Lesson 1 review page 352

1. Periods

2. Groups

3. Atomic number

4. Atomic mass

5. Element 1, on the left, is a metal. Element 2, on the right, is a nonmetal.

7. Possible answers: potassium, bromine, krypton

Lesson 1 KCQ & RCQ

What physical property........? Atomic mass

What determines where an element.....? Atomic number

What does this key tell you about helium ? AN, AM, gas, symbol

What can you infer about the properties of two elements in the same group? Chemical properties are similar

How is the PT used......? Properties of the elements in the group should

relate to ones discovered

Lesson 2 review page 360

1. A metal with a high luster is shiny.

2. Ductility

3. Alkali metals

4.luster, malleability, ductility, conductivity, high density, melting point, and boiling point

5. D) reacts little with oxygen

6. Zinc, iron, strontium, barium

7. molybdenum

8. Desk and chair legs, pencil sharpeners, chalkboard tray, shelves, doorknobs,etc.

9. Copper is best because it I strong and less reactive than magnesium and potassium.

Lesson 2: KCQ & RCQ

How does the position.....? Metals are grouped towards and let and center on the PT.

Physical properties of metals: luster, malleability, ductility, conductivity, high density, melting and boiling point

Which element reacts faster with oxygen- barium or potassium? Potassium

Where would you expect .....? The right side of the PT

Lesson 3 review page 369 1-6, 9 & 10

1. Nonmetals have no metallic properties, and metalloids have some properties of metals and some nonmetals.
2. halogen
3. noble gas
4. A. chemical
5. Boron and silicon are metalloids, aluminum is a metal, and carbon is a nonmetal.
6. group 17

9. Hydrogen is a gas at room temperature, which indicates that it is a nonmetal. However, it acts chemically as an alkali metal, and as a liquid, hydrogen conducts electrical energy.

10. Group 14 has one nonmetal © and group 16 has three nonmetals (O, S, Se).

Lessons 3 KCQ &RCQ

 What are the six elements in the human body? Oxygen, Carbon, Hydrogen, Nitrogen, Phosphorus, Sulfur

What properties do nonmetals have? Gases at room temperature. Solid nonmetals are dull, brittle, and poor conductors.

Will Bromine react with sodium? Explain your answer. yes Bromine is a halogen, and sodium is a metal. They react to form sodium bromide.

Why is Hydrogen usually classified as a nonmetal? Because it is a gas a room temperature.

Where are metalloids on the periodic table? Metalloids are between the metals and the nonmetals.

why would you not use an element on the right side of the PT as a building material? These elements are brittle and many are gases at room temperature.

Homework Sheet

Lesson 1: Periodic Table

1. The periodic table is a chart that uses groups and periods to arrange elements according to their physical and chemical properties.

2. Russian chemist Mendeleev developed the periodic table by organizing elements according to atomic mass.

3. Mendeleev noticed that elements had repeating patterns, or are periodic, with properties such as melting

point, boiling point, and reactivity.

4. Moving from element to element, melting points on the periodic table first increase and then decrease.

5. Moseley fixed problems that scientist discovered with Mendeleev’s table by listing elements according to

increasing atomic number.

6. The AN of an element is the number of protons in the nucleus of each of the element’s atom.

7. Each element key on the periodic table has important information, including name, symbol, AN, and AM.

8. Both physical and chemical properties change as you read across a period on the table.

9. Almost all elements in the periodic table are metals.

10. Metals is/are on the left side of the periodic table, nonmetals is/are on the right side, except

for Hydrogen, and metalloids, which are between metals and nonmetals.

11. New metals, like Bohrium, are synthetic, or made by people.

12. The periodic table can be used to understand and predict an element’s properties.

HW#2

1. Compare Mendeleev’s and Moseley’s version of the periodic table. Mendeleev’s version included organizing by AM while Moseley’s version organized by AN.

2. Why did Mendeleev have gaps in his periodic table?

Because some elements were not discovered yet

3. Which set of elements usually has more in common, periods or groups? Explain your answer. Groups because they have similar chemical properties.

