

I'm not robot!



Hot metal (55.0 g)  $T_i = 99.2^\circ\text{C}$   
 Cool water (25.0 g)  $T_i = 21.0^\circ\text{C}$   
 Metal cools in exothermic process.  $\Delta T$  of metal is negative.  $q_{\text{metal}}$  is negative.  
 Water is heated in endothermic process.  $\Delta T$  of water is positive.  $q_{\text{water}}$  is positive.

Handwritten notes:  
 Iron = 467  
 $T_f = 23.1^\circ\text{C}$   
 $C = 4.184 \text{ J/g}^\circ\text{C}$   
 $m = 55.0 \text{ g}$   
 $T_i = 99.2^\circ\text{C}$   
 $T_f = 23.1^\circ\text{C}$

Heat flows from the hot metal water  
 $q = m \times c \times \Delta T$   
 $q = m \times c \times \Delta T$

1. Which set of coefficients would balance the following equation?  
 $\text{Mg} + \text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$

2. Which set of coefficients would balance the following chemical equation?  
 $\text{R}_2\text{P}_2\text{O}_7 + \text{H}_2\text{O} \rightarrow \text{H}_3\text{PO}_4$

3. Why is the following equation an acid?  
 $\text{Al} + \text{H}_2\text{O} \rightarrow \text{Al(OH)}_3$

CHM 2045L: Heat Effects and Calorimetry

Post-Lab Sheet: Heat Effects and Calorimetry

Name: \_\_\_\_\_

Show calculations for credit. Be mindful of significant figures.

1. A piece of aluminum with a mass of 32.5 g is heated to  $67.4^\circ\text{C}$  and put into a Styrofoam calorimeter containing 58.2 g of water that is initially at  $21.2^\circ\text{C}$ . Assuming no heat is lost, what is the final temperature? The specific heat of aluminum is  $0.902 \text{ J/g}^\circ\text{C}$ , for water  $4.18 \text{ J/g}^\circ\text{C}$ . (6 pt.)

Handwritten calculation:  
 $(32.5 \text{ g} \times 0.902 \text{ J/g}^\circ\text{C})(67.4 - T) = (58.2 \text{ g} \times 4.18)(T - 21.2)$   
 $1975.831 - 29.315 T = 243.276 T - 5157.4512$   
 $-29.315 T - 243.276 T = -5157.4512 - 1975.831$   
 $-272.591 T = -7133.28$   
 $T = 26.17^\circ\text{C}$

2. When 50.0 mL of 0.100M HCl is combined with 50.0 mL of 0.100M compound "AB" in a Styrofoam calorimeter, the temperature changes from  $22.1^\circ\text{C}$  to  $28.7^\circ\text{C}$ .

The reaction is  $\text{HCl}_{(aq)} + \text{AB}_{(aq)} \rightarrow \text{ACl}_{(s)} + \text{HB}_{(aq)}$

Assume the density of the solution is  $1.000 \text{ g/mL}$  and the specific heat capacity  $C = 4.18 \text{ J/g}^\circ\text{C}$ .

Calculate the  $\Delta H_{\text{rxn}}$  in J and also the  $\Delta H_{\text{rxn}}$  in kJ/mole. (9 pt.)

## Energy in a Snack (Calorimetry) Lab

**Purpose:** To calculate the energy in a snack by empirical evidence and compare to posted values. The idea is to burn the snack (literally) and capture the heat given off in a sample of water of known mass, contained in a soft drink can, suspended from the tub on a stir rod or pencil hung across a ring clamp above the burning food sample. It is best if the food sample is held above a cork by a paper clip. The change in mass of the food sample before and after burning must be determined in order to calculate the calories per serving. At least 3 trials should be performed and averaged together at the end. Students should include all error and uncertainty calculations as specified in posted presentation.

