

Identify each of the following changes as physical (P), chemical (C), or a nuclear (N).

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| <p>1. P You cut your hair.</p> <p>3. C Baking soda reacts with vinegar and forms a gas.</p> <p>5. P An aspirin is crushed into fine powder.</p> <p>7. N Fission of uranium into xenon and strontium.</p> <p>9. P Diamonds are used to scratch glass.</p> <p>11. P A piece of paper is crumpled up.</p> <p>13. C Food spoiling.</p> <p>15. P A candle melting.</p> <p>17. P Salt dissolves in water.</p> <p>19. P A piece of copper is cut in half.</p> <p>20. P A sugar cube is ground up.</p> <p>22. P Ethyl alcohol boils at 79°C.</p> <p>24. C Fireworks explode.</p> | <p>2. P Making a peanut, pretzel and cereal mixture.</p> <p>4. P A piece of metal is bent in half.</p> <p>6. C Copper turns green when exposed to the environment.</p> <p>8. C Baking cookies.</p> <p>10. C A tree burns to form ashes.</p> <p>12. P Water freezes to form ice.</p> <p>14. C A candle burning.</p> <p>16. N Fusion of hydrogen atoms into helium.</p> <p>18. C Hydrochloric acid reacts with magnesium to produce hydrogen gas.</p> <p>21. P Ethyl alcohol evaporates.</p> <p>23. C Paper burns.</p> <p>25. C Alka-Seltzer gives off CO<sub>2</sub> when added to water.</p> |
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Determine if each of the following is a mixture or a pure substance. If it is a mixture, identify if the mixture is homogeneous or heterogeneous. If it is a pure substance, identify if the substance is an element or a compound.

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|---|---|----------------------------|
| 1. Sugar (C <sub>12</sub> H <sub>22</sub> O <sub>11</sub> ) <b>PS C</b> | 2. Liquid nitrogen <b>PS E</b>                | 3. Apple juice <b>M Ho</b> |
| 4. Ocean water <b>M Ho</b>  | 5. Methane gas (CH <sub>4</sub> ) <b>PS C</b> | 6. Gasoline <b>M Ho</b>    |
| 7. Coffee <b>M Ho</b>   | 8. Lucky Charms® cereal <b>M He</b>           | 9. Wood <b>M He</b>        |
| 10. Pencil <b>M He</b>  | 11. Hot fudge sundae <b>M He</b>              | 12. Silver <b>PS E</b>     |
| 13. Pepperoni Pizza <b>M He</b>   | 14. Mercury <b>PS E</b>                       | 15. Big Mac® <b>M He</b>   |

Locate these areas on the Periodic Table.

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|----------------------|----------------------|------------------|
| 1. Halogens          | 2. Lanthanide Series | 3. Noble Gases   |
| 4. Earth Metals      | 5. Transition Metals | 6. Alkali Metals |
| 7. Transition Metals | 8. Actinide Series   | 9. Metalloids    |
|                      |                      | 10. Alkaline     |
|                      |                      | 11. Inner-Tr     |