4. How could the periodic table help scientists predict the properties of new elements that might be added to it? based on the element’s chemical properties as well as their atomic number

Lesson 2: Metals

1. What are the four main properties of a metal? luster, conductivity, malleability, ductility

2. Name two differences between Alkali and Alkaline Earth metals. Alkali metals are the most reactive metal on the PT while AEM are the second most reactive. AM have the lowest density while AEM have the second lowest density.

3. What happens if Alkali metals react with water? There will be a chemical reaction.

4. What are some everyday uses of transition metals? Building, dyes, paints, jewelry, wiring, gems

5. What are some differences between transition and Alkali/Alkaline Earth metals? Transition metals have higher melting point/boiling point/density/ strength/resistance to corrosion. They are very unreactive and can exist as pure elements as well as in compounds. AM and AEM have a low density and are very reactive.

6. Why are the elements in groups 3-12 known as transition elements? They are transitioning into nonmetals or elements with no metallic properties.

7. Why are the Lanthanide and Actinide series located on the bottom of the periodic table? organization factor so period 6&7 are not longer than the other periods.

Lesson 3: Nonmetals

8. What are the four main elements of life? Which the most important? Hydrogen, Oxygen, Carbon, Nitrogen

9. Name three characteristics of nonmetals in group 14-16.

Can be free and compounds, have similar chemical properties, different physical properties

10. What can halogens react with? metals to create salts and also nonmetals

11. How are halogens similar to Alkali metals? How are they different to noble gases? Halogens and AM are very reactive and can only be found in compounds. Halogens are different to noble gases because NG are stable while Halogens are not. NG cannot be found in compounds while Halogens are only found in compounds.

12. Why weren’t noble gases discovered before constructing the periodic table? When they were, where were they placed? NG were not discovered because they were not known about since they were not found in compounds. When they were discovered, they were placed on the far right hand side of the PT with the other nonmetals.

13. What is hydrogen classified as? Why? What other properties does it have? Hydrogen is classified as a nonmetal because it is a gas a room temperature. However, it has properties similar to AM.

14. What are the 8 elements that are metalloids? Boron, Silicon, Germanium, Arsenic, Antimony, Tellurium, Polonium, Astatine

15. Why do metalloids have so many uses? Because they have properties of both metals and nonmetals. they are very versatile.

Chapter 10 Review Page 373

1. period
2. metal
3. ductility
4. metalloid
5. nonmetal
6. metalloids
7. nonmetals
8. malleability
9. ductility
10. luster
11. alkali metals
12. alkaline earth metals
13. transition metals
14. semiconductor
15. halogens
16. noble gases

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1. C) increasing atomic number
2. C) 14.01
3. B) He, Ne, Ar, Kr, Xe, and Rn
4. A) brittleness
5. B) ductility, conductivity
6. D) on the left side and in the middle
7. B) Silicon
8. B) dull appearance
9. D) Both melting and boiling point increase

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10. Answers might include Neon, Argon, Kypton…

11. Mercury is the only metal that is a liquid at room temperature.

12. All the metals reflect light, but only transition elements are strong and relatively unreactive.

13. The pattern is of elements in a period (Density increases and then decreases from left to right). Elements in a group would have similar densities.

14. Aluminum has metallic properties, such as malleability, luster, and ductility. Nitrogen has none of these properties and is a gas at room temperature.

15. Any other metal could be in group A, and any other nonmetal could be in group B.

Page 376-377

1. C
2. B
3. A
4. B
5. B
6. D
7. D
8. A
9. D
10. C
11. Group A contains metals. Group B contains nonmetals. Silicon belongs in neither group because it is a metalloid. Metalloids do not have the same properties as metals or nonmetals.
12. Group A is the best choice. It contains transition elements, which are stong metals. Group B contains nonmetals, which are brittle.
13. The PT lists unique characteristics of chemical elements and their similar properties (in groups). Scientists rely on the PT to predict the properties of synthetic elements they create in laboratories.
14. Phosphorus and Sulfur create compounds that can be found in fats, proteins, nucleic acids, and other large molecules in the human body and all living organisms. just 4 elements compose 96 percent of the human body which are nonmetals on the PT.