- Formula:**  $mc\Delta T = q$   
 $m$  = mass of water (g)  
 $c$  = specific heat of water (a constant); either  $1 \text{ cal/(g}^\circ\text{C)}$  or  $4.184 \text{ J/(g}^\circ\text{C)}$   
 $\Delta T$  = temperature change ( $^\circ\text{C}$ ) (How do you get the change in temp.?)  
 $q$  = heat energy, expressed in calories or Joules, depending on which constant used  
**Note:** 1000 calorie (cal) = 1 kilocalorie = 1 Calorie (food label)  
 $1 \text{ cal} = 4.184 \text{ J}$

**Data Table**

	Trial 1	Trial 2	Trial 3
Snack type:			
Initial mass with cork & paper clip (g)			
Final mass with cork & paper clip (g)			
Mass Burned (initial - final) (g)			
Volume of water in can, mL			
Initial temperature of water, $^\circ\text{C}$			
Final temperature of water, $^\circ\text{C}$			

- Show work and answers for all trials of all calculations.**
- Mass of water heated in grams
  - Temperature change in the water:
  - A. What is the energy absorbed by the water for the snack in calories?  
 B. How many Calories did the water absorb?  $1000 \text{ cal} = 1 \text{ Cal}$
  - How many grams of food were burned?
  - Calculate the Calories per gram burned for the snack.
  - What is the serving size in grams from the package label?
  - Calculate how many Calories of energy were released per serving of food burned. Next, average the three trials for this answer before proceeding.
  - How many Calories per serving of this food are listed on the package label?
  - Calculate the percent error. Use the package label of Calories per serving as the accepted value (Question #8) and the experimental value calculated in question #7.  
 $\frac{\text{Accepted value} - \text{experimental value}}{\text{Accepted value}} \times 100 = \% \text{ error}$
  - What can account for the percent error in a Calorimeter lab?

Don't forget to write a thoughtful, complete conclusion, including error analysis.

ExplorLearning Gizmos


Name \_\_\_\_\_ Date \_\_\_\_\_

### Student Exploration: Weathering

**Weathering** abrasion, chemical weathering, clay formation, climate, dissolving, frost wedging, granite, limestone, mechanical weathering, melting, sandstone, shale, weathering.

**Prior Knowledge Questions** (Do these BEFORE using Gizmos.)

Consider the two pictures at right. Both pictures show the same kind of rock, granite.




1. Which rock do you think has been exposed on Earth's surface longer? \_\_\_\_\_

2. Why do you think so? \_\_\_\_\_

**Climate Warming**

When rocks are exposed on Earth's surface, they are gradually broken down into soil by the action of rain, ice, wind, and living organisms. This process is called **weathering**. In the Gizmo, you will explore how weathering takes place.

Use the Gizmo to explore how weathering takes place. Notice the selected **Rock Type** is Granite, a hard, dense rock.



1. Click **Play** (▶). Wait for about 5,000 simulated years, and click **Pause** (⏸). What do you notice? \_\_\_\_\_

2. Click **Fastplay** (⏏). Wait for about 50,000 simulated years. What do you notice? \_\_\_\_\_

3. Based on your observations, is weathering a fast or slow process? \_\_\_\_\_

Gizmo student exploration answer key. Gizmo answer key free student exploration calorimetry lab answers pdf. Gizmos student exploration calorimetry lab answer key. Student exploration calorimetry lab answer key.

