# Intro to solubility curves and types of solutions worksheet

6th, 7th, 8th, 9th, 10th, 11th, 12th, HomeschoolPage 2nd 6th, 7th, 8th, 9th, 10th, 11th, 12th, HomeschoolPage 2 ~Essential Skills Worksheet 26~ Organize set of work with questions related to:Types of Solutions, Saturated, Supersaturated, Unsaturated, Dilute, Concentrated, Precipitate, Using Reference Tables G - Solubility CurvesNow Available as Googleable Interactive - Online Google Form for your Google Classroom and Distance LearningWith this , evaluate and reinforce the knowledge and abilities of your chemistry students in many, if not all necessary skill areas listed below.✔ Vocabulary terms and definitions✔ Facts related to events✔ Identification and identification✔ Descriptions, states and comparisons✔ Explanations and justifications✔ , complete and solved diagrams, tables & graphs ✔ Use Reference Boards✔ Answer multiple choice questions ✔ Answer questions that are constructive Format-friendly for students and teachers✔ Organized work sets in each worksheet.✔ Emphasis on one or two related chemical concepts✔ A good thing combining simple questions and Challenging✔ Can be done for students of all skill levels✔ Few pages for quick printing and copying ✔ Grading is quick and easy for teachers Just have to give: ✔ A practice class and review✔ One or two nights of homework Some questions in this spreadsheet may require the use of the NYS 2011 Edition Chemistry Reference Table. Click here to access and download. Bundle Up to Save:61 Essential Skills Worksheets + 61 Essential Skills Lessons Ultimate Bundle Essential Skills Guided Lessons Super Bundle Essential Skills Worksheets Super Bundle Need another Chemistry Essential Skills Worksheets? I have protected you and your students! Topic 1 Bundle: Matter, Energy, and Change Spreadsheet 1: Types and Classifications of Matter. Spreadsheet 2: The stage of matter and temperature. Spreadsheet 3: Thermal and Thermal Calculation Spreadsheet 4: Characteristics of Gas and Gas Law Calculation 5: Physical and Chemical Properties and Theme Change 2 Bundle: 6 Circulatory Spreadsheet: Properties and Arrangements of TableWorksheet Circulatory 7: Types and Properties of Elements. Metal, Non-Metallic, Metalloids, Halogens, Noble GasesWorksheet 8: Periodically Trending Topic 3 Bundle: Atomic Structure Table 9: History of Atomic Models Spreadsheet 10: Structure of an atom, Atomic Mass, Isoolyceous Spreadsheet 11: Sorting electrons Spreadsheet 12: Neutral atoms and ions Theme 4 Bundle : Chemical bond spreadsheet 13: Stability and energy in the linked spreadsheet 14: Types of chemical bonds Spreadsheet 15: Types and properties of substances: Polarization, shape and intermolecular force Spreadsheet 17: Electron-dot Diagram Theme 5 Bundle: Chemical Formula and Equation Spreadsheet 18 : Types of chemical formulas Spreadsheet 19: Chemical nosed tables 20: Types of countermification chemistry and and Topic Equation 6 Bundle: Moles and Stoichiometry Spreadsheet 21: Mole and Mass Calculations in Spreadsheet formula 22: Percentage of calculation composition Spreadsheet 23: Mole calculation in Theme equation 7 Bundle: Spreadsheet Solution 24: Properties of Spreadsheet 25 solution: Solution dissolving factor * Spreadsheet 26 : Types of solutions and sociables Spreadsheet Curve 27: Humidity and parts per million spreadsheets: Effects of a soluble substance on the properties of an 8 Bundle solution topic: Acids, baselines and salts Spreadsheet 30: Acids and theoretical basis and definition Spreadsheet 31: Acid and base index and pH 32 spreadsheet : Reaction of Acids and Bases Spreadsheet 33: Acid-Base Standard Spreadsheet 34: Related to H + Concentration to pH Spreadsheet 35: Salt and Electrolytic Spreadsheet 36: Name and Write Formula: Dynamics and Balance Spreadsheet 37: Reaction Rate, Catalyst and Energy Activation Spreadsheet 38 : Energy in Chemical Reactions Spreadsheet 39: Potential Energy Diagram Spreadsheet 40: Spreadsheet Entropy 41: Physical Balance Spreadsheet 42: Chemical Balance and Principle Theme of Le Chatelier 10 Bundle: Organic Chemistry Spreadsheet 43: Properties of Organic Compounds Spreadsheet 44 : Spreadsheet of hydrocarbon compound 45: Functional group compound spreadsheet 46: Isolytic spreadsheet: Organic reaction Topic 11 Bundle: Redox and Electrolytic Spreadsheet 48: Oxidation Number Spreadsheet 49: Half-reactions: Oxidation and Reduction Spreadsheet 50: Redox: Oxidation-Reduction response Spreadsheet 51: Composition of electrolytic cells; Anolytic, Polar, Salt Bridge Spreadsheet 52: Voltaic and Cell Electrolytic Spreadsheet 53: Active Series Theme 12 Bundle: Nuclear Chemistry Spreadsheet 54: Nuclear Chemical Particle Spreadsheet 55: Nuclear Decay and Reaction Spreadsheet 56: Balancing and Writing Nuclear Equation Spreadsheet 57 : Half-life Worksheet 58: Use and benefits of radioactive isothotholyst Topic 13 Bundle: Lab Safety and MeasurementsWorksheet 59: Lab Safety, Procedures and Equipment Worksheet 6 0 : Critical Data Spreadsheet 61: Reading measurement and percentage error Some of the spreadsheets below are Solutions and Their Properties: Types of Solutions , soluness and balance in the solution, solution