

Solutions



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	15.1 What are solutions?
1	15.2 Solution Concentration
1	15.3 Colligative Properties of Solutions
0.5	15.4 Heterogeneous Mixtures
0.5	Review and Assessment

What are solutions? *pages 453–461*

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

National Science Content Standards: UCP.1, UCP.2, UCP.4; B.2, B.4, B.5, B.6

Georgia QCC: 1, 2.1, 3.1, 8.3, 8.4, 16, 16.1, 16.2

Objectives

- **Describe** the characteristics of solutions and **identify** the various types.
- **Relate** intermolecular forces and the process of solvation.
- **Define** solubility and **identify** factors affecting it.

Lesson Resources

- _____ Section Focus Transparency 55 and Master
- _____ Teaching Transparency 45 and Master
- _____ *Study Guide for Content Mastery*, pp. 85–86 TCR

Multimedia Resources

- _____ **Chemistry Interactive CD-ROM**, Section 15.1 Animation and Videos
- _____ **MindJogger Videoquizzes**, Ch. 15
- _____ **Guided Reading Audio Program**, Section 15.1
- _____ **Cosmic Chemistry Videodisc**, Disc 1, Side 2; Disc 3, Side 5
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

Optional Resources

- _____ *Laboratory Manual*, pp. 113–116 TCR
- _____ *Small-Scale Laboratory Manual*, pp. 41–44 TCR
- _____ *Solving Problems: A Chemistry Handbook*, Section 15.1 TCR
- _____ *Spanish Resources* 15.1 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 14 tests. 	Section Focus Transparency 55 and Master	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 15.1 with the Concept Development feature. • Teach the main concepts of Section 15.1. 	TWE, p. 453 TWE, pp. 453–461	15 minutes
In-Class Check <ul style="list-style-type: none"> • Reinforce Section 15.1 concepts using the Discovery Lab. • Complete the Check for Understanding and Reteach strategies. 	SE, p. 453 TWE, p. 461	20 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 15.1 Assessment. • Have students complete the Knowledge Assessment. • Assign relevant questions from Chapter 15 Assessment. 	SE, p. 461 TWE, p. 461 SE, pp. 484–487	5 minutes

[total = 45 minutes]

Solution Concentration pages 462–470

Key: SE = Student Edition,
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National Science Content Standards: UCP.1, UCP.2, UCP.4; A.1, A.2; B.2

Georgia QCC: 16.3

Objectives

- **State** the concentrations of solutions in different ways.
- **Calculate** the concentrations of solutions.

Lesson Resources

- _____ Section Focus Transparency 56 and Master
- _____ Math Skills Transparency 22 and Master
- _____ *ChemLab and MiniLab Worksheets*, pp. 58–60
TCR
- _____ *Study Guide for Content Mastery*, pp. 87–88 TCR

Optional Resources

- _____ *Laboratory Manual*, pp. 117–120 TCR
- _____ *Solving Problems: A Chemistry Handbook*,
Section 15.2 TCR
- _____ *Spanish Resources 15.2 TCR*

Multimedia Resources

- _____ **MindJogger Videoquizzes**, Ch. 15
- _____ **Guided Reading Audio Program**, Section 15.2
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

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 56 and Master TWE, pp. 461, 484–487	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 461, 484–487	5 minutes
Core Lesson <ul style="list-style-type: none"> • Teach the main concepts of Section 15.2. • Have students read the ChemLab and follow the procedure. 	TWE, pp. 462–470 SE, pp. 480–481	65 minutes
In-Class Check <ul style="list-style-type: none"> • Complete the Check for Understanding strategy. 	TWE, p. 469	10 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 15.2 Assessment. • Have students complete the Reteach strategy. • Assign relevant questions from Chapter 15 Assessment. 	SE, p. 470 TWE, p. 470 SE, pp. 484–487	5 minutes

[total = 90 minutes]

Colligative Properties of Solutions

pages 471–475

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National Science Content Standards: UCP.1, UCP.2, UCP.4; A.1; B.2, B.4, B.6

Georgia QCC: 1, 1.2, 3.1, 16.4

Objectives

- **Explain** the nature of colligative properties.
- **Describe** four colligative properties of solutions.
- **Calculate** the boiling point elevation and the freezing point depression of a solution.

