

Redox Reactions



Chapter Pacing Guide

Please note that this pace is based on completing selected sections of the text in 90 classes, approximately 90 minutes each. Refer to the Course Planning Guide on page xvii of this booklet for a complete list of time allotments assigned to each section. Less time can be allocated for each chapter if you plan to teach all 26 chapters.

Period	Content
0.5	20.1 Oxidation and Reduction
1	20.2 Balancing Redox Equations
1	20.3 Half-Reactions
0.5	Review and Assessment

Oxidation and Reduction pages 635–643

Key: SE = Student Edition,
TWE = Teacher Wraparound Edition,
TCR = Teacher Classroom Resources

National Science Content Standards: UCP.1, UCP.3; A.1; B.1, B.2, B.3; E.2; G.2

Georgia QCC: 1, 1.2, 2.1, 3.1, 5.2, 9.1, 9.2, 9.6, 13, 13.1

Objectives

- **Describe** the processes of oxidation and reduction.
- **Identify** oxidizing and reducing agents.
- **Determine** the oxidation number of an element in a compound.
- **Interpret** redox reactions in terms of change in oxidation state.

Lesson Resources

- _____ Section Focus Transparency 75 and Master Teaching Transparencies 59–60 and Masters
- _____ *ChemLab and MiniLab Worksheets*, p. 77 TCR
- _____ *Study Guide for Content Mastery*, pp. 115–116 TCR

- _____ **Guided Reading Audio Program**, Section 20.1
- _____ **Cosmic Chemistry Videodisc**, Disc 2, Side 3; Disc 3, Side 5
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

Multimedia Resources

- _____ **Chemistry Interactive CD-ROM**, Section 20.1 Animation, Demonstration, Video, and Experiment
- _____ **MindJogger Videoquizzes**, Ch. 20

Optional Resources

- _____ *Laboratory Manual*, pp. 153–156 TCR
- _____ *Solving Problems: A Chemistry Handbook*, Section 20.1 TCR
- _____ *Spanish Resources* 20.1 TCR

Lesson Plan

Activity	Resources	Suggested Time
Classroom Management <ul style="list-style-type: none"> • Display the Section Focus Transparency and have students answer the questions. • Distribute the corrected Chapter 19 tests. 	Section Focus Transparency 75 and Master	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 20.1 with the Discovery Lab. • Teach the main concepts of Section 20.1. 	SE, p. 635 TWE, pp. 635–643	25 minutes
In-Class Check <ul style="list-style-type: none"> • Complete the Check for Understanding and Reteach strategies. 	TWE, pp. 642–643	10 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 20.1 Assessment. • Assign the Extension activity. • Assign relevant questions from Chapter 20 Assessment. 	SE, p. 643 TWE, p. 643 SE, pp. 658–661	5 minutes

[total = 45 minutes]

Balancing Redox Equations *pages 644–649*

Key: SE = Student Edition,
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TCR = Teacher Classroom Resources

National Science Content Standards: UCP.1, UCP.3; A.1; B.2, B.3; E.1, E.2; F.6

Georgia QCC: 4, 9.1, 13, 13.1

Objectives

- **Relate** changes in oxidation numbers to the transfer of electrons.
- **Use** changes in oxidation number to balance redox equations.
- **Balance** net ionic redox equations by the oxidation-number method.

Lesson Resources

- _____ Section Focus Transparency 76 and Master
- _____ Teaching Transparency 61 and Master
- _____ *Study Guide for Content Mastery*, pp. 117–118
TCR

Multimedia Resources

- _____ **MindJogger Videoquizzes**, Ch. 20
- _____ **Guided Reading Audio Program**, Section 20.2

- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

Optional Resources

- _____ *Laboratory Manual*, pp. 157–160 TCR
- _____ *Small-Scale Laboratory Manual*, pp. 73–76 TCR
- _____ *Solving Problems: A Chemistry Handbook*,
Section 20.2 TCR
- _____ *Spanish Resources 20.2 TCR*

