

Teacher: Ms. Desso
Class: Physical Science
Textbook: Prentice Hall California Physical Science

Semester: Fall 2011
Date: 10/19/11

	week: 1 Date:8/22/11	week: 2 Date:8/29/11	week: 3 Date: 9/5/11	week: 4 Date: 9/12/11
Topics	<ul style="list-style-type: none"> Introduction Lab safety Notebook organization 	<ul style="list-style-type: none"> Properties of Matter 	<ul style="list-style-type: none"> Chemical vs. Physical Changes 	<ul style="list-style-type: none"> States of Matter
Standards	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 3a, 3b, 3d, 3e 	<ul style="list-style-type: none"> 3b, 5b 	<ul style="list-style-type: none"> 3d, 3e, 5d
Lecture Notes	<ul style="list-style-type: none"> Syllabus notes 	<ul style="list-style-type: none"> Properties of Matter PPT notes 	<ul style="list-style-type: none"> Chemical vs. Physical Changes PPT notes 	<ul style="list-style-type: none"> States of Matter Cornell Notes
Readings	<ul style="list-style-type: none"> Pg. 43-47 Safety in the Lab 	<ul style="list-style-type: none"> Ch. 2.1 	<ul style="list-style-type: none"> Ch. 2.2 	<ul style="list-style-type: none"> Ch. 3.1, 3.2
Homework	<ul style="list-style-type: none"> Binder Syllabus signature Safety contract Study for safety test 	<ul style="list-style-type: none"> Vocabulary ch. 2.1, 2.2, 2.3 Flash cards Copy missed safety test questions 	<ul style="list-style-type: none"> Workbook problems Ch. 2.2 	<ul style="list-style-type: none"> Ch. 3.1, 3.1 Vocabulary and flash cards Workbook 3.1, 3.2
Labs & Projects	<ul style="list-style-type: none"> Equipment identification 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Chemical vs. Physical change lab 	<ul style="list-style-type: none">
AV, Internet	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Brain pop 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Demos	<ul style="list-style-type: none"> Plant: observation versus inference 	<ul style="list-style-type: none"> Raisins in soda demo 	<ul style="list-style-type: none"> Marshmallow roasting, ice melting, water boiling 	<ul style="list-style-type: none"> Cloud in a bottle
Special	<ul style="list-style-type: none"> Put together notebooks Appointment clock partners 	<ul style="list-style-type: none"> Foldable of matter 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Tests	<ul style="list-style-type: none"> Safety Test 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Ch. 2.1 & 2.2 Quiz 	<ul style="list-style-type: none">
Points	<ul style="list-style-type: none"> Syllabus: 5 Safety Contract: 5 Safety Test: 20 Equipment Identification: 20 	<ul style="list-style-type: none"> Vocabulary: 20 Flash cards: 15 	<ul style="list-style-type: none"> Lab: 20 data + 20 analysis Workbook: 15 Quiz: 30 	<ul style="list-style-type: none"> Workbook 3.1, 3.2: 30 Vocabulary: 20 Flashcards: 15 Cornell Summary: 10

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Class: Physical Science

Semester: Fall 2011
Date: 10/19/11

	week: 5 Date:9/19/11	week: 6 Date:9/26/11	week: 7 Date: 10/3/11	week: 8 Date: 10/10/11
Topics	<ul style="list-style-type: none"> States of Matter cont., begin Atomic Structure 	<ul style="list-style-type: none"> Atomic Structure and Periodic Table Intro. 	<ul style="list-style-type: none"> Periodic Table Cont. 	<ul style="list-style-type: none"> Isotopes, Atoms and Bonding
Standards	<ul style="list-style-type: none"> 3d,3e,5d 	<ul style="list-style-type: none"> 3a, 7a, 7b 	<ul style="list-style-type: none"> 7a, 7b, 7c 	<ul style="list-style-type: none"> 3b, 3c, 3f, 7c, 9g
Lecture Notes	<ul style="list-style-type: none"> States of Matter Graphic Organizer 	<ul style="list-style-type: none"> Atom overhead picture notes Mendeleev's periodic table notes 	<ul style="list-style-type: none"> Properties of metals, metalloids, nonmetals PPT 	<ul style="list-style-type: none"> Isotope Notes Electron Arrangement PPT notes
Readings	<ul style="list-style-type: none"> Ch. 4.1 	<ul style="list-style-type: none"> Ch. 4.2 	<ul style="list-style-type: none"> Ch. 4.3, 4.4 5-4-3-2-1 Notes 4.3, 4.4 	<ul style="list-style-type: none"> Ch. 5.1
Homework	<ul style="list-style-type: none"> Study Guide Ch. 3.1 & 3.2 Ch. 4.1 Workbook 	<ul style="list-style-type: none"> Vocabulary and root words Ch. 4.1, 4.2 	<ul style="list-style-type: none"> Periodic table coloring: metals, metalloids, nonmetals 	<ul style="list-style-type: none"> Workbook ch. 5.1 Vocabulary ch. 5.1