composition, solution concentration and humidity: Definition of concentration and humidity, Example of humidity, Dilution, preparation of diluted solution,... Once you find your spreadsheet(s), you can click the pop-out icon or download button to print or download your desired spreadsheet(s). Keep in mind that you can also find a download button below each spreadsheet. Physical properties of the solution: Molecular view of the solution process, factors affecting sociable, colligative properties,... Properties of the solution: Types of solutions, sociableness and balance in Ingredients, ... Solutions and colligative properties: Questions. Their solution and property spreadsheet: Practice the main spreadsheet. Download... Download Colligative Properties – Supplemental Worksheet: Questions such as Providing molecular formulas, van't hoff elements for the following ion compounds as well as guessing the soothipity of compounds,... Download... Download Colligative Properties: Learning Objectives: Describe the meaning of colligative properties, Use Raoult's law to determine the vapor pressure of solutions, Predict the size of vapor pressure reduction based on chemical formulas,... Solution concentration and lar: Definition of concentration and resolution, Example of resolution, Dilution, preparation of diluted solution,... Colligative Properties Worksheet: Questions with solutions. Download... Download colligative solutions and attributes: answer keys. Chemical note for grade 12 Chapter 2 Solution: Soluble and solvent, classification of solutions, Henry's Law, concentration of solutions, methods of expressing concentration of solutions, ... Download... Download If you find these spreadsheets useful, please check the Great Molecular Table | High School Spreadsheet Density Issue|  Free Thermo-Chemical Worksheet|  Reaction in the water solution table with the answer |  How Ion Compounds and Chemotherapy Are Formed Spreadsheets | Naming Compound Spreadsheet | The Importance of Carbon and Its Compounds | Properties of Metal and Non-Metallic Properties | Compound ingredients and high school spreadsheet mix | Acids and Secondary Spreadsheet Bases | Atomic Molecular Elements and Compound Tables | Classification and balance of chemical reaction tables | High School Atomic Structure Worksheet | Table of Circulating Spreadsheet Components for High School | Material Status worksheet | The status of the physical crossword table. Learning Goals In this lesson, we'll learn about the properties of solutions and look at examples of different types of solutions. We will also find out how sociable it is related to the composition of a solution and how it is affected by temperature and pressure. Learning results At the end of this lesson, you will be able to: Identify soluble substances, solvents and solution. Describe the dissolving process. Distinguish between soluble and insoluble terms, with examples. Distinguish between the solution of concentration and dilution. Determine the sociable and saturation point. Description of saturated and supersaturated solutions. Explain how temperature and pressure affect the sociableness of solids and gases in the liquid.  Click on the image to preview the spreadsheet and practical experiments for this lesson and the Grade 7 Chemistry Workbook (PDF and printed versions) Fold If salt is added to a glass of water and stirred, it seems to disappear. We know that it is still there, because the water salty taste, but we can no longer see salt. Salt has not disappeared, it has just changed its shape. The particles that make up the salt are still there, but they have been separated and interspersed with water. Personally, they are too small to see. Salt is believed to have dissolved in water. This process is also known as resyming.  Water salt soluble (Photo: Chris 73, Wikimedia Commons) Solutions form when salt and water are combined, a mixture known as a solution has been formed. The solution is a mixture that is formed when a substance, called a soluble substance, is dissolved in another substance, called a solvent. A solution is a uniform mixture. This means that it has a consistent component throughout. The dissolved particles have completely separated and dispersed evenly throughout the solvent.  A solution is a uniform mixture that is formed when a substance dissolves in a solvent. If the soluble substance and solvent are weighed separately before the solution is created, we will see that their total mass is equal to the volume of the solution.  The volume of the solution equals the combined mass of the solvent and the soluble substance. Color Solutions Salt does not transmit any color to the solution. However, if we dissolve copper sulfate crystals into a glass of water, the solution will be blue, like crystals. Copper sulfate crystals are no longer visible, but they are still there and give a blue color to the solution, like salt particles that convey a salty taste to a saline solution. Color solutions - such as colorless solutions - are transparent, which means they are clear and light easily passes through them.  