

## Lesson - SPS04A

Chemical  
Reactions

Use the

Google

and PowerPoint  
from the

## Get Ready to Learn!



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## Why is this important?

- ❑ Predicting what will happen when two or more chemicals are combined would be a good thing to know
- ❑ You can tell how much of each chemical is needed to produce a certain amount of the new chemical compound



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## Do You Know?

- ❑ **Chemical reactions** happen when atoms break free of chemical bonds and form new substances with new chemical bonds
- ❑ **Chemicals names** by their common name or a shorthand symbol
- ❑ **Using mathematics** we can predict that will happen in a chemical reaction by counting the atoms and balancing the chemical equations



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What is important to know about chemical reactions?

Describing a Chemical Reaction:

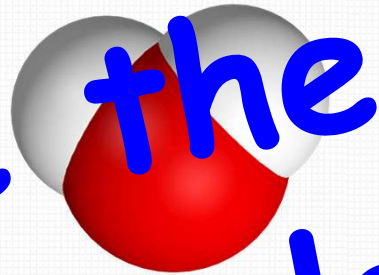
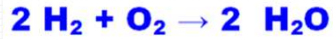
Write it out

- Using words

Dihydrogen Monoxide - Two molecules of hydrogen gas react with one molecule of oxygen gas to produce two molecules of water.

Use a shorthand

- Shows mathematical relationships



Draw a picture or model  
Helps visualize

What is important to know about chemical reactions?

Chemical Equations:

- Chemical symbol made up of a single letter or two letters
- First letter is always capitalized
- Names sometimes are from Latin and Greek words.

The Periodic Table of the Elements

What is important to know about chemical reactions?

Predicting Chemical Reactions:

- Reactants must equal products
- "Law of Conservation of Mass"
- No atoms are created or destroyed in the reaction
- Can be used to predict order of the reaction

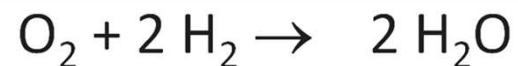
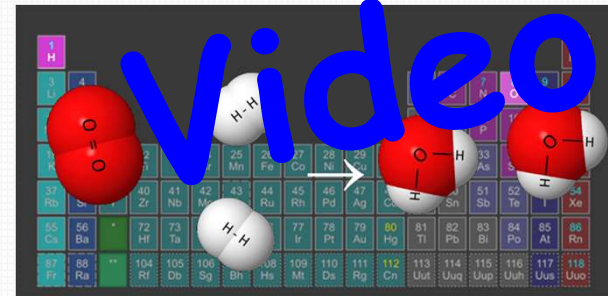


	Before	After
P	4	4
O	10	4
H	2	3

What is important to know about chemical reactions?

Reactants and Products:

- Substances present at the beginning are reactants - they react
- Products are found after the arrow → and are usually on the right
- Atoms recombine to form new molecules



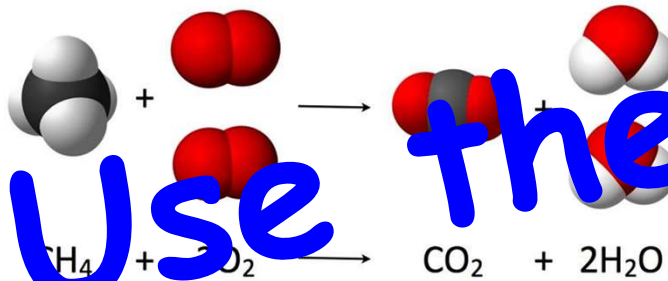
Use the included Google Slides and PowerPoint from the video.



### What is important to know about chemical reactions?

#### Conservation of mass:

- In a reaction, no new atoms are made or destroyed
- Chemical bonds break
- Atoms recombine in a new way
- New bonds are made



Use the slides

### What is important to know about chemical reactions?

#### Heat energy is almost always involved

##### Energy is sometimes given off

- Exothermic



##### Energy is sometimes absorbed

- Endothermic

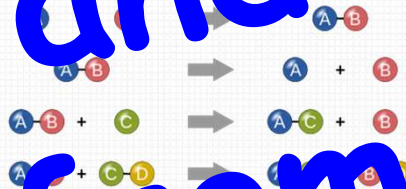


Easy to remember: Exothermic means exit - to leave. Endothermic is the other one...

### What is important to know about chemical equations?

#### Types of Chemical Reaction

- Atoms are combined chemically
- Reactants are what you start with
- Products are the result of chemical reaction
- Different types of reactions



#### Law of Conservation of Mass

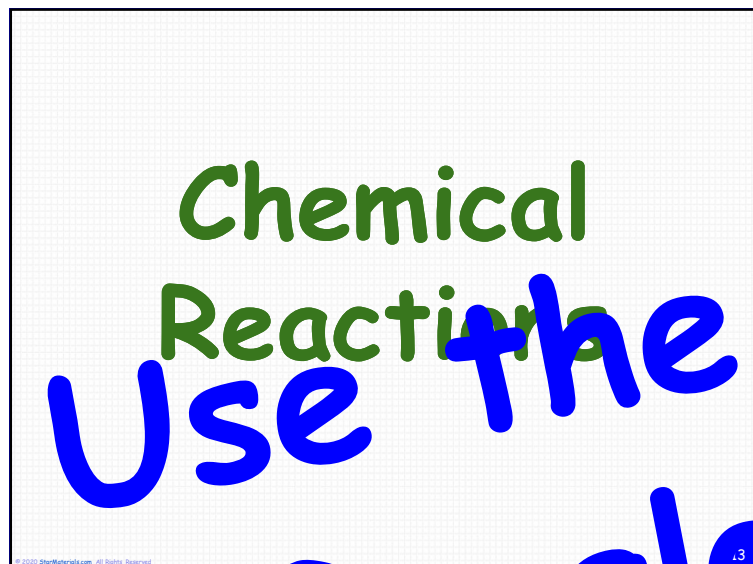
- No material is destroyed in a reaction
- No new material is created in a reaction

### What is this important?

- Predicting what will happen when two or more chemicals are combined would be a good thing to know
- You can tell how much of each chemical is needed to produce a certain amount of the new chemical compound



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