Chapter 18 Temperature, Heat, and the First Law of Thermodynamics Problems: 8, 11, 13, 17, 21, 27, 29, 37, 39, 41, 47, 51, 57 Thermodynamics study and application of thermal energy temperature quantity More information Worksheet #17 Calculating Heat 1. How much heat is needed to bring 12.0 g of water from 28.3 C to 43.87 C, if the specific heat capacity of water is 4.184 (J/g 2). How much heat is released when 143 g of More information Name: Date: Student Exploration: Circuits Vocabulary: ammeter, circuit, current, ohmmeter, Ohm's law, parallel circuit, resistance, resistor, series circuit, voltage Prior Knowledge Questions (Do these More information Temperature I. Temperature is the quantity that tells how hot or cold something is compared with a standard A. Temperature is directly proportional to the average kinetic energy of molecular translational More information UNIT 6a TEST REVIEW 1. A weather instrument is shown below. Which weather variable is measured by this instrument? 1) wind speed 3) cloud cover 2) precipitation 4) air pressure 2. Which weather station More information by Dr. James E. Parks Department of Physics and Astronomy 401 Nielsen Physics Building The University of Tennessee Knoxville, Tennessee 37996-1200 Copyright October, 2013 by James Edgar Parks\* \*All rights More information Energy Content of Foods Computer 10 Energy content is an important property of food. The energy your body needs for running, talking, and thinking comes from the food you eat. Energy content is the amount More information Energy and Chemical Reactions Energy: Critical for virtually all aspects of Chemistry Defined as: We focus on energy transfer. We observe energy changes in: Heat Transfer: How much energy can a material More information Mixing Warm and Cold Water A Continuing Investigation of Thermal Pollution By Kevin White 1 Context: This lesson is intended for students conducting an ongoing study of thermal pollution. Perhaps, students More information Thermochemistry r2 d:\files\courses\1110-2019\heat&thermorans.doc Ron Robertson 1. What is Energy? A. Energy is a property of matter that allows work to be done B. Potential and Kinetic Potential energy More information Experiment 6 – Joule Heating of a Resistor Introduction: The power P absorbed in an electrical resistor of resistance R, current I, and voltage V is given by  $P = I^2 R = V^2 / R = VI$ . Despite the fact that More information Experiment 9 Energy content is an important property of fuels. This property helps scientists and engineers determine the usefulness of a fuel. Energy content is the amount of heat produced by the burning More information Lab Activity 3 ENERGY CONTENT OF FOOD LAB ACTIVITY 3 Energy Content of Food Purpose The purpose of the activity is to measure the energy content of different kinds of food by burning the food to warm a More information 1 Name: Lab Instructor: PREPARATION FOR CHEMISTRY LAB: COMBUSTION 1. What is a hydrocarbon? 2. What products form in the complete combustion of a hydrocarbon? 3. Combustion is an exothermic reaction. What More information Experiment 1: Colligative Properties Determination of the Molar Mass of a Compound by Freezing Point Depression. Objective: The objective of this experiment is to determine the molar mass of an unknown More information Chapter 4 Practice Quiz 1. Label each box with the appropriate state of matter. A) I: Gas II: Liquid III: Solid B) I: Liquid II: Solid III: Gas C) I: Solid II: Liquid III: Gas D) I: Gas II: Solid III: More information Chapter 4: Transfer of Thermal Energy Goals of Period 4 Section 4.1: To define temperature and thermal energy Section 4.2: To discuss three methods of thermal energy transfer. Section 4.3: To describe More information elearning 2009 Introduction The Great Peanut Bomb Calorimetry Publication No. 91259 All human activity requires burning food for energy. How much energy is released when food burns in the body? How More information Energy and States of Matter 5 Answers and Solutions to Text Problems 5.1 At the top of the hill, all of the energy of the car is in the form of potential energy. As it descends down the hill, potential More information UNIT (1) MEASUREMENTS IN CHEMISTRY Measurements are part of our daily lives. We measure our weights, driving distances, and gallons of gasoline. As a health professional you might measure blood pressure. More information 1. At which temperature would a source radiate the least amount of electromagnetic energy? 