Solutions may be colorless or colored, but they are always transparent (clear). (Photo by Benjah-bmm27, Wikimedia Commons; LHcheM, Wikimedia Commons) Effects of a melt on melting and boiling point The formation of a solution leads to changes in the physical properties of the solvent, such as melting point and boiling point. For example, the addition of anti-freeze to water leads to both lower freezing point and higher boiling point than pure water. This reduces the likelihood of water in the car radiator freezing in winter and boiling when the engine is hot. Similarly, the addition of salt to water reduces the freezing point. By placing salt on icy roads and footpaths, ice melts faster, reducing the risk of slipping.  Left: Radiator coolant contains anti-freeze to prevent both freezing and boiling. Right: Put salt on the ice to make the ice melt faster. (Photo by EvelynGiggles, Wikimedia Commons; Michael Pereckas, Wikimedia Commons) Soluble and insoluble substances Salt and copper sulfate can be dissolved in water because they are both water soluble. Dissolving means that water (solvent) can completely separate salt and copper sulfate beads from each other. However, not all substances are soluble in water. For example, if chalk powder or a little sand are added to the glass of water, no amount of stirring will cause them to dissolve. Chalk and sand are both insoluble in water.  Left: Epsom salts (magnesium sulfate) are soluble in water. Right: Insoluble silicon dioxide in water. (Photo: Chemicalinterest, Wikimedia Commons; PDPics, Pixabay) When an insoluble substance is added to the solvent, a hetero-hetero-substance is formed. This means that it has an unsymnged component. For example, when the chalk powder is added to the water, as soon as the stirring is stopped, it settles to the bottom.  Powder (calcium carbonate) is insoluble in water. It settles on the bottom of the tube, form a hetero-hetero-he (Photo by Walkerma, Wikimedia Commons; Danny S, Wikimedia Commons) Central and diluted solution A solution with a high percentage of soluble particles is said to be a central solution. A solution with a low percentage of dissolved particles is said to be a diluted solution. For colored solution such as copper sulfate solution, the more concentrated the solution, the darker the solution. For colorless solution such as saline, the solution of concentration and dilution also appears the same. (However, the more concentrated the saline solution, the saltier it will be.)  The solution of the solution contains more soluble substances than the diluted solution. Saturation solution Even if a substance dissolves, there is a limit on the amount of it that can be dissolved, for a certain set of conditions. For example, if salt is constantly added to a cup of brine, eventually there will be a point where no additional salt will dissolve, regardless of how much the solution is stirred. This point is called a saturation point, and the solution is said to be saturated. If any water evaporates from the saturated solution containing dissolved solids, the dissolved particles will begin to exit the solution and form crystals. For example, this is how limestone caves, such as stalactites and stalagmites, are created. Water evaporates from solutions saturated in calcium carbonate and other minerals, leading to the formation of complex solid limestone crystals.  The formation of limestone caves crystals from saturated solution. (Photo: smadalsl, Pixabay) Sociable The amount of soluble substance in a particular solvent, before the solution becomes saturated, is called its sothiping. The sociable depends on both the soluble substance and the solvent. Therefore, both need to be mentioned when giving a solubilty measure. For example, up to 360 g of salt can dissolve in 1 L of water, so we say that the sosolubleness of salt in water is 360 g / L.  Nail polish remover contains solvents such as acetone, can dissolve nail polish. (Photo: Leticia Wilson, Adobe Stock) The effect of temperature on the sociableness of solids More solids can be dissolved affected by temperature. Therefore, the dissolved value should also include a specific temperature. In the example above, the citation phalubilty for salt in water is at a temperature of 20 °C. In general, the sociableness of solids increases with temperature. For example, the sociable copper sulfate in water is 320 g/L at 20 °C, but increases to 620 g/L at 60 °C.  Sugar will dissolve more easily in hot water than cold water. (Photo: rawpixel, Pixabay) The effect of temperature on the sociableness of gas solutions can also be formed by dissolving gases in liquids. For example, the oceans contain dissolved oxygen that allows fish and other organisms to survive underwater. The amount of dissolved gas that can dissolve is also affected by temperature, but in contrast to solids. In general, the sosoluble of gases decreases with temperature. For example, the sosoluble of carbon dioxide in water is 1.7 g/L at 20 °C, but drops to 0.6 g/L at 60 °C.  