Chemical and Physical Changes Study Guide

1. A change in size, shape, or state of matter that does not change into a new kind of matter is a – **physical change**
2. When you make a paper airplane from a sheet of paper, which physical property did you change – **shape**
3. What type of change takes place when you separate a mixture – **physical change**
4. The best way to separate a mixture of salt and water is by – **evaporation**
5. The best way to separate a mixture of peas and sand is by **– using a strainer**
6. The best way to separate a mixture of water and pepper is by – **using a filter**
7. The best way to separate a mixture of pennies and paper clips is by – **using a magnet**
8. If you combine two or more substances that each keep their physical properties you create a – **mixture.** Mixtures do not result in new matter forming and are physical changes**.**
9. When one substance is dissolved into another and they are mixed evenly you create a – **solution**. Solutions do not result in new matter forming and are physical changes.
10. When water changes states from liquid to solid to gas it is because of differences or changes in – **temperature.** Most changes in state are physical changes because they do not result in new matter.
11. Another term for a chemical change is – **chemical reaction**
12. A change in matter that produces new kinds of matter with different properties is a - **chemical change**
13. Adding \_\_\_\_\_\_\_\_\_\_ to water will result in a chemical change - **an antacid tablet**
14. If you \_\_\_\_\_\_\_\_ paper, it will result in a chemical change – **burn**
15. Other examples of chemical changes include:

**a banana changes from yellow to brown.**

**milk sours and turns from a liquid to a solid.**

**bubbles form when baking soda is added to vinegar**

1. In a chemical reaction the matter that you start with is called – **reactant**

17. When iron is combined with oxygen in water, rust is formed – **the oxygen and iron are**

 **reactants**

1. The newly formed matter from a chemical reaction – **product**
2. When an iron bar rusts in the rain why is this a chemical change – **A new substance, rust, forms on the iron**
3. When wood is burned the cellulose combines with oxygen to create carbon dioxide, water vapor and ashes. **The ashes are the product of the reaction**
4. Which material below underwent a chemical change? **Paper, because burning is a chemical reaction**

Results of extreme heating of materials

|  |  |
| --- | --- |
| Material  | Result of heating |
| Ceramic tile | Gets hot and glows |
| Lead | Melts |
| **Paper** | **Catches fire** |
| Water | Boils |
|  |  |

1. All of the examples of water changing state listed below are – **physical changes**

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| **How Does Water Change** |
| Heat water so it turns into vapor or steam |
| Freeze water into ice |
| Ice melts into water |
| Water vapor condensing into a liquid on a window or cup/glass |

|  |  |
| --- | --- |
| Physical Change | Chemical Change |
| Tearing newspaperMixing water with sugar or saltA cup of water evaporatingCutting a sandwichChocolate meltingFreezing juiceWater condensing on a windowBoiling waterSeparating a mixture | Mixing water with an antacid tabletBurning paper A cake bakingA penny turning greenA nail rustingBurning trashFireworks explodingBrowning a marshmallowBubbles forming when baking soda is added to vinegarA banana changes from yellow to brown |