1) 273 K 3) 32 K 2) 212 K 4) 5 K 2. How does the amount of heat energy reflected by a smooth, dark-colored concrete More information Chapter 10 Temperature and Heat GOALS When you have mastered the contents of this chapter, you will be able to achieve the following goals: Definitions Define each of the following terms, and use it in an More information Burn Baby Burn: The Power Within! Feedstock Calorimetry (by Mary C. Criss & Shannon Ralph) Objective The purpose of this experiment is to determine the amount of chemical energy stored in different biofuel More information Chemical Changes Name(s) In the particle model of matter, individual atoms can be bound tightly to other atoms to form molecules. For example, water molecules are made up of two hydrogen atoms bound to More information Name: Thursday, December 13, 2007 Test 5 Review questions 1. As ice cools from 273 K to 263 K, the average kinetic energy of its molecules will 1. decrease 2. increase 3. remain the same 2. The graph below More information Chapter 10: Temperature and Heat 1. The temperature of a substance is A. proportional to the average kinetic energy of the molecules in a substance. B. equal to the kinetic energy of the fastest moving More information Name: Date: Student Exploration: Archimedes Principle Vocabulary: Archimedes principle, buoyant force, density, displace, mass, volume, weight Prior Knowledge Questions (Do these BEFORE using the Gizmo). More information 39. REASONING AND SOLUTION The heat released by the blood is given by  $Q = cmT$ , in which the specific heat capacity  $c$  of the blood (water) is given in Table 2.2. Then Therefore,  $T = \frac{Q}{cm} = \frac{20000 \text{ J}}{0.8 \text{ C} [4186 \text{ More information Heat of Solution Purpose To calculate the heat of solution for sodium hydroxide (NaOH) and ammonium nitrate (NH 4 NO 3) Background For a given solute, the heat of solution is the change in energy that More information Preview of Period 5: Thermal Energy, the Microscopic Picture 5.1 Temperature and Molecular Motion What is evaporative cooling? 5.2 Temperature and Phase Changes How much energy is required for a phase More information Experiment #4, Ohmic Heat 1 Purpose Physics 18 - Fall 013 - Experiment #4 1 1. To demonstrate the conversion of the electric energy into heat.. To demonstrate that the rate of heat generation in an electrical More information HEAT and TEMPERATURE Grade Level: 6 th grade Presented by: Sally Ferrelle, Oglethorpe Academy, Savannah, GA Length of Unit: 5 lessons 1. ABSTRACT In the unit on heat and temperature, the students will More information Test Bank - Chapter 3 The questions in the test bank cover the concepts from the lessons in Chapter 3. Select questions from any of the categories that match the content you covered with students. The More information Staten Island Technical High School Vincent A. Maniscalco, Principal The Physical Setting: CHEMISTRY Science Department Mark Erlenwein, Assistant Principal - Unit 1 - Matter and Energy Lessons 9-14 Heat, More information Educational Goals Chapter 1 Lecture Notes: Science and Measurements 1. Explain, compare, and contrast the terms scientific method, hypothesis, and experiment. 2. Compare and contrast scientific theory More information 1 Specific Heat (slope and steepness) 10 pages. According to the Physical Science text book, the Specific Heat of a material is DEFINED as the following: Specific heat is the amount of heat energy required More information EXPERIMENT 4 THE DETERMINATION OF THE CALORIC CONTENT OF A CASHEW NUT Textbook reference: pp103-105 Purpose: In this Activity, students determine how many calories are released per gram when cashews burn More information Energy Conversions 1 Energy can take many forms, but any one form can usually be converted into another. And no matter what form we talk about, we can use conversion factors to calculate equivalent amounts More information Name: Date: Student Exploration: Pulleys Vocabulary: effort, load, mechanical advantage, pulley, pulley system Prior Knowledge Questions (Do these BEFORE using the Gizmo.) 