Warmer seawater contains less dissolved gas, such as oxygen and carbon dioxide. (Photo: 12019, Pixabay) The effect of pressure on the sociableness of the gas (but not solids) is also affected by pressure. Therefore, in addition to temperature, the dissolved value for gases should include specific pressures. In the example above, the soluble cited for carbon dioxide in water is a pressure of 1 atm (normal atmospheric pressure). In general, the sociableity of the gas increases with pressure. For example, at 20 °C, the soothipity of carbon dioxide in water increases from 1.7 g/L at 1 atm to 15 g/L at 2 atms.  Carbonated drinks, such as soda water, contain carbon dioxide squeezed into them under high pressure. (Photo by Eirik Newth, Pixabay) Supersaturated solution As previously described, many soluble substances can be dissolved in a saturated solution by increasing the temperature (for solid sociables) or pressure (for gaseous sociables). When a solution containing more soluble substances than usual can dissolve, it is said to be supersaturated. However, when the temperature or pressure drops, the additional sociable substance will come out of the solution. For a solution containing solid soluble substances, such as a saline solution, this will lead to the formation of crystals. For a solution that contains gaseable substances, such as carbonated water, this will lead to air escaping into the atmosphere.  Fresh water is supersaturated with carbon dioxide; it will eventually be flat if the lid is left. (Photo: StockSnap, Pixabay) Supersaturated sugar solutions are often used in confectionery making, such as toffee and caramel. The mixture is heated to dissolve excess sugar, then cooled, resulting in crystalry lines. This process can also be used to sulfate crystals in the laboratory. Toffee and copper sulfate crystals are both the result of slow cooling of the supersaturated solution. (Photo by Crystal Titan, Wikimedia Commons; Stratford490, Wikimedia Commons) Types of solutions You can think of solutions as liquids, but they can also be gases or solids. Similarly, sociables and solvents can be solids, liquids or gases. Some examples of solutions that are not formed from liquid-soluble solids are listed below. A gas dissolved in the gas. Entonox is a mixture of nitrous oxide (laughing gas) and oxygen, used to relieve pain. Entonox (Photo: Owain.davies, Wikimedia Commons) A liquid-soluble gas. For example, hydrochloric acid. Hydrochloric acid is formed by dissolving hydrogen chloride gas in water. Hydrochloric acid (Photo: Walkerma, Wikimedia Commons) A liquid dissolved in a liquid. For example, hydrogen peroxide solution. Hydrogen peroxide solution is formed by dissolving hydrogen peroxide in water. Hydrogen peroxide solution (Photo: Patcat88, Wikimedia Commons) A solid dissolved in solids. Metal alloys, such as brass, are formed by combining two metals, in this case copper and zinc; The metal is melted, then mixed and cooled back to a solid. Brass (metal alloy) (Photo: schuetz-mediendesign, Pixabay) Liquid dissolved in solids. Amalgam is a type of metal alloy in which mercury, which is liquid, is combined with other metals, including silver, tin and copper. Amalgam dentistry (Photo: Kauzio, Wikimedia Commons) Solutions can have more than one sociable substance, and this can be a mixture of solids, liquids and gases. For example, soft drinks have many ingredients, including sugar (solid), food coloring (liquid) and carbon dioxide (gas), all dissolved in water. Soft drinks (Photo: brooklynphotoshoot, Pixabay) Summary A solution is a uniform mixture containing a solvent-soluble substance. A solution with a melting and boiling point differs from the original solvent. When a substance (soluble) dissolves, its particles separate and disperse evenly throughout the dissolved environment (solvent). Only soluble substances in a particular solvent can dissolve and form a solution. Insoluble substances are insoluble and lead to hethythy mixtures when added to the solvent. The solution of the solution has a high dissolving rate, while the diluted solution has a low solusis rate. For color solution, the color intensity will reflect the degree of concentration or dilution of the solution. Sociable refers to how much of a particular soluble substance can dissolve in a certain solvent. The sociable depends on both the soluble substance and the solvent. Sociables are also affected by environmental factors such as temperature and pressure. Increasing the temperature leads to an increase in the sociableness of solids in the liquid. Rising temperatures lead to a decrease in harmony in the liquid. Increased pressure leads to an increase in the sociableness of gases in the liquid. The saturated solution contains the maximum amount of dissolving in the solvent, at specific temperatures and pressures. A supersaturated solution containing more soluble substances than usual can be dissolved. These results are due to dissolving solids at rising temperatures or gases at increased pressure. The solution can be gas liquids or solids. Similarly, sociables can gas liquids or solids. The solution can contain many soluble substances.  (Photo: bdyczewski, Pixabay)  Click on the image to preview the spreadsheet and practical experiments for this lesson and the Grade 7 Chemistry Spreadsheet versions (PDF and print version) )

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