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| Guided Notes: Properties of Water | |
| **Water%20moleculeBrainstorm: List 5 things you know about water.** |  |
| **What is water?** | * **H2O**…this means 1 molecule of water contains \_\_\_\_\_\_\_\_ atoms of **Hydrogen** and \_\_\_\_\_\_\_\_ atom of **Oxygen**. * Water covers \_\_\_\_\_\_\_\_ of the Earth’s surface and makes up \_\_\_\_\_\_\_\_ of all living cells!! |
| **image?id=96904&rendTypeId=4Atomic Structure of Water** | * Each **Hydrogen** atom is held onto the **Oxygen** atom by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| **waterUsing the diagram below, complete the table to the right.** | |  |  |  | | --- | --- | --- | |  | **HYDROGEN** | **OXYGEN** | | **PROTONS (+)** |  |  | | **NEUTRONS (0)** |  |  | | **ELECTRONS (-)** |  |  | |
| **What is a Chemical Bond?** |  |
| **ionicList 4 Types of Chemical Bonds** |  |
| **IONIC BONDING** | * An **ionic bond** forms when 1 or more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from one atom to another. * If a molecule has more protons than electrons, it carries an overall \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge. * If a molecule has more electrons than protons, it carries an overall \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge. * **Example:** |
| **COVALENT BONDING** | * A **covalent bond** forms when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between atoms, **NOT** transferred, the resulting structure is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * **Example:** |
| **polar_molecules-h2oPOLAR COVALENT BONDING** | * **Polar covalent bonds** form when sharing occurs in an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ manner, the result is a molecule with no net charge. * Opposite ends of the molecule are partially \_\_\_\_\_\_\_\_ and partially \_\_\_\_\_\_\_\_, depending on the distribution of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * **Example:** |
| **Good to know…** | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bonds are stronger than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bonds. * **Covalent bonds** do not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in water. * **Dissociate** means… |
| **Hydrogen%20BondHYDROGEN BOND** | * A **hydrogen bond** forms… * Easy to break * **Key Point:** The numerous special properties of water are made possible by its ability to form multiple H bonds. |

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| **BRAIN POP ACTIVITY** | |
| 1. **Draw and label a molecule of water.** | 1. **What is one effect of water’s “stickiness,” or cohesion?** 2. The salt that forms in ocean water. 3. The surface tension that forms on lakes/ponds. 4. The waves you see in lakes & oceans. 5. The currents that form in streams & rivers. |
| 1. **What might happen if water did not have a slight (+) charge on one end & a slight (-) charge on the other?** 2. Water would not be able to freeze or boil. 3. Water would be neither “hard” nor “soft”. 4. Water molecules would not clump into droplets. 5. Only saltwater could exist on Earth. | 1. **In the movie, Tim says that water’s versatility allows for chemical reactions vital to life. What does this mean?** 2. Water has many uses & applications. 3. Water can be found in many places on Earth. 4. Water can exist as a solid, liquid, or gas. 5. Water often contains many chemicals. |
| 1. **Water is known as the “universal solvent.” What is the best synonym for “solvent”?** 2. A substance that dissolves other substances. 3. A substance that exists as a liquid at room temperature. 4. A substance that is found almost anywhere on Earth. 5. A substance that is necessary for life. | 1. **If you weigh 100kg, how much would you weigh if all water was removed from your body?**   [http://chrome.brainpop.com/graphics_pool/95/95922.png](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&docid=hDCEEB6B6Wr2yM&tbnid=lYAFZtEvzZuNUM:&ved=0CAUQjRw&url=http%3A%2F%2Fchrome.brainpop.com%2Fscience%2Fearthsystem%2Fgroundwater%2Frelated_topics_f.weml&ei=92lNUobVI4Xm8QSS2IHIBg&bvm=bv.53537100,d.aWc&psig=AFQjCNFOO42YjA-cDGDGbiuvEjLWL44Tng&ust=1380891503397840)   1. 65kg 2. 45kg 3. 50kg 4. 35kg |