1. Suppose you had to haul a More information Buoyant Force and Archimedes' Principle Introduction: Buoyant forces keep Supertankers from sinking and party balloons floating. An object that is more dense than a liquid will sink in that liquid. If More information Mechanical Energy and Heat Purpose: Students will observe the conversion of mechanical energy to thermal energy. Introduction: The principle of conservation of energy is surprisingly new. No one person More information Name: Class: Date: ID: A PS Chapter 13 Review Modified True/False Indicate whether the statement is true or false. If false, change the word or phrase to make the statement true. 1. In all cooling More information Type: Single Date: Objective: Latent Heat Homework: READ 12.8, Do CONCEPT Q, # (14) Do PROBLEMS (40, 52, 81) Ch. 12 AP Physics B Date: Mr. Mirro Heat and Phase Change When bodies are heated or cooled their More information Energy Matters Heat Changes of State Fusion If we supply heat to a lid, such as a piece of copper, the energy supplied is given to the molecules. These start to vibrate more rapidly and with larger vibrations More information Vaporization of Liquid Nitrogen Goals and Introduction As a system exchanges thermal energy with its surroundings, the temperature of the system will usually increase or decrease, depending on the direction More information 1 Chapter 2 Measurements in Chemistry Standard measuring device Standard scale gram (g) 2 Reliability of Measurements Accuracy closeness to true value Precision reproducibility Example: 98.6 o F 98.5 o More information EXPERIMENT 4: Separation of a Mixture of Solids Read the entire experiment and organize time, materials, and work space before beginning. Remember to review the safety sections and wear goggles when appropriate. More information 6-1 Experiment 6 Coffee-cup Calorimetry Introduction: Chemical reactions involve the release or consumption of energy, usually in the form of heat. Heat is measured in the energy units, Joules (J), defined More information The First aw of Thermodynamics Q and W are process (path)-dependent. (Q = W = E int is independent of the process. E int = E int,i + Q = W (first law) Q: + heat into the system; heat lost from the More information OpenStax-CNX module: m38210 1 States of Matter and the Kinetic Molecular Theory - Gr10 (CAPS) Free High School Science Texts Project This work is produced by OpenStax-CNX and licensed under the Creative More information Objectives Explain the differences among conductors, insulators, and semiconductors. Define electrical resistance. Solve problems using resistance, voltage, and current. Describe a material that obeys More information What is Energy? What is the relationship between energy and work? Compare kinetic and potential energy What are the different types of energy? What is energy? Energy is the ability to do work. Great, but More information 1/7 2009/11/14 L. # 11:10 Manage this Assignment: Chapter 16 Due: 12:00am on Saturday, July 3, 2010 Note: You will receive no credit for late submissions. To learn more, read your instructor's Grading Policy More information Chemical versus Physical Changes Permission to Copy - This document may be reproduced for non-commercial educational purposes Copyright 2009 General Electric Company What are physical and chemical changes? More information Exam on Heat and Energy True/False Indicate whether the statement is true or false. 1. Energy is the ability to cause change. 2. Energy is measured in joules. 3. When you ride a playground swing, your More information 13 LESSON Releasing Energy From Food INTRODUCTION In Lesson 12, you explored how oxygen and nutrients react chemically in your cells to release energy. But do all foods release the same amount of energy? More information UNIT 1 THERMOCHEMISTRY THERMOCHEMISTRY LEARNING OUTCOMES Students will be expected to: THERMOCHEMISTRY STSE analyse why scientific and technological activities take place in a variety individual and group More information Name: Unit 2 - Elements, Compounds and Mixtures and Physical/Chemical Properties and Changes Day Page # Description IC/HW All 2 Warm-up IC 1 3 5 Matter Notes IC 1 6 Nuts & Bolts IC 1 7 Elements, Compounds More information 9460218 CH06 p069-080.qxd 1/20/10 9:44 PM Page 69 6 GAS PROPERTIES PURPOSE The purpose of this lab is to investigate how properties of gases pressure, temperature, and volume are related. Also, you will More information Intermolecular Forces: Introduction Intermolecular Forces Forces between separate molecules and dissolved ions (not bonds) Van der Waals Forces 15% as strong as covalent or ionic bonds Chapter 11 Intermolecular More information