	<ul style="list-style-type: none"> History of the atom worksheet 	<ul style="list-style-type: none"> Vocab. Flash cards 4.1 & 4.2 Atomic structure worksheet Ch. 4.2 Workbook 	<ul style="list-style-type: none"> Ch. 4.3 & 4.4 Workbook 	<ul style="list-style-type: none"> Flashcards Ch. 5.1
Labs & Projects				<ul style="list-style-type: none"> Isotope Foldable
AV, Internet		<ul style="list-style-type: none"> Bill Nye Video on atomic structure 		
Demos	<ul style="list-style-type: none"> Dry ice demos- film canister, pennies, etc. 		<ul style="list-style-type: none"> Samples of metals, metalloids, nonmetals 	
Special		<ul style="list-style-type: none"> Binder Checkpoint 	<ul style="list-style-type: none"> Periodic table game 	
Tests	<ul style="list-style-type: none"> Quiz Ch. 3.1 & 3.2 		<ul style="list-style-type: none"> Quiz Ch. 4 	
Points	<ul style="list-style-type: none"> Workbook 4.1: 15 Study Guide: 20 History of the atom worksheet: 10 Quiz: 40 	<ul style="list-style-type: none"> Bill Nye Quiz: 10 Vocabulary: 20 Flash cards: 15 Atomic structure worksheet: 20 Workbook 4.2: 15 Binder Checkpoint: 100 	<ul style="list-style-type: none"> Quiz: 40 Periodic table coloring: 10 4.3, 4.4 workbook: 30 5-4-3-2-1 Notes: 10 	<ul style="list-style-type: none"> Vocabulary: 20 Flash cards: 15 Isotope Foldable: 20 Workbook: 15

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Semester: Fall 2011
Date: 10/19/11

	week: 9 Date:10/17/11	week: 10 Date:10/24/11	week: 11 Date: 10/31/11	week: 12 Date: 11/7/11
Topics	<ul style="list-style-type: none"> Lewis dot structures, Bohr diagrams, and Ionic bonding 	<ul style="list-style-type: none"> Ionic bonding cont. & Intro. To Covalent bonding 	<ul style="list-style-type: none"> Covalent Bonding cont. , Carbon Chemistry 	<ul style="list-style-type: none"> Carbon Chemistry
Standards	<ul style="list-style-type: none"> 3b, 3c 	<ul style="list-style-type: none"> 3b, 3c 	<ul style="list-style-type: none"> 3b, 7c 	<ul style="list-style-type: none"> 3c, 6a, 6b, 6c, 9c
Lecture Notes	<ul style="list-style-type: none"> Ionic Bonding PPT 	<ul style="list-style-type: none"> Covalent Bonding PPT 	<ul style="list-style-type: none"> Covalent Bonding cont. 	<ul style="list-style-type: none"> Carbon- The element of life
Readings	<ul style="list-style-type: none"> Ch. 5.2 	<ul style="list-style-type: none"> Ch. 5.3 	<ul style="list-style-type: none"> 8.1, 8.2 	<ul style="list-style-type: none"> 8.1, 8.2
Homework	<ul style="list-style-type: none"> Workbook Ch. 5.2 Ionic Bonding Worksheet: How some compounds form Ch. 5.2 Vocabulary Ch. 5.2 Flash cards 	<ul style="list-style-type: none"> Vocabulary 5.3 Flashcards 5.3 Benchmark Study Guide 	<ul style="list-style-type: none"> Workbook 5.3 Covalent bonding worksheet Vocabulary 8.1, 8.2 Flash cards 8.1, 8.2 	<ul style="list-style-type: none"> Workbook 8.1, 8.2
Labs & Projects	<ul style="list-style-type: none"> Bonding Basics: Ionic Compounds Activity 	<ul style="list-style-type: none"> Bonding Basics: Covalent Bonding Activity 		<ul style="list-style-type: none"> Carbon-containing foods project
AV, Internet		<ul style="list-style-type: none"> Brain Pop: Atomic Bonding 		<ul style="list-style-type: none"> Hydrocarbon fuel short video
Demos	<ul style="list-style-type: none"> Lewis dot structures overhead demo 			<ul style="list-style-type: none"> Soot on glass from flame demo
Special			<ul style="list-style-type: none"> Covalent bonding video 	
Tests		<ul style="list-style-type: none"> Benchmark Exam 	<ul style="list-style-type: none"> Ionic Bonding Quiz 	<ul style="list-style-type: none"> Covalent Quiz
Points	<ul style="list-style-type: none"> Workbook: 15 Vocabulary: 20 Flash cards: 15 Bonding Basics: 30 	<ul style="list-style-type: none"> Vocabulary: 20 Flashcards: 15 Benchmark exam: 50 	<ul style="list-style-type: none"> Ionics Quiz: 40 Workbook: 15 Worksheet: 15 Vocabulary: 40 Flashcards: 30 	<ul style="list-style-type: none"> Covalent Quiz: 40 Workbook: 30

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Semester: Fall 2011
Date: 10/19/11

