).**
September 3: The Meter	"Part of being a good scientist is…" ***Hint: It's a quote from that day's entry…**
September 8: Converting Metric Units	Fill in the 6 blanks below (3 prefixes and 3 basic units).  **See metric ladder (Page 103).**
September 9: Volume	What is volume? **See website.** What units do we use to measure it in (a) the English system and (b) the Metric System? **(a) Gallons and ounces (b) Liters, milliliters, etc.**

September 10: Mass	What is mass? **See website.** What units do we use to measure it in (a) the English system and (b) the Metric System? **(a) pounds (b) grams**
September 11: The Mass of Water Lab	Explain how the centimeter, the milliliter, and the gram are all related. **See website.**
September 14: Density Lecture	In the video, how did they determine what percentage of the object would float above the water line? **If the density is 0.5 g/ml, that means 50% of the object would be above water.**
September 15: Density Lab	What are the formula and the units for density? **D = M ÷ V (g/ml)** How do we determine whether an object will float in water? **If it is below 1.0 g/ml it will float.**
September 16: Changes in Density	In the video, Phoebe shows us three different-colored samples. Which ones floated and which ones sank? **1. Hot water (red) floated.** **2. Cold water (blue) sank.** **3. Salt water (purple) sank.**
September 17: Go Over H.W.	Click the link to view the "Post-Lab Answers." What is one notable exception mentioned in Question #3? **Most substances get more dense when they cool off. But ice is a notable exception; it expands because the molecules form ice crystals.**
September 18: Review Carousel	What were the three steps to figuring out the blimp problem in the Review Carousel? **1. Convert mass to kilograms.** **2. Calculate density of blimp.** **3. See if blimp was less dense than CO_2.**

September 21: Intro to Boats	The aircraft carrier in the picture has a mass of 200,000,000 lbs. (or 90,718,474,000 grams). So we know that its volume must be *at least*… **The volume must be at least 90,718,474,000 ml for it to float.**
September 22: Building Boats	If you had to rebuild your boat again, what would you do differently? **No help on this one!**
September 23: Boat Testing	What were the three keys to boat-building that Mr. A discussed in the video? **Watch the darn video, you lazy bum!**
September 24: How Much Will It Hold? – Day 1	What is the modified formula we used in this lab? $d = \frac{m_b + m_c}{v}$
September 25: The Finest Hours Day	The plastic boat in the picture below has a mass of 100 grams. How many bolts could it hold before sinking? **V = 360 ml**  $1.0 = \frac{100 + m_c}{360}$ **m_c = 260 g or 4 bolts**
September 28: How Much Will It Hold? – Day 2	
September 29: Review Day	What is the one topic that you need the most work on before tomorrow's test? **It's up to you.**