

Elements, Compounds, and Mixtures

Classify each of the pictures below by placing the correct label in the blanks below:

A= Element

D= Mixture of compounds

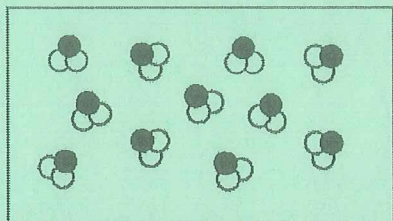
B= Compound

E= Mixture of elements and compounds

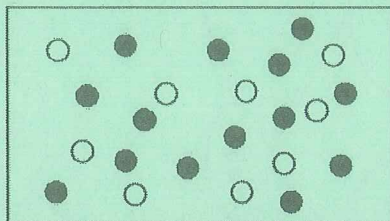
C= Mixture of elements

Each circle represents an atom and each different color represents a different kind of atom. If two atoms are touching then they are bonded together.

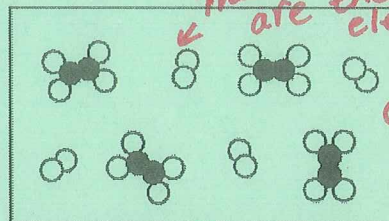
These two atoms are the same element so considered an element.



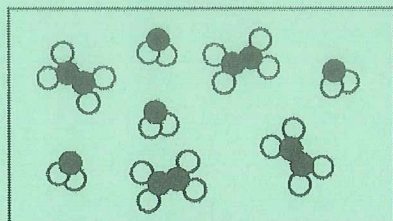
1) B



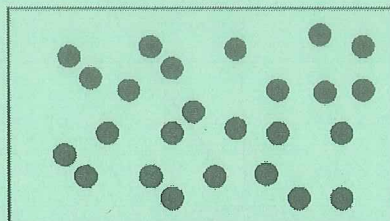
2) C



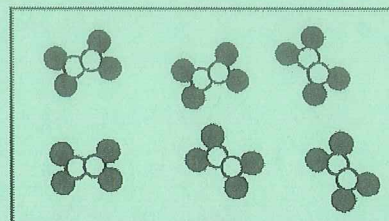
3) E



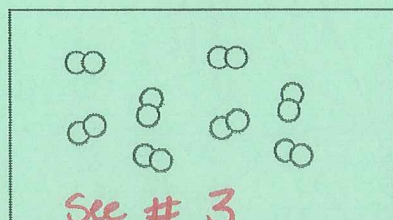
4) D



5) A

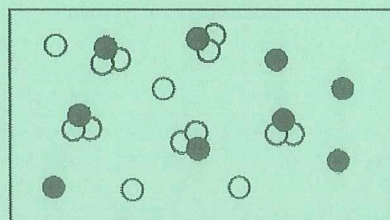


6) B

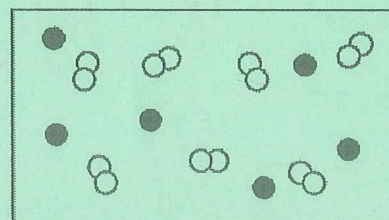


See # 3

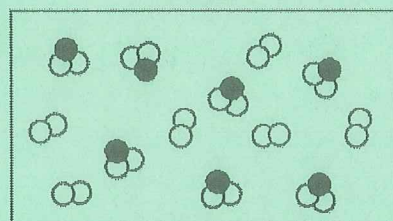
7) A



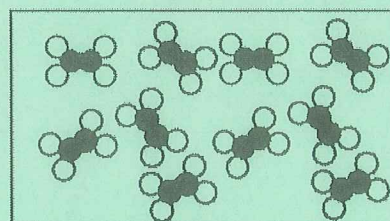
8) E



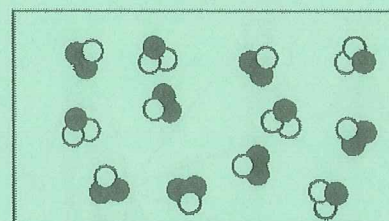
9) C



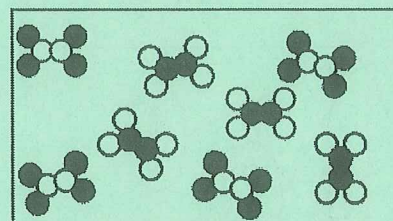
10) E



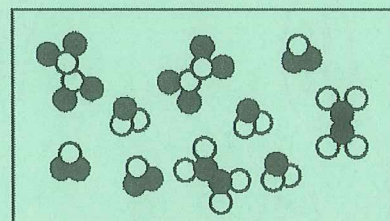
11) B



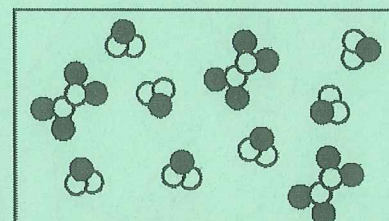
12) D



13) D



14) D



15) D

Physical and Chemical Changes

Name: BETH "KEY"

Date: _____ Hour: _____

Consider dissolving to be mixing of two or more substances in a uniform manner.