	week: 13 Date:11/14/11	week: 14 SHORT WEEK Date:11/21/11	week: 15 Date: 11/28/11	week: 16 Date: 12/5/11
Topics	<ul style="list-style-type: none"> Carbon Chemistry Cont. 	<ul style="list-style-type: none"> Carbon cont. & Polymers/ Crystals 	<ul style="list-style-type: none"> Chemical Changes/ Reactions and Energy 	<ul style="list-style-type: none"> Conservation of Mass & Balancing
Standards	<ul style="list-style-type: none"> 3c, 6a 	<ul style="list-style-type: none"> 3b, 3c, 6a, 9d, 9g 	<ul style="list-style-type: none"> 5a, 5b, 5c 	<ul style="list-style-type: none"> 5b
Lecture Notes	<ul style="list-style-type: none"> Carbon Compounds Crystals & Polymers PPT Notes 	<ul style="list-style-type: none"> Graphing 	<ul style="list-style-type: none"> Chemical Reactions Cornell Notes 	<ul style="list-style-type: none"> Conservation of mass overhead notes Balancing Act PPT Notes
Readings	<ul style="list-style-type: none"> Ch. 8.4 	<ul style="list-style-type: none"> Ch.5.2, 8.3, 1.5 	<ul style="list-style-type: none"> Ch. 6.1, 6.2 	<ul style="list-style-type: none"> Ch. 6.2
Homework	<ul style="list-style-type: none"> Vocabulary 8.3, 8.4 Flashcards 8.3, 8.4 Carbon worksheet 	<ul style="list-style-type: none"> Workbook 8.3, 8.4 	<ul style="list-style-type: none"> Vocabulary 6.1 Flashcards 6.1 Chemical reactions worksheet 	<ul style="list-style-type: none"> Vocabulary 6.2 Flashcards 6.2 Balancing Chemical Equations
Labs & Projects	<ul style="list-style-type: none"> Slime lab 	<ul style="list-style-type: none"> Crystal growing lab 	<ul style="list-style-type: none"> Exothermic/ Endothermic lab 	<ul style="list-style-type: none">
AV, Internet	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Crystal caves 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Brain Pop
Demos	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Paper clip chains 	<ul style="list-style-type: none"> Hot pack demo, ice pack, burning peanut 	<ul style="list-style-type: none"> Conservation of mass demo
Special	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Tests	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Carbon Quiz 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Quiz 6.1
Points	<ul style="list-style-type: none"> Slime lab: 50 Vocabulary: 40 Flashcards: 30 Worksheet: 20 	<ul style="list-style-type: none"> Crystal growing lab: 40 Carbon quiz: 40 Workbook: 30 	<ul style="list-style-type: none"> Exothermic/ Endothermic lab: 50 Vocabulary: 20 Flashcards: 15 Worksheet: 20 	<ul style="list-style-type: none"> Quiz: 40 Vocabulary: 20 Flashcards: 15 Brain Pop quiz: 10 Balancing Chemical Equations: 20

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Class: Physical Science

Semester: Fall 2011
Date: 10/19/11

	week: 17 Date:12/12/11	week: 18 SHORT WEEK Date:12/19/11	week: Date:	week: Date:
Topics	<ul style="list-style-type: none"> Acids and Bases 	<ul style="list-style-type: none"> Review 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Standards	<ul style="list-style-type: none"> 5d, 5e, 9c 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Lecture Notes	<ul style="list-style-type: none"> Acids and Bases PPT Notes 	<ul style="list-style-type: none"> Review of quarter two material 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Readings	<ul style="list-style-type: none"> 5-4-3-2-1 Notes on Ch. 7.1, 7.3 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Homework	<ul style="list-style-type: none"> Vocabulary Ch. 7.1, 7.3 Flashcards 7.1, 7.3 	<ul style="list-style-type: none"> Benchmark Study Guide 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Labs & Projects	<ul style="list-style-type: none"> Litmus Test 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
AV, Internet	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Demos	<ul style="list-style-type: none"> Household product pH 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

Special	•	•	•	•
Tests	• Ch. 6 Quiz	• Benchmark	•	•
Points	• Quiz: 30 • Litmus Lab: 40 • Vocabulary: 40 • Flashcards: 30 • 5-4-3-2-1: 15	• Benchmark: 100	•	•

Teacher Candidate: Tamara Desso

Date(s) Taught: 11/29/11

Content Area: Physical Science

Grade/Level: 8

Topic(s): Chemical Reactions: Exothermic versus Endothermic

Agenda Day 1 :

1. Warm up and homework check/ corrections (15-20 min.)
2. Demo (5-7 min.)
3. Reactions and Energy Lecture Notes (20 min.)
4. Short Video (5 min.)
5. Lab- Endothermic vs. Exothermic Reactions Part 1 (15 min.)
6. Data analysis (20 min.)

California Science Content Standards:

8.3 Structure of Matter *Each of the more than 100 elements of matter has distinct properties and a distinct atomic structure. All forms of matter are composed of one or more of the elements. As a basis for understanding this concept:*

8.3.b *Students know that compounds are formed by combining two or more different elements and that compounds have properties that are different from their constituent element*

8.5 Reactions *Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. As a basis for understanding this concept*

8.5.a *Students know reactant atoms and molecules interact to form products with different chemical properties*

8.5.c Students know chemical reactions usually liberate heat or absorb heat

8.9 Investigation and Experimentation*Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:*

8.9.b Evaluate the accuracy and reproducibility of data

8.9.e Construct appropriate graphs from data and develop quantitative statements about the relationships between variables

Learning Objectives for Content: Students will be able to recognize the reactants and products in a chemical reaction. They will be able to collect data points during laboratory activities and plot data points to form a graph. Students will be able to interpret graphs of temperature versus time to determine if a reaction is exothermic or endothermic. They will be able to identify specific indicators of a chemical versus physical reaction (bubbling, heat loss or gain, change in color, etc.).