CHAPTER 4 THE CAUIU-CAPEYRON EQUATION Before starting this chapter, it would probably be a good idea to re-read ections 9, and 9.3 of Chapter 9. The Clausius-Clapeyron equation relates the latent heat More information Chemistry Unit 3 Reading Assignment Energy and Kinetic Molecular Theory The story behind the difficulty we have with energy is fascinating to those of us who struggle with trying to teach energy in a coherent More information 1 The average kinetic energy of water molecules increases when 1) H 2 O(s) changes to H 2 O (l) at 0°C 3) H 2 O (l) at 10°C changes to H 2 O (g) at 20°C 2) H 2 O (l) changes to H 2 O(g) at 0°C 4) H 2 O (l) More information FORM A IS EXAM 1 VERSION 1 (v1) Name: 1. DO NOT TURN THIS PAGE UNTIL DIRECTED TO DO SO. 2. These tests are machine graded; therefore, be sure to use a No. 1 or 2 pencil for marking the answer sheets. 3. More information Enzyme Lab DEFINITIONS: 1. Enzyme: 2. Catalase: 3. Catalyze: 4. Hydrolysis: 5. Monomer: 6. Digestion: BACKGROUND INFORMATION Many living tissues contain the enzyme catalase. This enzyme breaks down hydrogen More information Osmosis Computer 5 In order to survive, all organisms need to move molecules in and out of their cells. Molecules such as gases (e.g., O 2, CO 2 ), water, food, and wastes pass across the cell membrane. More information CHEMISTRY 103 Help Sheet #10 Chapter 4 (Part II); Sections 4.6-4.10 Do the topics appropriate for your lecture Prepared by Dr. Tony Jacob (Resource page) Nuggets: Enthalpy More information ES 106 Laboratory # 3 INTRODUCTION TO OCEANOGRAPHY 3.1 Introduction The global ocean covers nearly 75% of Earth's surface and plays a vital role in the physical environment of Earth. For these reasons, More information The Scientific Method (1 of 20) This is an attempt to state how scientists do science. It is necessarily artificial. Here are MY five steps: Make observations the leaves on my plant are turning yellow More information Chapter 3 Student Reading If you hold a solid piece of lead or iron in your hand, it feels heavy for its size. If you hold the same size piece of balsa wood or plastic, it feels light for its size. The More information Name: Class: Date: Unit 5 Practice Test Multiple Choice Identify the choice that best completes the statement or answers the question. 1) The internal energy of a system is always increased by. A) adding More information CHEM 15 HOUR EXAM III 28-OCT-99 NAME (please print) 1. a. given: Ni (s) + 4 CO (g) = Ni(CO) 4 (g) H Rxn = -163 kJ/mole determine H f for Ni(CO) 4 (g) b. given: Cr (s) + 6 CO (g) = Cr(CO) 6 (g) H Rxn = -26 More information Dana V. Middlemiss Fall 2002 The Structure of Water Introductory Lesson Abstract: This is an introduction to the chemical nature of water and its interactions. In particular, this lesson will explore evaporation. More information 1 n t e r a c t i n g G a l a x i e s - Making Ellipticals Te a c h e r N o t e s Author: Sarah Roberts Interacting - Making Ellipticals - Teacher Notes Making Ellipticals Making Ellipticals - Changing More information METER READERS Adapted from the Watts on Schools Program Overview: Students learn how to read electric and natural gas meters, monitor their energy use at home or at school and keep a daily record. Objective: More information 1) Error Analysis Apparatus Errors (uncertainty) Every time you make a measurement with a piece of apparatus, there is a small margin of error (i.e. uncertainty) in that measurement due to the apparatus More information SECTION 5 COMMERCIAL REFRIGERATION UNIT 21 EVAPORATORS AND THE REFRIGERATION SYSTEM UNIT OBJECTIVES After studying this unit, the reader should be able to Define high-, medium-, and low-temperature refrigeration. More information Freezing Point Depression: Why Don t Oceans Freeze? Teacher Advanced Version Freezing point depression describes the process where the temperature at which a liquid freezes is lowered by adding another More information Answer Key Homework 6 David McIntyre 1 This print-out should have 0 questions, check that it is complete. Multiple-choice questions may continue on the next column or page; find all choices before making More information CHAPTER 1 2 Ionic Bonds SECTION Chemical Bonding BEFORE YOU READ After you read this section, you should be able to answer these questions: What is ionic bonding? What happens to atoms that gain or lose More information Optimization: Optimal Pricing with