Physical and Chemical Properties page 33 in textbook

Which of the pictures below represent a chemical change? A physical change?

What are Physical changes? Physical properties?

- Physical change:

A change in matter in which the identity of the material involved does not change

- Physical property:

A property that can be observed or measured without changing the identity of the sample of matter

Examples: Physical changes

- Boiling

Bending metal

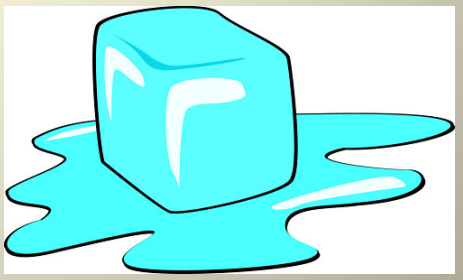
Melting

- Dissolving

Examples: Physical Properties

- This shirt is purple

- Solid water melts at 0^0 C



What are Chemical changes or Chemical properties?

Chemical Changes:

An interaction of matter that results in the formation of one or more substances.

Chemical Properties:

Properties only observed or measured by changing the chemical identity of a sample of matter.

Examples of Chemical Changes and Chemical Properties

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Classify each statement as describing either a physical property or a chemical property.

Hint: ***When the property is observed,***

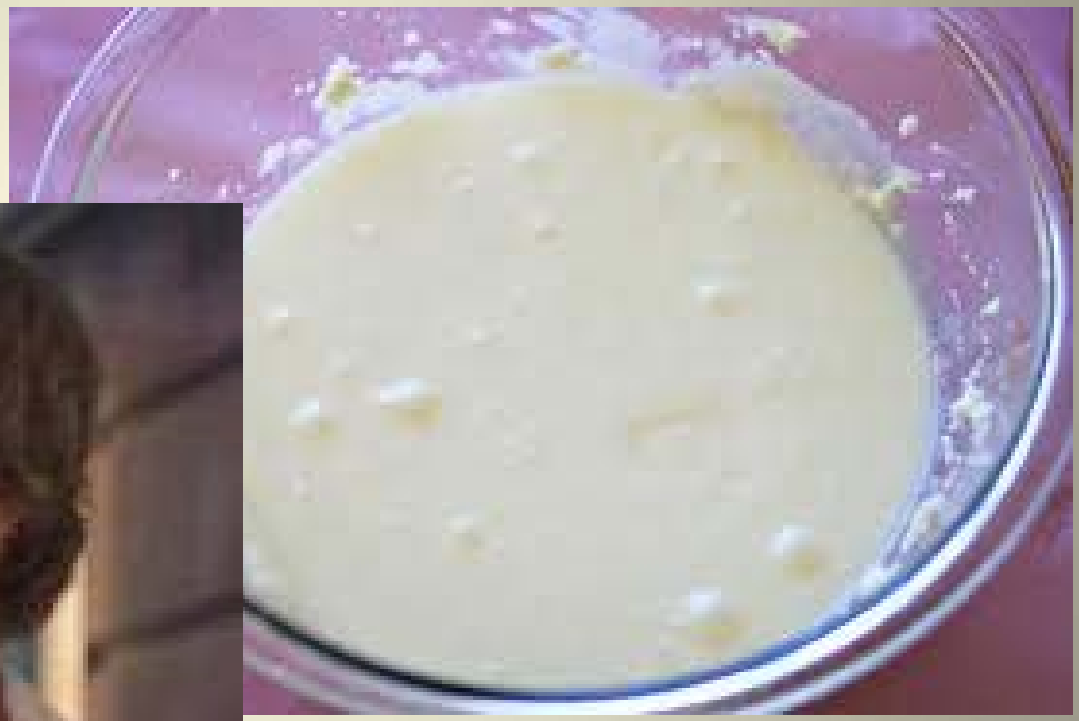
if the chemical identity of the material changes, then it is chemical, but if it does not change then it's physical

1. Pure metals have a high luster(are shiny and reflect light).

2. The surfaces of some metals become dull when exposed to air.

3. Nitrogen gas, a relatively nonreactive material at room temperature, can form nitrogen oxides at the high temperatures of an operating automobile engine

4. Milk turns sour if left too long at room temperature.



5. Diamonds are hard enough to be used as a coating for drill bits.

6. Metals are typically ductile(can be bent to make wiring).

7. Leavened bread dough increases in volume if it is allowed to rise before baking.

8. Generally metals are better conductors of heat and electricity than are nonmetals.

Indicators of a physical change

- Dissolving
- Change of state
- Examples of changes of state?

Indicators of a chemical change

- Remember, a new substance with new properties must be formed
- Gas is produced (bubbles)
- Color change
- Energy is produced
- Solid (precipitate forms)
- Burning

What kind of change occurred in the demos? In the lab investigations?