Learning Objectives for Academic Language: Students will develop skills necessary to discern meaning of scientific words through identifying and defining root words. For example, the meanings of the root words exo-, endo-, and therm- will all be discussed during the lecture portion of class to develop better understanding of the words exothermic and endothermic. Academic language in science must include the specific style in which lab reports are written. Students will engage in writing introductory scientific lab reports that consist of a hypothesis, materials and methods, data, and results/ conclusions sections. Portions of the lab report are outlined for them while others are left for students to fill in. In this way, students become familiar with the format of lab reports while not being completely overwhelmed by them. As a part of their lab write up, students will prepare a graph of their data which will be placed in the results section. They will already have been taught (the week prior) both how to construct graphs from data tables and how to interpret graphs that have already been made.

Prerequisite Knowledge and Skills - Students will have been given a lesson on graphing and data analysis the week prior to prepare them for this data intensive lab activity. Students will need to be familiar with how to read a thermometer and act safely in the lab. They will need to have prior knowledge of the periodic table of elements and a basic understanding of chemical bonds.

LEARNING ACTIVITIES, ASSESSMENT, AND RESOURCES

Sequence of Activities -

1. **Warm up and homework check/ corrections:** Students have been trained in this class to get out their warm-up sheets from their binders at the beginning of class. Up to four warm-up questions will be posed on the overhead projector along with the objective for the day and the homework assigned for that evening. When the bell rings I will prompt the students to take out the homework from the night before and leave it open on their desks to receive credit when I walk around the room to stamp them. Students will also be asked to take out their warm-up sheet and binder reminder if they have not already done so to complete the warm-up and write down their

homework. I will give them time to perform these tasks while I walk around the room and check off that each student has completed his or her workbook assignment from the night before and settle any other issues or questions the students have. Warm-up questions will include: (1) What two types of elements form an ionic compound? A covalent compound?

(2) List 3 indicators of a chemical change (reaction), and (3) What is the difference between a dependent and an independent variable? After sufficient time has elapsed for the students to complete their assignment (around 10 min.) we will go over the warm-up and homework answers together. I will pull random name sticks from the class popsicle stick cup for students to read questions and answers. Once completed, students will be prompted to quietly put away their workbook.

2. **Demo (5-7 min.):** Prior to teaching the lesson on chemical reactions and energy transfer the students will be shown a demonstration to pique their interest in the subject matter. Students will be asked: What is energy? What is a chemical reaction? Demonstrations will include (1) hot pack chemical reaction (2) chemical to thermal energy transfer in burning peanut to boil water.

3. **Reactions and Energy Lecture Notes:** After the demonstrations, two students will be asked to hand out the lecture notes packets. The notes will include PowerPoint slides with missing words and phrases. Students will be told that the underlined words in the slides represent the missing words in their packets and that they are to write down the underlined words in their notes. Students will be asked summary questions at the end of the lecture that they are to answer individually and then we will go over as a class after about 3-5 min. I will use name sticks to call on individuals to read out their answers. Students will be told to put their notes away and I will pass out the lab activity, one per table group, while explaining to the students that we will be doing a lab in groups.

4. **Lab- Endothermic vs. Exothermic Reactions Part 1:** Students will be broken into table groups (they have done this before) and I will walk around and pass out lab buckets (containing vinegar, baking soda, thermometer, individual graph paper and tables, and paper squares) that have STOP signs on the top to prevent students from accessing the material before the instructor tells them to. Once groups have formed, we will popcorn read the instructions for part one of the lab. Students will choose one lab job in their group and write their name in the proper spot on the group handout. I will then allow each group to prepare the set up section of their lab and we will run the experiment at the same time with a stopwatch on the board. Once the experiment has been done, students will be asked to copy the group data onto their individual graph sheets found in the bucket.

5. **Data analysis:**

Students will work individually on creating their graphs, though data will be collected as groups. Once students have completed their graphs, we will interpret the data obtained as a class, looking for general trends and patterns. Students will then reexamine their initial hypotheses and determine if they should accept or reject them.

Differentiated Instruction -There are ten Asperger's Syndrome (SPE7) students in this class. They have a special education teacher who comes in with them and aids them when they are having difficulties. In particular, these students need extra prompts to open their workbooks, put binders away, etc. that other students do not need. Additionally, certain SPE7 students will use post-it notes to keep track of the number of questions that they ask during the period as they have been known to ask excessive questions or irrelevant questions, or tell irrelevant stories during class time. Additionally, these students have had conferences with myself, the special education teacher, and my master teacher to discuss any questions that they may have had during the class period. If students ask excessive questions in class I will let them know that I will answer their questions after class when we can spend more time on the subject. Certain students have trouble listening to lecture and writing down notes at the same time. These students will be given copies of the filled in notes and told to simply highlight or underline the important concepts. This way these students can focus on listening to the lecture and can go over the notes later for homework if necessary. Finally, there are students in the class that excel at science and

will likely finish tasks earlier than other students. For these students there will be challenge problems at the end of the lab for extra credit points. Of course, any student may answer these questions but many may not have time during class and may choose to fill these in as homework.

Monitoring and Assessing Learning: During the lecture, students will be asked to individually write down the answers to summary questions and then I will select random students to read their answers. If there is need for more instruction on any particular aspect of the lecture I will provide it at this point. Students will also be assessed after the lab section when they must help me to fill in the graph for my data points as they fill in theirs.