Lesson Plan

Activity	Resources	Suggested Time
Classroom Management <ul style="list-style-type: none"> • Display the Section Focus Transparency and have students answer the questions. • Have students check homework answers. 	Section Focus Transparency 76 and Master TWE, pp. 643, 658–661	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 643, 658–661	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 20.2 with the Quick Demo. • Teach the main concepts of Section 20.2. • Have students complete the Problem-Solving Lab in small groups. 	TWE, p. 644 TWE, pp. 644–649 SE, p. 647	45–50 minutes
In-Class Check <ul style="list-style-type: none"> • Use the Identifying Misconceptions strategy. • Reinforce Section 20.2 concepts using the <i>Study Guide for Content Mastery</i>. • Complete the Check for Understanding and Reteach strategies. 	TWE, p. 645 <i>Study Guide for Content Mastery</i> , pp. 117–118 TCR TWE, p. 649	25–30 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 20.2 Assessment. • Assign relevant questions from Chapter 20 Assessment. 	SE, p. 649 SE, pp. 658–661	5 minutes

[total = 90 minutes]

Half-Reactions pages 650–653

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National Science Content Standards: UCP.1, UCP.3; A.1; B.1, B.2, B.3, B.6; E.2

Georgia QCC: 1, 1.2, 2, 2.1, 3.1, 4, 5.2, 8, 9.1, 9.4, 9.6, 12.3, 13, 13.1

Objectives

- **Recognize** the interdependence of oxidation and reduction processes.
- **Derive** oxidation and reduction half-reactions from a redox equation.
- **Balance** redox equations by the half-reaction method.

Lesson Resources

- _____ Section Focus Transparency 77 and Master Teaching Transparency 62 and Master
- _____ *ChemLab and MiniLab Worksheets*, pp. 78–80 TCR
- _____ *Study Guide for Content Mastery*, pp. 119–120 TCR

- _____ *Cosmic Chemistry Videodisc*, Disc 3, Side 5; Disc 4, Side 8
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

Multimedia Resources

- _____ *MindJogger Videoquizzes*, Ch. 20
- _____ *Guided Reading Audio Program*, Section 20.3

Optional Resources

- _____ *Challenge Problems*, p. 20 TCR
- _____ *Solving Problems: A Chemistry Handbook*, Section 20.3 TCR
- _____ *Spanish Resources 20.3 TCR*
- _____ *Supplemental Problems*, p. 31 TCR

Lesson Plan

Activity	Resources	Suggested Time
Classroom Management <ul style="list-style-type: none"> • Display the Section Focus Transparency and have students answer the questions. • Have students check homework answers. 	Section Focus Transparency 77 and Master TWE, pp. 649, 658–661	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 649, 658–661	5 minutes
Core Lesson <ul style="list-style-type: none"> • Teach the main concepts of Section 20.3. • Have students complete the ChemLab, and discuss their results. 	TWE, pp. 650–653 SE, pp. 654–655	65–70 minutes
In-Class Check <ul style="list-style-type: none"> • Complete the Check for Understanding and Reteach strategies. • Answer questions on Chapter 20 to prepare students for the test. 	TWE, p. 653 TWE, pp. 634–661	5–10 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 20.3 Assessment. • Assign relevant questions from Chapter 20 Assessment. • Assign supplemental problems to prepare students for the test. 	SE, p. 653 SE, pp. 658–661 <i>Supplemental Problems</i> , p. 31 TCR	5 minutes

[total = 90 minutes]

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Assessment Resources

- _____ Chapter Assessment, Ch. 20 TCR
- _____ Performance Assessment in the Science Classroom, TCR
- _____ Alternate Assessment in the Science Classroom, TCR
- _____ Reviewing Chemistry: Mastering the Georgia QCC, TCR

Multimedia Resources

- _____ MindJogger Videoquizzes, Ch. 20
- _____ TestCheck Software, Ch. 20
- _____ Chemistry Interactive CD-ROM, Ch. 20 quiz
- _____ Vocabulary PuzzleMaker Software, Ch. 20

Activity	Resources	Suggested Time
Classroom Management <ul style="list-style-type: none"> • Have students check homework answers. 	TWE, pp. 653, 658–661 Supplemental Problems, p. 31 TCR	5 minutes
Reviewing the Chapter <ul style="list-style-type: none"> • Answer any questions about homework. • Answer any final questions about Chapter 20. 	Supplemental Problems, p. 31 TCR TWE, pp. 634–661	5 minutes
Assessment <ul style="list-style-type: none"> • Distribute the test and allow students to work quietly. 	Chapter Assessment, pp. 115–120 TCR	30–35 minutes
Closing <ul style="list-style-type: none"> • As students complete the test, have them read the Chapter 21 Opener. • If students have time, let them explore the Chemistry Online for Chapter 21. 	SE, p. 662 ga.science.glencoe.com	0–5 minutes

[total = 45 minutes]