Place a check in the appropriate column:

Change	Physical Change	Chemical Change
Salt dissolves in water.	✓	
Hydrochloric acid reacts with magnesium to produce hydrogen gas.		✓
A piece of copper is cut in half.	✓	
A sugar cube is ground up.	✓	
Water is heated and changed to steam. <i>change of state is a physical change.</i>	✓	
Iron rusts.		✓
Ethyl alcohol evaporates.	✓	
Ice melts.	✓	
Milk sours (goes bad).		✓
Sugar dissolves in water.	✓	
Sodium and potassium react violently with water.		✓
Pancakes cook on a griddle. <i>The browning of food is a chemical change.</i>		✓
Grass grows on a lawn.		✓
A tire is inflated with air.	✓	
Food is digested in the stomach.		✓
Water is absorbed by a paper towel.	✓	
Ethyl alcohol boils at 79°C.	✓	
Paper burns.		✓
Water freezes at 0°C.	✓	
Fireworks explode.		✓
Alka-Seltzer gives off carbon dioxide when added to water.		✓
Clouds form in the sky.	✓	

NAME BETH "KEY"

INSTRUCTIONS: Write E in the blank if the material is *heterogeneous* or O if it is *homogeneous*.

- | | | | |
|--------------------------------|----------|-------------------------------|----------|
| 1. Wood | <u>E</u> | 6. Dirt | <u>E</u> |
| 2. Freshly-brewed black coffee | <u>O</u> | 7. Sausage-and-mushroom pizza | <u>E</u> |
| 3. Water | <u>O</u> | 8. Air | <u>O</u> |
| 4. Lucky Charms® | <u>E</u> | 9. Milk | <u>O</u> |
| 5. Salt | <u>O</u> | 10. Gold | <u>—</u> |
- From the faucet
If pure water, does
not apply*
- (Iodized)
If pure salt, does not apply.*
- Element
Cannot be described
as E or O*

INSTRUCTIONS: Classify each of the following as an *element* [E], a *compound* [C], or a *mixture* [M].

- | | | | | |
|------------------------|---|----------|--------------------|----------|
| 11. Gold | <u>Au</u> | <u>E</u> | 16. Air | <u>M</u> |
| 12. Water | <u>H₂O</u> | <u>C</u> | 17. Carbon dioxide | <u>C</u> |
| 13. Seawater | | <u>M</u> | 18. Silver | <u>E</u> |
| 14. Sugar | <u>C₁₂H₂₂O₁₁</u> | <u>C</u> | 19. Ice | <u>C</u> |
| 15. A chocolate sundae | | <u>M</u> | 20. A Big Mac® | <u>M</u> |

INSTRUCTIONS: Classify each of the following properties of matter as *physical* [P] or *chemical* [C].

- | | | | |
|------------------------------|----------|------------------------------------|----------|
| 21. Color | <u>P</u> | 26. Reacts violently with chlorine | <u>C</u> |
| 22. Density | <u>P</u> | 27. Good conductor of heat | <u>P</u> |
| 23. Burns easily (flammable) | <u>C</u> | 28. Dissolves readily in water | <u>P</u> |
| 24. Not affected by acids | <u>C</u> | 29. Melts at 145 °C | <u>P</u> |
| 25. Boils at 450 °C | <u>P</u> | 30. Malleable | <u>P</u> |

INSTRUCTIONS: Classify each of the following changes in matter as *physical* [P] or *chemical* [C].

- | | | | |
|--|----------|--------------------------------|----------|
| 31. Grinding chalk into powder | <u>P</u> | 36. Burning gasoline | <u>C</u> |
| 32. Dissolving salt in water | <u>P</u> | 37. Hammering gold into foil | <u>P</u> |
| 33. Dissolving <u>Reacting</u> zinc in acid | <u>C</u> | 38. Melting ice | <u>P</u> |
| 34. Tearing a piece of paper | <u>P</u> | 39. Digesting food | <u>C</u> |
| 35. Stretching copper into wire | <u>P</u> | 40. Making hydrogen from water | <u>C</u> |