**Foods 2.00 Word Wall- Vocabulary and Questions to help you prepare for your test.**

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| Matter: | Understanding the physical properties of foods is crucial in product development, process design, shelf life, and quality. Therefore, food technologists must understand the changes to the physical properties of food.  Changes include:  Changing its shape or \_\_\_\_\_\_\_\_\_\_\_\_\_  Changing its p\_\_\_\_\_e  Changing its temperature without changing its \_\_\_\_\_\_\_\_\_\_\_\_\_ identity. | A phase change is a physical change in the state of matter that does not change the molecular structure.  The three states of matter are:  1.  2.  3. |
| Thermodynamics, heat transfer, and microwave all require knowledge about the types of energy and temperature. Energy measured by heat and temperature, affects changes in the physical, as well as, chemical properties of food. The types of energy and an example for each include:  M\_\_\_\_\_\_\_\_\_\_\_\_\_:  C\_\_\_\_\_\_\_\_\_\_\_\_\_\_:  E\_\_\_\_\_\_\_\_\_\_\_\_\_\_:  R\_\_\_\_\_\_\_\_\_\_\_\_\_\_: | Heat is transferred by one of three methods:  C\_\_\_\_\_\_\_\_\_\_\_: Heat moves from one particle in a substance to another by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  C\_\_\_\_\_\_\_\_\_\_\_: movement in the substance being heated.  R\_\_\_\_\_\_\_\_\_\_\_: Waves of energy that are absorbed by a substance. | Which methods of heat transfer are used as a result of cooking in a solar oven?  Which type of energy is produced by microwave ovens and stove coils?  Which type of energy is measured by temperature?  Which type of energy is created by the movement of electrons? |
| Frying a steak over a stovetop and sautéing brussel sprouts are examples of which type of heat transfer?  Which source of radiant heat is more likely to result in uneven heat distribution?  Microwaves, irradiation, or the sun | Heating shortening to melt it is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ change.  In which phase change is latent heat being released? | Elements:  C  H  Cl  K  O  Elements and compounds are classifications of \_\_\_\_\_\_\_\_\_ substances. |
| Compounds:  NaC2-  Na Cl- | Atomic number:  Carl has determined that hydrogen will bond with one other atom. Which part of the Periodic Table did he use?  Carrie has determined that oxygen will bond with two other atoms. Which part of the Periodic Table did she use? | Acids and bases (acidity and alkalinity) are chemical properties commonly studied by food technologists.  An acid can donate \_\_\_\_\_\_ ions. Acids such as lemon juice, usually have a \_\_\_\_\_ taste, sting when touched and react strongly when combined with \_\_\_\_\_\_\_\_\_\_.  Bases accept\_\_\_\_\_\_ ions. Ex: soap, \_\_\_\_\_\_\_\_\_ taste, feels slippery, doesn’t react with \_\_\_\_\_\_\_\_\_\_. |
| Chemical properties of food include:  pH-  Total Solids-  Ash-  Titratable acidity-  Total sugars-  Total fatty acids | A chemical change occurs whenever new substances with different chemical andphyiscal properties are formed.  Changes in color, odor, flavor, release of gas.  Is there a chemical change when frozen peas to an olive green after cooking? | Is there a chemical change when water and baking powder are mixed?  Is there a chemical change when grapes ferment?  Is there a chemical change in cooking vegetables?  Is there a chemical change when bubbles rise in a yeast starter? |
| Examples of subjective method include:  Appearance  Texture  Flavor | Sensory analysis is conducted by:  Food scientists  Trained \_\_\_\_\_\_\_\_\_ panels  Consumers using valid and reliable scoring forms | Acids and bases are related compounds that affect the quality (color, taste, texture) and safety of food. They are commonly identified by:  Sensory analysis  Organic dyes  pH and titration |
| |  |  | | --- | --- | | Acids | Bases | | Taste  \_\_\_\_\_\_\_\_\_\_\_  Turn litmus \_\_\_\_\_\_\_  pH between 0 and \_\_\_\_\_. | Taste \_\_\_\_\_\_\_\_\_\_\_\_\_  Turns litmus \_\_\_\_\_\_\_\_\_  pH between 7.1 and \_\_\_\_\_. | | Food Scientists need to know the pH value of food because different pH values affect the quality and safety of the food.  Quality- pH affects color, texture and stability of baked goods like angel food cake, white cake, and chocolate cake. pH is also tested to determine the harvest time of many food likes grapes ( to make wine). | pH affects food safety.  Foods are generally acid (less than \_\_). Pathogenic bacteria can be grown when the pH is above 4.6.  In processing, acids needs to be formed through fermentation or directly added to food to make them safe.  Example is when canning or brewing. |
| * pH scale is between 0 and 14. * pH is an expression of the concentration of hydrogen and hydroxide ions in an aqueous solution. * pH is measure using \_\_\_\_\_\_ paper or a pH meter. * Titration is another way to measure acids and bases in food. It is the process of adding an acid with a known pH to a base or adding a based with a known pH to an acid. | A neutral solution has equal amounts of positive and \_\_\_\_\_\_\_\_\_ ions.  Bases have a \_\_\_\_\_\_\_\_\_ charge.  Baking soda and egg whites are examples of foods that are \_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Orange juice would taste\_\_\_\_\_\_\_\_\_.  When you dip litmus paper into a low acid beverage like wine, it will turn the paper \_\_\_\_\_\_\_. | A glass of soda has a pH of 4.0. It is an example of a high \_\_\_\_\_\_ food.  Bases are bitter in taste, this is an example of \_\_\_\_\_\_\_\_\_ analysis.  Tap water is generally neutral, a pH of \_\_\_\_\_\_\_.  Indicators and titrations measure the power of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions.  Alex noticed that the juice of a lemon is sour and the peel is bitter. The lemon peel is \_\_\_\_\_\_\_\_\_ but the lemon juice is \_\_\_\_\_\_\_\_\_. Cray, cray! |
| Having a pH higher than 4.6 would mean that you could be at risk for \_\_\_\_\_\_\_\_\_\_\_\_ contamination or growth. | The aging of an egg \_\_\_\_\_\_\_\_\_\_\_ the acidity of the egg. That makes it more likely to have bacterial contamination or growth. |  |