Resources and Materials -

- Computer
- White Board
- Textbook: Prentice Hall: California Focus on Physical Science and associated workbook and teacher's edition workbook
- Overhead projector
- Demo supplies: peanut, can set up, paperclips, hot pack
- Lab supplies: vinegar, baking soda, plastic baggies, thermometers, buckets, paper
- Stopwatch website: <http://www.online-stopwatch.com/>
- PowerPoint Lecture

BASIC INFORMATION

Teacher Candidate: Tamara Desso

Date(s) Taught: 12/1/11

Content Area: Physical Science

Grade/Level: 8

Topic(s): Chemical Reactions: Exothermic versus Endothermic, Begin Conservation of Mass

Agenda Day 2:

1. Warm up and homework check (10-15 min.)
2. Endothermic vs. Exothermic Reactions Part 2 (15 min.)
4. Data analysis (20 min.)
5. Class discussion (10 min.)
6. Lecture Conservation of Mass and Chemical Equations Part 1(20 min.)
7. Begin Workbook HW

STANDARDS AND OBJECTIVES

California Content & ELD Standards

8.5.b Students know the idea of atoms explains the conservation of matter. In chemical reactions the number of atoms stays the same no matter how they are arranged, so their total mass stays the same.

Learning Objective(s) for Content - Students will be able to write balanced chemical equations when given the skeletal equations. They will also be able to classify chemical reactions as synthesis, decomposition, or replacement.

Learning Objective(s) for Academic Language - Students will become familiar with the conventions of chemical equation writing. They will understand that the chemical symbols for different elements can be written together to form compounds or molecules. They will understand that the numbers in front of the compounds are coefficients and represent the number of these compounds necessary for a balanced reaction. They will also understand that subscripts on element symbols represent the number of atoms of that particular element in the compound.

Prerequisite Knowledge and Skills - Students will already be familiar with ionic and covalent bonding as well as the periodic table. They will already understand that element symbols represent atoms of specific elements that can be found on the periodic table. They will be somewhat familiar with ionic and covalent compound formation which will aid in understanding why certain chemical formulas are written as they are. For example, understanding how ionic bonds form will help students understand why Na + Cl form NaCl rather than NaCl₂.

LEARNING ACTIVITIES, ASSESSMENT, AND RESOURCES

Sequence of Activities -

1. Warm up and homework check: Students have been trained in this class to get out their warm-up sheets from their binders at the beginning of class. Up to four warm-up questions will be posed on the overhead projector along with the objective for the day and the homework assigned for that evening. When the bell rings I will prompt the students to take out the homework from the night before and leave it open on their desks to receive credit when I walk around the room to stamp them. Students will also be asked to take out their warm-up sheet and binder reminder if they have not already done so to complete the warm-up and write down their homework. I will give them time to perform these tasks while I walk around the room and check off that each student has completed his or her workbook assignment from the night before and settle any other issues or questions the students have. After sufficient time has elapsed for the students to complete their assignment (around 10 min.) we will go over the warm-up and homework answers together. I will pull random name sticks from the class popsicle stick cup for students to read questions and answers. Once completed, students will be prompted to quietly put away their workbook. We will discuss the agenda that is posted on the board so students know what to expect out of the class.

2. Endothermic vs. Exothermic Reactions Part 2: Students will be asked to take out their lab packet from the previous class period. Students will then form the same groups that they had the prior period. They will be asked to select a job that is different from the one that they had chosen for part one of the lab. As they are doing this, I will be handing out lab buckets (buckets will have a STOP sign on them so that students are not tempted to open the contents) and setting up the stop watch on the overhead projector. We will popcorn read the instructions for this lab section and perform procedures as a group.

4. Data analysis: Once the data has been collected, students will copy down the data from the group sheet onto their own individual graphing sheets. Students will then work individually for 10 minutes to complete their graphs. A timer will be started for ten minutes so that students can judge their time on task. Students that finish early will be asked to move onto the challenge section of the lab.

5. Class discussion: Once students have had ample time to work on their graphs, we will have a class discussion regarding both part one and part two of the experiment. Students will be asked what the pattern is in each of the graphs- do they stay constant, increase, decrease, both? Why do you think this is so? What can explain this phenomenon? What types of energy are present in this system? Thermal? Mechanical? Electrical? Chemical? Are the reactions exothermic or endothermic? How do you know? Were there any changes observed that would lead you to believe that this was a chemical change versus a physical change? What were they?

6. Lecture Conservation of Mass and Chemical Equations: Students will be given lecture notes with certain words omitted. They will be told that the words they need to fill in are underlined in the presentation. Students what is matter? They will also be asked if they can create matter? I will then give a lecture on conservation of mass. At the end, students will answer summary questions on the last slide and we will go over the answers as a class.

7. Begin Workbook HW: If there is time at the end of the period, students will begin working on their workbook homework.

Differentiated Instruction - There are ten Asperger's Syndrome (SPE7) students in this class. They have a special education teacher who comes in with them and aids them when they are having difficulties. In particular, these students need extra prompts to open their workbooks, put binders away, etc. that other students do not need. Additionally, certain SPE7 students will use post-it notes to keep track of the number of questions that they ask during the period as they have been known to ask excessive questions or irrelevant questions, or tell irrelevant stories during class time. Additionally, these students have had conferences with myself, the special education teacher, and my master teacher to discuss any questions that they may have had during the class period. If students ask excessive questions in class I will let them know that I will answer their questions after class when we can spend more time on the subject. Certain students have trouble listening to lecture and writing down notes at the same time. These students will be given copies of the filled in notes and told to simply highlight or underline the important concepts. This way these students can focus on listening to the lecture and can go over the notes later for homework if necessary. Finally, there are students in the class that excel at science and will likely finish tasks earlier than other students. For these students there will be challenge problems at the end of the lab for extra credit points. Of course, any student may answer these questions but many may not have time during class and may choose to fill these in as homework.

