**Chemical Reactions Chapter 11B**

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**See** [**https://www.learningctronline.com/courses**](https://www.learningctronline.com/courses) **for Materials and Resources.**

**Topics:**

1. Chemical Reactions

**Objectives:**

1. Recognize and write balanced chemical equations for synthesis, decomposition, single replacement, double replacement, or combustion reactions.
2. Use the activity series to determine whether a single replacement reaction will occur.
3. Write ionic equations, net ionic equations, and recognize spectator ions based on reactions with aqueous solutions.
4. Write and balance chemical equations based on chemical reactions.
5. Identify and characterize the types of reactions, including synthesis, decomposition, single replacement, double replacement, and combustion.

TAKE NOTE

1. Notes / Study Guide
2. Lesson Check & Sample Problems or Alternative Worksheets
3. Lab Double Displacement Reactions
4. Test: Chemical Reactions
5. HONORS 🡪 Do both Parts A and B on Test
6. Class Song: Learning Makes Life New (Doe a Deer)
7. Week 18 Devotional (<https://www.learningctronline.com/devotional>)

**Text**: Chapter 11: Chemical Reactions pp. 369-381

Read the assigned pages in the text.

**Class Notes: PowerPoint or PDF**

**Notes/Study Guide:** Fill in the Chapter 11 worksheet to understand the class notes.

**Homework**: TEXT

(1) Answer the KEYED **"Lesson Check"** questions at the end of each of the chapter.

(2) Answer the **"Sample problems"** found in the "Sample Problem" boxes throughout the chapter. An answer KEY is provided for you to use to self-correct your homework problems.

* Put your answers into complete thoughts in a Word document. Do NOT just put the answer, but write a phrase or sentence that you can study from for your tests. Save your work in a WORD document and SAVE into your HOMEWORK folder in the Chemistry folder on the desktop.
* Assignments will be “spot checked” during class or submitted via email.

**Alternate Homework**:

1. Practice Equations 1-4 Worksheet
2. Practice Equations 5-7 Worksheet

**Lab**: Double Replacement Reactions

* This lab activity is great practice in writing and balancing the equations for the double replacement reactions and considering solubility of various ionic compounds.
* **Watch the videos on the Double Displacement Reactions Labs to complete the Calculations and Data (Reaction Table)**.
* **Do TEN of the chemical reaction equations MINIMUM.**

* Complete the Conclusion and Questions section as well.
* The following videos show the EXPERIMENT (combining compounds).  
    
  [Silver Nitrate combining with ionic compounds](http://somup.com/cFXnDqn1bc) (2:29)  
    
  [Barium Nitrate, CobaltII Nitrate, and CopperII Nitrate combining with ionic compounds](http://somup.com/cFXnbJn1bK) (3:32)  
    
  [IronIII Nitrate, LeadII Nitrate, and Potassium Nitrate combining with ionic compounds](https://screencast-o-matic.com/watch/cFXnrdYshI) (2:30)
* The following videos go over two of the reactions in this lab (how to write and balance the equations, giving net ionic equations, and spectator ions).  
    
  [Lab Double Displacement: Writing Equation 2](http://somup.com/cFXeIJn10Q) (2:28)  
    
  [Lab Double Displacement: Writing Equation 25](http://somup.com/cYVDrffNYK) (3:24)

**Summary of this activity:**

1. Complete the data chart based on the experiment videos or use the answer key on page 6.
2. Complete **a minimum of TWO (2) reactions** on the equations sheet (recommend equation 2 and 25), indicating the precipitate and naming all reactants and products. Show the NET ionic equation and spectator ions for the reactions you choose. Answers are provided at the end for guidance.
3. There are 25 possible chemical reactions if you desire more practice.
4. Complete the Conclusion Section (Solubility Chart & equation series for TWO reactions). Answers are provided at the end for guidance.

**TEST:** Chemical Reactions

1) the academic integrity policy

* Tests must be completed **WITHOUT** referring to books, notes, the internet, people, or any outside resources.
* Students **MAY** use the approved Periodic Tables, approved Reference Tables, or approved equation (formula) sheet (provided by the teacher) along with calculators and scratch paper.
* A guardian should be proctoring the test. Proctoring means to monitor the following:

2) The test is composed of 20 multiple choice questions and some written problems.

* The **multiple-choice test must be taken "in one sitting"**, meaning that once you start the test, you must complete it without interruption. (40 minutes)
* Take a short break (5-10 minutes)
* The **written portion of the test must be taken "in one sitting"**, meaning that once you start the test, you must complete it without interruption. (30 minutes) Honors students must do both Parts A & B.

3) There is a **70-minute time limit** on this test. Please have the proctor write the time taken at the top of your answer sheet with their signature or initials.

4) Proctors should NOT be reading the test or engaging students during the test.

5) Do NOT use RED font. Black font is best.

Supplemental Resources (Optional)

1. Chapter 11 Study Guide Pearson

[Single Replacement Reactions](http://somup.com/cFXVrEn16s) (4:33)  
  
[Double Displacement/Replacement Reactions](http://somup.com/cFXeovn10v) (5:48) ... Formation of a Precipitate, Solubility Chart, Ionic Equations, Net Ionic Equations, Spectator Ions.  
  
[Example 1 of Double Displacement/Replacement Reaction](http://somup.com/cFXeIJn10Q) (2:28) ... Ionic Equation, Net Ionic Equation, Spectator Ions  
  
[Example 2 of Double Displacement/Replacement Reaction](http://somup.com/cYVDrffNYK) (3:24) ... Ionic Equation, Net Ionic Equation, Spectator Ions  
  
[Combustion Reaction: Calcium Carbide Canon](http://somup.com/cYfoq0iegP) (2:47) (CH)x + O2 🡪 CO2 + H2O

[Listen for God's Voice Proverbs 3:5-6; Thank You, Lord](https://screencast-o-matic.com/watch/cYhFoXkuWl) (5:33)