

### Concept Definition

Study the primary definition of this concept, broken into general, basic, and advanced English definitions. Also see the mathematical definition and any requisite background information, such as conditions or previous definitions.

#### General Science

The substances are not altered chemically, but merely changed to another phase (i.e. gas, liquid, solid), separated, or combined.<sup>[1]</sup>

### Real World Application

Discover processes or disciplines in the natural or man-made worlds that employ the concept.

Boiling water for a cup of noodles is a physical change that involves changing phase.

Tearing a piece of paper is a physical change that involves changing shape.

Pouring your liquid cake mix into different shapes using baking molds is a physical change with shape.

Making a snow man is a physical change for shape.

Turning a large chunk of iron into iron wire or nails is a physical change that may involve both phase change (melting the iron) and shape (molding or extruding the iron).

### Vocabulary

Learn important vocabulary for this concept, including words that might appear in assessments (tests, quizzes, homework, etc.) that indicate the use of this concept.

Important Vocabulary	Term	Context
boil		<ul style="list-style-type: none"><li>- Water boils at 100°C.</li></ul>
condense		<ul style="list-style-type: none"><li>- Water vapor condenses below 100°C.</li></ul>
cut		<ul style="list-style-type: none"><li>- Cutting a piece of paper is a physical change.</li></ul>
deposit		<ul style="list-style-type: none"><li>- Water vapor deposits as frost on cold surfaces on winter mornings.</li></ul>
dissolve		<ul style="list-style-type: none"><li>- Sugar dissolves into water.</li></ul>
evaporate		<ul style="list-style-type: none"><li>- Acetone evaporates much more quickly than water at room temperature.</li></ul>
filter		<ul style="list-style-type: none"><li>- Pouring a suspension through a filter will separate the liquid from the solid particles.</li></ul>
freeze		<ul style="list-style-type: none"><li>- Water freezes at 0°C.</li></ul>
melt		<ul style="list-style-type: none"><li>- Ice melts at 0°C.</li></ul>
sublime		<ul style="list-style-type: none"><li>- Solid CO<sub>2</sub>, dry ice, sublimates into gaseous CO<sub>2</sub>.</li></ul>

suspend

- Dirt pieces can be suspended in water to make mud.

## Videos

Browse relevant videos from the Journal of Chemical Education's (JCE) Chemistry Comes Alive! library and other video sources.

### Boiling Water

Boiling water is only a phase change. Therefore, it is a physical change.

### Making a Snow Man

Making a snow man does not involve any chemical change. (Ok, maybe not the part where the snow man comes to life.) It only involves putting stuff together without reaction with each other.

## Computer Animations

Experience computer simulators or animations that illustrate the concept discussed here. Many simulators or animations come with worksheets for use in class.

[http://preparatorychemistry.com/KMT\\_flash.htm](http://preparatorychemistry.com/KMT_flash.htm)

[http://preparatorychemistry.com/element\\_properties\\_flash.htm](http://preparatorychemistry.com/element_properties_flash.htm)

## Classroom Demonstrations

Investigate lab procedures suitable for live classroom demonstrations or guided student exploration.

Demos      **Tear a piece of paper**

## Summary

Read a summary of the concept, indicating the enduring understanding students should retain after class.

Summary

There is a physical change if there is no new substance generated after the change. Ice and water are made of exactly the same the same substance, only the state is different. Physical changes also include energy exchanges or separation/combinations.

## Works Cited

Review the works cited to write the researched parts of this page, such as the discover's biographical information and other areas.

Works Cited

[1] [LINK URL: <http://www.teacherbridge.org/public/bhs/teachers/Dana/chemphys.html>]