Lesson Resources

- _____ Section Focus Transparency 57 and Master
- _____ Math Skills Transparency 23 and Master
- _____ Teaching Transparency 46 and Master
- _____ *ChemLab and MiniLab Worksheets*, p. 57 TCR
- _____ *Study Guide for Content Mastery*, p. 89 TCR

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

Optional Resources

- _____ *Challenge Problems*, p. 15 TCR
- _____ *CBL Laboratory Manual*, pp. 21–24 TCR
- _____ *Solving Problems: A Chemistry Handbook*, Section 15.3 TCR
- _____ *Spanish Resources* 15.3 TCR

Multimedia Resources

- _____ **MindJogger Videoquizzes**, Ch. 15
- _____ **Guided Reading Audio Program**, Section 15.3
- _____ **Cosmic Chemistry Videodisc**, Disc 1, Side 2

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 57 and Master TWE, pp. 470, 484–487	10 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 470, 484–487	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 15.3 with the MiniLab. • Teach the main concepts of Section 15.3. 	SE, p. 473 TWE, pp. 471–475	50 minutes
In-Class Check <ul style="list-style-type: none"> • Reinforce Section 15.3 concepts using the Knowledge Assessment. • Complete the Check for Understanding and Reteach strategies. 	TWE, p. 474 TWE, p. 474	20 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 15.3 Assessment. • Have students complete the Portfolio Assessment. • Assign relevant questions from Chapter 15 Assessment. 	SE, p. 475 TWE, p. 475 SE, pp. 484–487	5 minutes

[total = 90 minutes]

Heterogeneous Mixtures pages 476–479

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National Science Content Standards: UCP.1, UCP.2, UCP.4; A.1, A.2; B.2, B.4, B.5, B.6; F.1, F.6

Georgia QCC: 1, 1.2, 2, 2.1, 3.1, 8, 8.3, 8.4, 9.4, 15.4, 16, 16.2, 16.3, 16.4, 16.5

Objectives

- **Identify** the properties of suspensions and colloids.
- **Describe** different types of colloids.
- **Explain** the electrostatic forces in colloids.

Lesson Resources

- _____ Section Focus Transparency 58 and Master
- _____ *Study Guide for Content Mastery*, p. 90 TCR

Multimedia Resources

- _____ **MindJogger Videoquizzes**, Ch. 15
- _____ **Guided Reading Audio Program**, Section 15.4
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

Optional Resources

- _____ *Small-Scale Laboratory Manual*, pp. 41–44 TCR
- _____ *Solving Problems: A Chemistry Handbook*, Section 15.4 TCR
- _____ *Spanish Resources 15.4 TCR*
- _____ *Supplemental Problems*, p. 21 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 58 and Master TWE, pp. 475, 484–487	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 475, 484–487	5 minutes
Core Lesson <ul style="list-style-type: none"> • Teach the main concepts of Section 15.4. 	TWE, pp. 476–479	20 minutes
In-Class Check <ul style="list-style-type: none"> • Reinforce Section 15.4 concepts using the Quick Demo. • Complete the Check for Understanding and Extension strategies. • Answer questions on Chapter 15 in preparation for the test. 	TWE, p. 477 TWE, p. 479 TWE, pp. 452–487	10 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 15.4 Assessment. • Assign relevant questions from Chapter 15 Assessment. • Assign supplemental problems to prepare students for the test. 	SE, p. 479 SE, pp. 484–487 Supplemental Problems, p. 21 TCR	5 minutes

[total = 45 minutes]

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Assessment Resources

- _____ *Chapter Assessment, Ch. 15 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. 15
- _____ **TestCheck Software**, Ch. 15
- _____ **Chemistry Interactive CD-ROM**, Ch. 15 quiz
- _____ **Vocabulary PuzzleMaker Software**, Ch. 15

Activity	Resources	Suggested Time
Classroom Management <ul style="list-style-type: none"> • Have students check homework answers. 	<i>TWE</i> , pp. 479, 484–487 <i>Supplemental Problems</i> , p. 21 <i>TCR</i>	5 minutes
Reviewing the Chapter <ul style="list-style-type: none"> • Answer any questions about homework. • Answer any final questions about Chapter 15. 	<i>Supplemental Problems</i> , p. 21 <i>TCR</i> <i>TWE</i> , pp. 452–487	5 minutes
Assessment <ul style="list-style-type: none"> • Distribute the test and allow students to work quietly. 	<i>Chapter Assessment</i> , pp. 85–90 <i>TCR</i>	30–35 minutes
Closing <ul style="list-style-type: none"> • As students complete the test, have them read the Chapter 16 Opener. • If students have time, let them explore the Chemistry Online for Chapter 16. 	<i>SE</i> , p. 488 ga.science.glencoe.com	0–5 minutes

[total = 45 minutes]