Elasticity Short Examples Series using Risk Simulator For more information please visit: www.realoptionsvaluation.com or contact us at: admin@realoptionsvaluation.com More information Name: Class: Date: ID: A Chapter 2 Assessment Multiple Choice Identify the choice that best completes the statement or answers the question. Complete short answer questions on a separate sheet of paper. More information Phase Diagram of tert-butyl Alcohol Bill Ponder Department of Chemistry Collin College Phase diagrams are plots illustrating the relationship of temperature and pressure relative to the phase (or state) More information 1 Thermodynamics There always seems to be at least one free response question that involves thermodynamics. These types of question also show up in the multiple choice questions. G. S. and H. Know what More information 303 HEAT OF FORMATION OF AMMONIUM NITRATE OBJECTIVES FOR THE EXPERIMENT The student will be able to do the following: 1. Calculate the change in enthalpy (heat of reaction) using the Law of Hess. 2. Find More information Acceleration of Gravity Lab Basic Version In this lab you will explore the motion of falling objects. As an object begins to fall, it moves faster and faster (its velocity increases) due to the acceleration More information Chemistry 212 VAPOR PRESSURE OF WATER LEARNING OBJECTIVES The learning objectives of this experiment are to explore the relationship between the temperature and vapor pressure of water, determine the molar More information Eating your Energy's Worth (Lesson Plan) (Exploring energy consumption through food) Suggested Grade Level 6-8 Overview In this lesson, students will use the Energy Calculator to explore the consumption More information Lab Exercise: Dew Point and Relative Humidity Purpose: To determine the dew and point and relative humidity in the classroom, and find the current relative humidity outside. Relative humidity is a measure More information SAM Teachers Guide Heat and Temperature Overview Students learn that temperature measures average kinetic energy, and heat is the transfer of energy from hot systems to cold systems. They consider what More information CHAPTER 4 2 The Structure of Atoms SECTION Atoms KEY IDEAS As you read this section, keep these questions in mind: What do atoms of the same element have in common? What are isotopes? How is an element More information 7. The Point-Slope Form 7. OBJECTIVES 1. Given a point and a slope, find the graph of a line. Given a point and the slope, find the equation of a line. Given two points, find the equation of a line y Slope More information Chapter 1: Chemistry: Measurements and Methods 1.1 The Discovery Process o Chemistry - The study of matter o Matter - Anything that has mass and occupies space, the stuff that things are made of. This More information Heat and Temperature: Teacher s Guide Grade Level: 6-8 Curriculum Focus: Physical Science Lesson Duration: Two class periods Program Description Humans have always been feverish about temperature. But More information Introductory Chemistry, 3rd Edition Nivaldo Tro Measurement and Problem Solving Graph of global Temperature rise in 20 th Century. Cover page Opposite page 11. Roy Kennedy Massachusetts Bay Community More information 251 Name Date Partners LAB 15: HEAT ENGINES AND THE FIRST LAW OF THERMODYNAMICS... the quantity of heat produced by the friction of bodies, whether solid or liquid, is always proportional to the quantity More information Curry School of Education, University of Virginia www.teacherlink.org/content/science/ Exploring Buoyancy and Density With an Online Simulation With the Density Lab simulation at www.explorelearning.com, More information ombustion alorimetry 1 Please Note: Each lab group will be required to pick the compound they use in this experiment. The compound must contain only carbon and hydrogen or carbon, hydrogen and oxygen. More information North Carolina Testing Program EO chemistry Sample Items Goal 4 1. Consider the spectrum for the hydrogen atom. In which situation will light be produced? 3. Which color of light would a hydrogen atom emit More information activity 14 Transferring Solar Energy BROWARD COUNTY ELEMENTARY SCIENCE BENCHMARK PLAN Grade 4 Quarter 2 Activity 14 S.C.B.1.2.2 The student recognizes various forms of energy (e.g., heat, light, and electricity). More information$

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