

Chapter 1 : Properties Of Metal And Nonmetals Worksheets - Lesson Worksheets

The periodic table of the elements is split into two main groups - metals and non-metals. Have your little chemist think about the properties, or characteristics, of metals.

The properties of metals are a result of how their atoms are arranged. The properties of metals vary depending on the metal. For example, all metals are solids at room temperature except for mercury, which is a liquid. Listed below are some of the properties of metals.

Electrical Conductivity All metals conduct electricity, which makes them essential in the manufacture of all electrical equipment. Manganese has the lowest electrical conductivity, but all metals do conduct electricity. Copper is a good conductor and is used in most electrical wiring.

Thermal Conductivity Thermal conductivity is the ability of a metal to allow heat to pass through it. All metals conduct heat but as with electrical conductivity some metals are better at it than others. Copper is also an excellent conductor of heat but bismuth has the lowest thermal conductivity of all the metals. Mercury is a metal with a low melting point, which means that it is a liquid at room temperature. This property makes mercury a great material to use in thermometers.

Malleability Malleability is the ability of a substance to be bent or rolled into sheets. Most metals are malleable which make them ideal to bend into all sorts of shapes from poles to sheets. Antimony is a brittle metal and will break if it is bent or rolled.

Strength Most metals are strong and this makes them an excellent building material for constructing bridges, buildings, cars etc. The metal sodium is a soft metal that can be cut very easily.

Magnetic Some metals, such as, iron, cobalt and nickel are magnetic which means they are attracted to magnets or can be turned into a magnet. Not all metals are magnetic.

Which of the following terms is used to describe a substance that can be bent or rolled into sheets?

Chapter 2 : Physical Properties Of Metals And Non Metals Worksheets - Printable Worksheets

Lesson revising the physical properties of metals. This website and its content is subject to our Terms and Conditions.

Students will be able to see the iron filings in breakfast cereal fortified with iron and qualitatively compare the iron content between 2 different cereals. They will also see that as part of a salt solution, some elements give off characteristic colors when placed in a flame. Students should have been introduced to the periodic table and be familiar with some of its elements. They should know that most of the elements in the table are metals. At the end of the lesson, students should:

Content background for instructor: Iron in cereal background Iron, cobalt and nickel found next to each other on the periodic table are the three magnetic elements. Generally, iron is found in our food as an iron compound which does not show visible attraction to a magnet. However, some of our breakfast cereal Total is fortified with "raw" elemental iron. When Total is blended with water, a magnet can pull out the added iron filings. When some elements are heated in a salt solution, the electrons are excited. Then as these electrons fall back from one energy level to another, they will emit photons of light. The light will have different colors depending on the element and its discrete energy levels. That is, different wavelengths of light colors will be emitted when the electrons of different elements go down the step s between their energy level s. Each element will have its own set of steps, therefore each will have its own color or set of colors. Make enough copies of the worksheet for the entire class. Prepare some iron filings in 2 Petri dishes and some zinc metal in 2 other Petri dishes. Also prepare 2 cereal stocks: Divide evenly into plastic cups so that each student will have one of the 2 cereal mixtures. Label eppendorf tubes as "unknown 1, unknown 2, etc. Make sure you have enough of the stock solutions to do the initial demo! Students should wear safety goggles at all times. From the very start tell the kids that hydrochloric acid is very dangerous so that they must never touch it - only the adult can handle the hydrochloric acid. What is an element? What are elements composed of? How is the Periodic Table organized? Discuss physical properties of the elements. Remind them that Metals make up the majority of the elements, whereas nonmetals and metalloids make up a much smaller percentage of the elements in the far right section of the table. Magnetism, and they will use this property to pull out the iron in breakfast cereal. Metal solutions will glow different colors when heated in a flame! We will explore this property today using flame tests.