Monitoring and Assessing Learning -During the course of the lesson, formative assessments will be given. Specifically, questions will be asked of the entire class and students will be told to put one finger in the air if they believe the answer is a, two fingers in the air if they believe the answer is b, etc. so that I can get a general sense for how many students are understanding different concepts and how many need further assistance. At the data analysis step of this lab students will be asked for their input on describing patterns seen in the graphs and on what the patterns mean. After this discussion, students will be asked to answer the questions on the lab packet individually. Questions will include: (1) What observations were made that indicate a chemical reaction took place? (2) Describe the patterns in part one and part two of this lab. (3) What do the patterns tell you about the chemical reactions taking place? (4) Is reaction

one endothermic or exothermic? How can you tell? (5) Is reaction 2 endothermic or exothermic? How can you tell? Students will be graded on their participation, lab safety, graph completeness and correctness, and conclusions question section. In order for students to monitor their own progress, a stop watch will be placed on the overhead projector. Students will be told that they should pace themselves according to how much time they have left to work on a task. Students will also be instructed to monitor their own progress on the graphs and conclusion questions. They will be told that if they are having trouble seeing the patterns or making sense of the data that they should first look to their notes and try to figure it out for themselves. If they are unable to figure out the answer, they should then ask the teacher for guidance.

Resources and Material-

- Computer
- White Board
- Textbook: Prentice Hall: California Focus on Physical Science and associated workbook and teacher's edition workbook
- Overhead projector
- Lab supplies: steel wool, thermometers, vinegar, beakers, buckets, paper
- Stopwatch website: <http://www.online-stopwatch.com/>
- PowerPoint Lecture

BASIC INFORMATION

Teacher Candidate: Tamara Desso

Date(s) Taught: 12/5/11

Content Area: Physical Science

Grade/Level: 8

Topic(s): Balancing Chemical Equations

Agenda Day 3

1. Warm-up and HW check/ corrections (15-20 min.)
2. Lecture: Balancing Chemical Equations Part 2 (15 min.)
3. Effervescent tablet in water Demo (15 min.)
4. Guided Practice Problems (25 min.)
5. Individual Practice (15 min.)

STANDARDS AND OBJECTIVES

California Content & ELD Standards

8.5.b: *Students know the idea of atoms explains the conservation of matter. In chemical reactions the number of atoms stays the same no matter how they are arranged, so their total mass stays the same.*

Learning Objective(s) for Content - Students will be able to write balanced chemical equations and understand conservation of mass.

Learning Objective(s) for Academic Language - Students will become familiar with the conventions of chemical equation writing. They will understand that the chemical symbols for different elements can be written together to form compounds or molecules. They will understand that the numbers in front of the compounds are coefficients and represent the number of these compounds necessary for a balanced reaction. They will also understand that subscripts on element symbols represent the number of atoms of that particular element in the compound.

Prerequisite Knowledge and Skills - Students will already be familiar with ionic and covalent bonding as well as the periodic table. They will already understand that element symbols represent atoms of specific elements that can be found on the periodic table. They will be somewhat familiar with ionic and covalent compound formation which will aid in understanding why certain chemical formulas are written as they are. For example, understanding how ionic bonds form will help students understand why Na + Cl form NaCl rather than NaCl₂.

LEARNING ACTIVITIES, ASSESSMENT, AND RESOURCES

Sequence of Activities -

1. Warm-up and HW check/ corrections: Students will get out their warm-up sheets from their binders at the beginning of class. Up to four warm-up questions will be posed on the overhead projector along with the objective for the day and the homework assigned for that evening. When the bell rings I will prompt the students to take out workbooks and turn to the pages assigned from the night before and leave it open on their desks to receive credit when I walk around the room to stamp them. Additionally, students will pass forward their completed lab reports to the front of the room for collection. Students will also be asked to take out their warm-up sheet and binder reminder if they have not already done so to complete the warm-up and write down their homework. I will give them time to perform these tasks while I walk around the room and check off that each student has completed his or her workbook assignment from the night before and settle any other issues or questions the students have. After sufficient time has elapsed for the students to complete their assignment (around 10 min.) we will go over the warm-up and homework answers together. I will pull random name sticks from the class popsicle stick cup for students to read questions and answers. Once completed, students will be prompted to quietly put away their workbook. We will discuss the agenda that is posted on the board so students know what to expect out of the class.

2. Lecture: Balancing Chemical Equations Part 2: I will pass out notes with blanks for the students to fill in. Students will be told to quietly look over the notes so that they can know what to expect from the lecture as the rest of the class receives their notes. We will then go through the PowerPoint presentation and students will take notes. At the final slide, students will be asked summary questions which they will answer in the time given and then we will go over as a class using name sticks.

3. Effervescent tablet in water Demo: I will perform a demonstration about conservation of mass using an effervescent tablet and water in a closed container. Students will be asked: what do you expect the mass to be initially? finally? after the cap has been removed from the system? We will then perform the demo and discuss the results.

4. Guided Practice Problems: Students will be given a chemical balancing act worksheet. We will go over the first few problems as a class on the overhead projector.

