Lesson Plans for Chemistry 120 DE

# Chapter 1: Basic Concepts About Matter

## August 13, 2014

Objectives

1. Read syllabus and sign agreements.
2. Describe scientific laws, theory, model, and hypothesis.
3. Describe the properties of the solid, liquid, and gaseous states.
4. Recognize the interrelationship of the structure of matter and its physical and chemical properties.
5. Classify observed changes in matter as chemical or physical and provide specific examples of physical and chemical properties.
6. Classify matter as pure substances or mixtures.
7. Classify pure substances as elements or compounds.
8. Classify mixtures as homogeneous or heterogeneous mixtures.

Activities

1. TTW review the syllabus with the students.
2. TTW lecture on chapter 1, sections 1-6 of the text, enhancing the lecture with the PowerPoint provided on Moodle to the students.
3. TLW take notes on the presentation.
4. TLW participate in a class activity where the students are answering problems from the end of the chapter as part of a group discussion (8, 11, 17, 21, 25, 29)
5. TLW complete a set of assigned practice problems independently from the end of the chapter (9, 15, 19, 23, 27, 33, 37).

## August 14, 2014

Objectives

1. Describe the relative abundance of atoms in the Universe, in the earth’s crust, and in the human body.
2. Describe atoms and their size.
3. Describe molecules as either di-, tri-, tetra-, etc. atomic and either homo- or hetero-atomic.
4. Describe the process by which molecules are formed.
5. Describe how a chemical formula is given to an element and a molecule.
6. Determine the number of atoms of each element present in the chemical from the chemical formula.

Activities

1. TTW lecture on chapter 1, sections 7-10 of the text, enhancing the lecture with the PowerPoint provided on Moodle to the students.
2. TLW take notes on the presentation.
3. TLW participate in a class activity where the students are answering problems from the end of the chapter as part of a group discussion (41, 54, 58, 64, 75, 80, 88)
4. TLW complete a set of assigned practice problems independently from the end of the chapter (43, 56, 60, 66, 76, 83).

## August 15, 2014

Objectives

1. Describe scientific laws, theory, model, and hypothesis.
2. Describe the properties of the solid, liquid, and gaseous states.
3. Recognize the interrelationship of the structure of matter and its physical and chemical properties.
4. Classify observed changes in matter as chemical or physical and provide specific examples of physical and chemical properties.
5. Classify matter as pure substances or mixtures.
6. Classify pure substances as elements or compounds.
7. Classify mixtures as homogeneous or heterogeneous mixtures.
8. Describe the relative abundance of atoms in the Universe, in the earth’s crust, and in the human body.
9. Describe atoms and their size.
10. Describe molecules as either di-, tri-, tetra-, etc. atomic and either homo- or hetero-atomic.
11. Describe the process by which molecules are formed.
12. Describe how a chemical formula is given to an element and a molecule.
13. Determine the number of atoms of each element present in the chemical from the chemical formula.

Activities

1. TLW complete a quiz in which they must differentiate between a scientific law and a scientific theory, compare and contrast the physical states of matter, determine whether a property/change is physical or chemical, classify substances as pure substances or mixtures, classify mixtures as homogeneous or heterogeneous, classify pure substances as either elements or compounds, provide the chemical symbol for given elements, classify molecules as homo-, hetero-, di-atomic, and determine the number of atoms in a molecule based on the chemical formula.
2. TTW facilitate a discussion in which students ask for clarification on any part of the quiz they may or may not have understood.

## August 18, 2014

Objectives

1. Describe scientific laws, theory, model, and hypothesis.
2. Describe the properties of the solid, liquid, and gaseous states.
3. Recognize the interrelationship of the structure of matter and its physical and chemical properties.
4. Classify observed changes in matter as chemical or physical and provide specific examples of physical and chemical properties.
5. Classify matter as pure substances or mixtures.
6. Classify pure substances as elements or compounds.
7. Classify mixtures as homogeneous or heterogeneous mixtures.
8. Describe the relative abundance of atoms in the Universe, in the earth’s crust, and in the human body.
9. Describe atoms and their size.
10. Describe molecules as either di-, tri-, tetra-, etc. atomic and either homo- or hetero-atomic.
11. Describe the process by which molecules are formed.
12. Describe how a chemical formula is given to an element and a molecule.
13. Determine the number of atoms of each element present in the chemical from the chemical formula.

Activities

1. TTW facilitate a review session in which students are answering OWL questions on the promethean board in teams.
2. TLW compete in a review game against other teams by completing questions on the promethean board.
3. TTW answer any questions about the material students may have.

## August 19, 2014

Objectives

1. Describe scientific laws, theory, model, and hypothesis.
2. Describe the properties of the solid, liquid, and gaseous states.
3. Recognize the interrelationship of the structure of matter and its physical and chemical properties.
4. Classify observed changes in matter as chemical or physical and provide specific examples of physical and chemical properties.
5. Classify matter as pure substances or mixtures.
6. Classify pure substances as elements or compounds.
7. Classify mixtures as homogeneous or heterogeneous mixtures.
8. Describe the relative abundance of atoms in the Universe, in the earth’s crust, and in the human body.
9. Describe atoms and their size.
10. Describe molecules as either di-, tri-, tetra-, etc. atomic and either homo- or hetero-atomic.
11. Describe the process by which molecules are formed.
12. Describe how a chemical formula is given to an element and a molecule.
13. Determine the number of atoms of each element present in the chemical from the chemical formula.

Activities

1. TLW complete a test on chapter 1, covering all the objectives taught.