Iron in breakfast cereal 1 Give each student a worksheet and a magnet. Introduce the two cereal types, i. Total and Corn Pops. Have the kids predict which will contain more iron and record their prediction. Have each student record which kind of cereal they have on their worksheet. You will see some black iron particles collect near the magnet. When you move the magnet, they dissipate. They should work with their partner, where one person holds the cup while the other one stirs. Alternately, you can use a ziplog bag to mix the cereal in water and then wait 15min. Total should have more iron than another cereal that is not iron-fortified. Record the group consensus on the worksheet. Generally, the iron in our food is found in a compound and cannot be detected by a magnet. However, Total is fortified with actual elemental "raw" iron or iron filings. The flakes are so small that they can be dissolved and digested by your stomach acids. Iron is an essential element required by our red blood cells to carry oxygen from the lungs to the muscles and other organs, thereby giving you energy. Iron-deficiency can cause fatigue, irritability and headaches. However, too much iron may cause kidney damage.

Flame tests 1 Make sure each student has their worksheet from the last station. Also, at all times, only the adult will be working the propane torch. Take a wire loop and dip it into the barium solution. Do this times. Otherwise the sodium contamination may confuse the students. The adult should still handle the hydrochloric acid. Checking for student understanding: The students should complete the worksheet as they go. At Station 1, ask the students to name some other metals that may or may not be magnetic. You can also discuss why Total has more iron than the other cereal Total chose to fortify their cereal with the element iron. At Station 2, ask the students how the flame test may be useful in science - you can use it to identify elements when you have an unknown sample. Some kids may wonder what happens if you mix 2 solutions together - have them make a prediction, then test it out! You will see both characteristic colors appear. Gather the class together at the end and ask them what they learned today. Also go over the summary questions on the worksheet, which should be a review of the introduction.

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Extensions and Reflections Reflections: At Station 1, keep the lids on the Petri dishes during the lesson to avoid creating a mess with iron filings. It may be a good idea to tape the edges with Scotch tape. Also, be prepared - the kids may ask to eat the leftover cereal, in particular the Corn Pops! At Station 2, the kids will behave themselves if you emphasize from the very start that hydrochloric acid is dangerous and can burn the skin.

Chapter 3 : Properties Of Metal Worksheets - Lesson Worksheets

The properties of metals are a result of how their atoms are arranged. The properties of metals vary depending on the metal. For example, all metals are solids at room temperature (except for mercury, which is a liquid).

Chapter 4 : Physical Science Review: Properties of Metal | Worksheet | calendrierdelascience.com

This worksheet can be used to test students by having them identify elements as metals, nonmetals, or metalloids. It also has a section to list physical characteristics of each type of element. The worksheet is available as a free download in PDF format.

Chapter 5 : Properties of Metals - IGCSE Chemistry (solutions, examples, worksheets, videos)

Properties Of Metals And Non Metals. Showing top 8 worksheets in the category - Properties Of Metals And Non Metals. Some of the worksheets displayed are Metals and non metals chapter 3, Teks lesson metals nonmetals and metalloids, Science grade 06 unit 02 exemplar lesson 01 classifying, Classifying metals nonmetals and metalloids, Metal properties characteristics uses and codes, Activity 6.

Chapter 6 : Properties of Metals Worksheet - EdPlace

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Chapter 7 : Chemical Properties Of Metals And Non Metals Worksheets - Leary Kids

9-page worksheet for intermediate high school chemistry. Comprehensive worksheet containing a variety of questions, including extension and further research.

Chapter 8 : Properties of Metals | Worksheet | calendrierdelascience.com

A handy worksheet that breaks down the properties of metal. A good physical science review sheet to keep around for reference.

Chapter 9 : Properties Of Metals And Non Metals Worksheets - Printable Worksheets

Properties Of Metal. Displaying all worksheets related to - Properties Of Metal. Worksheets are Metal properties characteristics uses and codes, Metals and non metals chapter 3, Properties of metals, Teks lesson metals nonmetals and metalloids, Workbook, Chemistry nonmetals metalloids 2, Properties of matter ws, Math on metal packet.