5. Individual Practice: Students will complete the chemical balancing act worksheet individually.

Differentiated Instruction -There are ten Asperger's Syndrome (SPE7) students in this class. They have a special education teacher who comes in with them and aids them when they are having difficulties. In particular, these students need extra prompts to open their workbooks, put binders away, etc. that other students do not need. Additionally, certain SPE7 students will use post-it notes to keep track of the number of questions that they ask during the period as they have been known to ask excessive questions or irrelevant questions, or tell irrelevant stories during class time. Additionally, these students have had conferences with myself, the special education teacher, and my master teacher to discuss any questions that they may have had during the class period. If students ask excessive questions in class I will let them know that I will answer their questions after class when we can spend more time on the subject. Certain students have trouble listening to lecture and writing down notes at the same time. These students will be given copies of the filled in notes and told to simply highlight or underline the important concepts. This way these students can focus on listening to the lecture and can go over the notes later for homework if necessary.

Monitoring and Assessing Learning -Students will be assessed formatively during the lesson when name sticks are used to call on random students for answers to questions. I will adjust the lesson according to the responses received during the lesson. Additionally, students will be assessed after turning in their chemical balancing act assignment. These will be turned in either at the end of class or the following day depending on how far students get on this assignment.

Resources and Materials -

- Computer
- Overhead projector
- Worksheet transparency
- Demo supplies: alka seltzer, water, bottle with cap, balance
- PowerPoint Lecture
- Worksheet: Chemical Balancing Act

BASIC INFORMATION

Teacher Candidate: Tamara Desso

Date(s) Taught: 12/7/11

Content Area: Physical Science

Grade/Level: 8

Topic(s): Conservation of Matter and Chemical Reactions

Agenda Day 4

1. Warm up and HW check/ corrections (15-20 min.)
2. Review Lecture: Endothermic/ Exothermic Reactions and Balancing Equations (15 min.)
3. Review Games:
 - a. Jeopardy (20 min.)
 - b. Taboo (20 min.)

4. Study guide (15 min.)

HW: Finish Study guide, study for chapter 6 quiz

STANDARDS AND OBJECTIVES

- **California Content & ELD Standards**

8.3 Structure of Matter *Each of the more than 100 elements of matter has distinct properties and a distinct atomic structure. All forms of matter are composed of one or more of the elements. As a basis for understanding this concept:*

8.3.b Students know that compounds are formed by combining two or more different elements and that compounds have properties that are different from their constituent element

8.5 Reactions *Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. As a basis for understanding this concept*

8.5.a Students know reactant atoms and molecules interact to form products with different chemical properties

8.5.c Students know chemical reactions usually liberate heat or absorb heat

8.9 Investigation and Experimentation *Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:*

8.9.b Evaluate the accuracy and reproducibility of data

8.9.e Construct appropriate graphs from data and develop quantitative statements about the relationships between variables

8.5.b: Students know the idea of atoms explains the conservation of matter. In chemical reactions the number of atoms stays the same no matter how they are arranged, so their total mass stays the same.

Learning Objective(s) for Content -Students will become familiar with the conventions of chemical equation writing. They will understand that the chemical symbols for different elements can be written together to form compounds or molecules. They will understand that the numbers in front of the compounds are coefficients and represent the number of these compounds necessary for a balanced reaction. They will also understand that subscripts on element symbols represent the number of atoms of that particular element in the compound.

Learning Objective(s) for Academic Language - Students will develop skills necessary to discern meaning of scientific words through identifying and defining root words. Students will be familiar with the conventions of chemical equation writing. They will understand that the chemical symbols for different elements can be written together to form compounds or molecules. They will understand that the numbers in front of the compounds are coefficients and represent the number of these compounds necessary for a balanced reaction. They will also understand that subscripts on element symbols represent the number of atoms of that particular element in the compound.

Prerequisite Knowledge and Skills - Students should be familiar with exothermic and endothermic reactions as well as conservation of mass and balancing chemical equations as taught in the prior 3 class periods.

LEARNING ACTIVITIES, ASSESSMENT, AND RESOURCES

Sequence of Activities -

1. Warm up and HW check/ corrections: Students will get out their warm-up sheets from their binders at the beginning of class. Up to four warm-up questions will be posed on the overhead projector along with the objective for the day and the homework assigned for that evening. When the bell rings I will prompt the students to take out worksheets and leave them on their desks to receive credit when I walk around the room to stamp them. Students will also be asked to take out their warm-up sheet and binder reminder if they have not already done so to complete the warm-up and write down their homework. I will give them time to perform these tasks while I walk around the room and check off that each student has completed his or her worksheet assignment from the night before and settle any other issues or questions the students have. After sufficient time has elapsed for the students to complete their assignment (around 10 min.) we will go over the warm-up and homework answers together. I will pull random name sticks from the class Popsicle stick cup for students to read questions and answers. Once completed, students will be prompted to quietly put away their workbook. We will discuss the agenda that is posted on the board so students know what to expect out of the class.

2. Review Lecture: Endothermic/ Exothermic Reactions and Balancing Equations: Students will be notified in advance of the game to be played and will be told to pay attention since we will be competing in a short while. A short PowerPoint lecture will be given and students will be told to take out their notes from previous chapter 6 classes and write in the margins things that they need to remember or that seem important. I will tell them to listen for emphasis on different aspects of the lecture to figure out what details are important to write down.

