Review & Recap: PHYSICAL PROPERTIES & CHANGES

PART 1 - MATCHING
1. Physical property
2. Solubility
3. Density
4. Physical change
5. Polarity

a. how easily a substance dissolves in another substance
b. an objects attraction to another object (magnetic, electric)
c. an observable characteristic without modifying the object.
d. a change in state (solid, liquid, gas) of an object
e. how tightly of loosely atoms are packed in a substance.

PART 2 - WAYS MATTER PHYSICALLY CHANGES
Physical changes involve physically altering or modifying the appearance of a substance without altering the chemical makeup of that substance. The size, shape, color, length, or state of the object may change, but the chemical composition of that substance remains the same. For example, tearing paper into small pieces changes the appearance of the paper, however the substance remains paper.

A phase change is also considered a physical change. It involves adding or removing energy between the 3 states, or phases, of matter. The 3 primary states of matter are solid, liquid and gas. An ice cube melting changes states from solid to liquid, however the chemical makeup of the substance is still water (H_2O). One way to identify a physical change is to consider whether or not the change is reversible. An ice cube melting into liquid can be frozen and turned into a solid again. Consider these ways for physical changing matter:
1. Crushing
2. Melting
3. Boiling
4. Condensing
5. Breaking
6. Dissolving
7. Tearing
8. Freezing
9. Cutting
10. Evaporating

1. List 5 actions to physically change matter:
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

2. True or False: Physical changes may be reversible. Circle one: True False
3. True or False: A new substance is created during a physical change. Circle one: True False
4. Think of 1 example (other than ice cube to water and back) that can be classified as a physical change.
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

PART 3 - SENTENCE COMPLETION
1. We tested the ____________ of sugar by observing if it could dissolve in water after 5 minutes.
2. Color, size, shape, smell and texture are all examples of ________________.
3. Depending on an objects’ ____________, that object will sink or float in water.
4. We witnessed ________________ when the magnet attracted iron filings in our mixture lab.
5. An object undergoes a ________________ when it is melted, frozen, mixed, crushed, boiled, etc.
### PART 4 - REAL LIFE APPLICATION

<table>
<thead>
<tr>
<th>OBJECT</th>
<th>TWO PHYSICAL PROPERTIES</th>
<th>ONE WAY TO PHYSICALLY CHANGE IT</th>
</tr>
</thead>
<tbody>
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### PART 5 - MAGIC SQUARE

Directions: Match the number of the statement best describing the word in the box and write it on the line below the word. If they are all right, each column and row will total the same MAGIC NUMBER. Good luck!

<table>
<thead>
<tr>
<th>physical property</th>
<th>solubility</th>
<th>density</th>
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<tbody>
<tr>
<td># __________</td>
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<table>
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<tr>
<th>physical change</th>
<th>polarity</th>
<th>melting</th>
</tr>
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<tbody>
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<thead>
<tr>
<th>evaporating</th>
<th>freezing</th>
<th>phases</th>
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<tbody>
<tr>
<td># __________</td>
<td># __________</td>
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</tbody>
</table>

TOTAL: __________ __________ __________

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1. The ability of one substance to dissolve in another substance, forming a homogeneous mixture.
2. A synonym for “state” of matter. There are 3 primary ones are solid, liquid and gas.
3. Altering the appearance of a substance while maintaining its chemical composition/atomic makeup.
4. Adding heat/energy to a liquid resulting in the formation of a gas.
5. Having a positive or negative charge and being attracted to a certain magnetic pole.
6. How tightly packed atoms are in a substance. The ratio of mass to volume of an object/substance.
7. Adding heat/energy to a solid resulting in the formation of liquid.
8. Characteristics of a substance/object that are observed without altering the substance.
9. Removing heat/energy from a liquid resulting in the formation of a solid.
Review & Recap: **TEACHER ANSWER KEY**

**PHYSICAL PROPERTIES & CHANGES**

**PART 1 - MATCHING**

1. Physical property  
2. Solubility  
3. Density  
4. Physical change  
5. Polarity

- a. how easily a substance dissolves in another substance  
- b. an object’s attraction to another object (magnetic, electric)  
- c. an observable characteristic without modifying the object  
- d. a change in state (solid, liquid, gas) of an object  
- e. how tightly of loosely atoms are packed in a substance.

**PART 2 - WAYS MATTER PHYSICALLY CHANGES**

Physical changes involve physically altering or modifying the appearance of a substance without altering the chemical makeup of that substance. The size, shape, color, length, or state of the object may change, but the chemical composition of that substance remains the same. For example, tearing paper into small pieces changes the appearance of the paper, however the substance remains paper. A phase change is also considered a physical change. It involves adding or removing energy between the 3 states, or phases, of matter. The 3 primary states of matter are solid, liquid and gas. An ice cube melting changes states from solid to liquid, however the chemical makeup of the substance is still water (H₂O). One way to identify a physical change is to consider whether or not the change is reversible. An ice cube melting into liquid can be frozen and turned into a solid again. Consider these ways for physical changing matter:

1. Crushing  
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4. Condensing  
5. Breaking  
6. Dissolving  
7. Tearing  
8. Freezing  
9. Cutting  
10. Evaporating

1. List 5 actions to physically change matter: ____________________  
   ____________________  
   ____________________  
   ____________________  
   ____________________  

2. True or False: Physical changes may be reversible. Circle one: True  
   False

3. True or False: A new substance is created during a physical change. Circle one: True  
   False

4. Think of 1 example (other than ice cube to water and back) that can be classified as a physical change. Tearing paper, lava cooling to rock, melting metal, etc. answers may vary.

**PART 3 - SENTENCE COMPLETION**

1. We tested the __solubility__ of sugar by observing if it could dissolve in water after 5 minutes.  
2. Color, size, shape, smell and texture are all examples of __physical properties__.  
3. Depending on an object’s __density__ that object will sink or float in water.  
4. We witnessed __polarity__ when the magnet attracted iron filings in our mixture lab.  
5. An object undergoes a __physical change__ when it is melted, frozen, mixed, crushed, boiled, etc.
## PART 4 - REAL LIFE APPLICATION

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<th>Density</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td># 8.</td>
<td># 1.</td>
<td># 6.</td>
<td>15</td>
</tr>
<tr>
<td>Physical change</td>
<td>Polarity</td>
<td>Melting</td>
<td>15</td>
</tr>
<tr>
<td># 3.</td>
<td># 5.</td>
<td># 7.</td>
<td>15</td>
</tr>
<tr>
<td>Evaporating</td>
<td>Freezing</td>
<td>Phases</td>
<td>15</td>
</tr>
<tr>
<td># 4.</td>
<td># 9.</td>
<td># 2.</td>
<td>15</td>
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<tr>
<td>Total:</td>
<td>15</td>
<td>15</td>
<td>15</td>
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