3. Review Games:

a. Jeopardy: I will have set up a Jeopardy game for chapter 6. The room will be divided into two groups and they will face off against each other playing this answer-question game.

b. Taboo : I will instruct students on how to play this game as they have never played it before in my classroom. I will call on volunteers for the first round from either side of the room and will demonstrate how to play with them. The winners of this game will receive an extra credit point on their quiz.

4. Study guide: After playing the games, students will be told to work quietly on their study guide that I will have passed out. They may use books, notes, etc. to complete it. If students finish before the class period ends they will be told to study for the test.

Differentiated Instruction - Students who work very quickly on the study guide will be told to study for the quiz using their notes and book. They will also be told that they can work with another struggling student for extra credit. Some of the SPE7 students may

need extra help and I will be walking around the room to answer their questions and prompt them to take out their notes etc. in addition to the special education teacher doing so.

Monitoring and Assessing Learning - Student learning will be constantly assessed during both the Jeopardy and Taboo games. The students will be able to realize what they do not know through this game and will be encouraged to study the material to compete with their peers.

Resources and Materials -

- Jeopardy game
- Taboo game
- Review PowerPoint Lecture
- Study Guide
- Master teacher- judge of games
- Overhead projector
- Computer

BASIC INFORMATION

Teacher Candidate: Tamara Desso

Date(s) Taught: 12/9/11

Content Area: Physical Science

Grade/Level: 8

Topic(s): Acids and Bases

Agenda Day 5

1. Study for quiz, HW check (15 min.)
2. Ch. 6 quiz (25 min.)
3. Short mingle period (5 min.)
4. 5-4-3-2-1 Notes (15 min.)
5. Acids and Bases demo (15 min.)
6. Acids and Bases lecture (15 min.)

HW: Workbook section 7.3

STANDARDS AND OBJECTIVES

California Content & ELD Standards

- 8.5.e: Students know how to determine whether a solution is acidic, basic, or neutral.

Learning Objective(s) for Content - Students will be able to distinguish between acids and bases based on their properties. They will be able to tell if an acid or base is strong or weak depending on its place on the pH scale.

Learning Objective(s) for Academic Language - Students will be taught about pH and how to remember that this has to do with the concentration of H⁺ ions in solution. They will also be taught how to tell if a substance is an acid or a base by looking at its chemical formula (acids generally have H at the beginning while bases generally have OH at the end).

Prerequisite Knowledge and Skills - Students should understand the periodicity of the periodic table of elements and that different elements form compounds when combined together. They should understand that compounds generally have different chemical and physical properties than the pure elements that made them up. Students should understand that ionic compounds placed in water will dissociate into component ions.

LEARNING ACTIVITIES, ASSESSMENT, AND RESOURCES

Sequence of Activities -

- 1. Study for quiz, HW check:** Students will be told that they have ten minutes to study for their quiz in place of a warm-up today. I will ask them to get out their study guide and I will go around and stamp it for credit. We will then go over the answers using name sticks. I will ask students if they have any other questions before taking the quiz.
- 2. Ch. 6 quiz:** Students will be given as much time as needed to complete the quiz. When they are finished they will begin working on their homework for the night.
- 3. Short mingle period:** A short mingle will be given to allow students to relieve their stress from the test.
- 4. 5-4-3-2-1 Notes:** Students will take 5-4-3-2-1 notes on section 7.3 on acids and bases in their textbook. If they do not complete this in the time allowed it will be homework.
- 5. Acids and Bases demo:** I will do a demo on different acids and bases found in the home. I will use red cabbage water as an indicator and will ask the students their opinions on which products are acidic or basic. We will then create our own class pH scale.
- 6. Acids and Bases lecture part 1:** Students will take Cornell notes on acids and bases. They will be asked what they think acids and bases are at the beginning and then will fill in the summary at the end of the notes with their new perception of acids and bases. This will help students assess their own understanding.

Differentiated Instruction - As stated above, there are ten Asperger's Syndrome (SPE7) students in this class. They have a special education teacher who comes in with them and aids them when they are having difficulties. In particular, these students need extra prompts to open their workbooks, put binders away, etc. that other students do not need. Additionally, certain SPE7 students will use post-it notes to keep track of the number of questions that they ask during the period as they have been known to ask excessive questions or irrelevant questions, or tell irrelevant stories during class time. Additionally, these students have had conferences with myself, the special education teacher, and my master teacher to discuss any questions that they may have had during the class period. If students ask excessive questions in class I will let them know that I will answer their questions after class when we can spend more time on the subject. Certain students have trouble listening to lecture and writing down notes at the same time. These students will be given copies of the filled in notes and told to simply highlight or underline the important concepts. This way these students can focus on listening to the lecture and can go over the notes later for homework if necessary. Students who work quickly will be given an extra credit worksheet.

Monitoring and Assessing Learning - A chapter 6 quiz will be given during this period, graded the following day, and given back during the next class session. Students will monitor their own understanding of the material by looking at their initial perception of

acids and bases followed by their Cornell notes summary. Students will be able to follow their own progress much more closely through these exercises.

Resources and Materials -

- Computer
- Red cabbage water
- Household acids/ bases
- Acids and Bases PowerPoint Lecture
- Ch. 6 Quiz
- Overhead projector
- 5-4-3-2-1 Notes Papers
- Textbook and workbook: Prentice Hall California Focus on Physical Science