

Stoichiometry

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 v 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	12.1 What is stoichiometry?
3	12.2 Stoichiometric Calculations
1	12.3 Limiting Reactants
1	12.4 Percent Yield
0.5	Review and Assessment

What is stoichiometry? *pages 353–357*

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

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

Texas TEKS: 1(A), 2(C), 2(D), 3(D), 5(A), 11(C)

Objectives

- **Identify** the quantitative relationships in a balanced chemical equation.
- **Determine** the mole ratios from a balanced chemical equation.

Lesson Resources

- _____ Section Focus Transparency 43 and Master
- _____ Math Skills Transparency 15 and Master
- _____ *Study Guide for Content Mastery*, pp. 67–68 TCR

Optional Resources

- _____ *Solving Problems: A Chemistry Handbook*, Section 12.1 TCR
- _____ *Spanish Resources* 12.1 TCR

Multimedia Resources

- _____ **Chemistry Interactive CD-ROM**, Section 12.1 Experiment and Exploration
- _____ **MindJogger Videoquizzes**, Ch. 12
- _____ **Guided Reading Audio Program**, Section 12.1
- _____ **Cosmic Chemistry Videodisc**, Disc 3, Side 6; Disc 3, Side 5
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: 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. • Distribute the corrected Chapter 11 tests. 	Section Focus Transparency 43 and Master	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 12.1 with the Discovery Lab. • Teach the main concepts of Section 12.1. 	SE, p. 353 TWE, pp. 353–357	30 minutes
In-Class Check <ul style="list-style-type: none"> • Complete the Check for Understanding and Reteach strategies. 	TWE, p. 355	5 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 12.1 Assessment. • Assign the Chemistry Journal. • Assign relevant questions from Chapter 12 Assessment. 	SE, p. 357 TWE, p. 355 SE, pp. 378–383	5 minutes

[total = 45 minutes]

Stoichiometric Calculations pages 358–363**Key:** SE = Student Edition,
TWE = Teacher Wraparound Edition,
TCR = Teacher Classroom Resources**National Science Content Standards:** UCP.1, UCP.3: A.1; B.3; E.1**Texas TEKS:** 1(A), 2(B), 2(C), 11(C)**Objectives**

- **Explain** the sequence of steps used in solving stoichiometric problems.
- Use the steps to solve stoichiometric problems.

Lesson Resources

- _____ Section Focus Transparency 44 and Master
- _____ Math Skills Transparencies 16–17 and Masters
- _____ Teaching Transparency 38 and Master
- _____ *ChemLab and MiniLab Worksheets*, pp. 45–48
TCR
- _____ *Study Guide for Content Mastery*, pp. 69–70 TCR

Multimedia Resources

- _____ **MindJogger Videoquizzes**, Ch. 12
- _____ **Guided Reading Audio Program**, Section 12.2
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: science.glencoe.com

Optional Resources

- _____ *Challenge Problems*, p. 12 TCR
- _____ *Solving Problems: A Chemistry Handbook*,
Section 12.2 TCR
- _____ *Spanish Resources 12.2 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 44 and Master TWE, pp. 355, 357, 378–383	10 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 355, 357, 378–383	10 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 12.2 with the Quick Demo. • Teach the main concepts of Section 12.2, including a review of the Example Problems. • Have students read the ChemLab, follow the procedures, and answer the questions. • Discuss students' answers to the ChemLab. • Have students complete the MiniLab, then discuss their results. 	TWE, p. 359 TWE, pp. 358–363 SE, pp. 374–375 TWE, p. 375 SE, p. 362	130 minutes
In-Class Check <ul style="list-style-type: none"> • Have students complete the Practice Problems in small groups. • Reinforce Section 12.2 concepts with the <i>Study Guide for Content Mastery</i>. • Complete the Check for Understanding and Reteach strategies. 	SE, pp. 359, 360, 362 <i>Study Guide for Content Mastery</i> , pp. 69–70 TCR TWE, p. 363	85 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 12.2 Assessment. • Assign the Chemistry Journal. • Assign relevant questions from Chapter 12 Assessment. 	SE, p. 363 TWE, p. 362 SE, pp. 378–383	35 minutes

[total = 270 minutes]

Limiting Reactants *pages 364–369*

Key: SE = Student Edition,
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National Science Content Standards: UCP.1, UCP.3; B.3; E.1, E.2; F.1

Texas TEKS: 2(C), 3(B), 11(C)

Objectives

- **Identify** the limiting reactant in a chemical equation.
- **Identify** the excess reactant and **calculate** the amount remaining after the reaction is complete.
- **Calculate** the mass of a product when the amounts of more than one reactant are given.

Lesson Resources

- _____ Section Focus Transparency 45 and Master
- _____ Teaching Transparency 39 and Master
- _____ *Study Guide for Content Mastery*, p. 71 TCR

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

Multimedia Resources

- _____ **MindJogger Videoquizzes**, Ch. 12
- _____ **Guided Reading Audio Program**, Section 12.3
- _____ **Cosmic Chemistry Videodisc**, Disc 2, Side 3

Optional Resources

- _____ *Laboratory Manual*, pp. 89–96 TCR
- _____ *Solving Problems: A Chemistry Handbook*, Section 12.3 TCR
- _____ *Spanish Resources* 12.3 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 45 and Master TWE, pp. 362, 363, 378–383	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 362, 363, 378–383	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 12.3 with the Figure Caption and In-Text Question strategies. • Teach the main concepts of Section 12.3. • Have students do the Portfolio activity. 	TWE, p. 364 TWE, pp. 364–369 TWE, p. 364	60 minutes
In-Class Check <ul style="list-style-type: none"> • Reinforce Section 12.3 concepts with the <i>Study Guide for Content Mastery</i>. • Complete the Check for Understanding and Reteach strategies. 	<i>Study Guide for Content Mastery</i> , p. 71 TCR TWE, pp. 368–369	15 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 12.3 Assessment. • Assign the Chemistry Journal. • Assign relevant questions from Chapter 12 Assessment. 	SE, p. 369 TWE, p. 368 SE, pp. 378–383	5 minutes

[total = 90 minutes]

Percent Yield pages 370–373**Key:** SE = Student Edition,
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National Science Content Standards: UCP.1, UCP.3; A.1, A.2; B.3, B.6; E.1, E.2; F.4, F.5, F.6; G.1

Texas TEKS: 1(A), 1(B), 2(A), 2(B), 2(C), 2(D), 3(B), 3(C), 5(A), 11(C)

Objectives

- **Calculate** the theoretical yield of a chemical reaction from data.
- **Determine** the percent yield for a chemical reaction.

Lesson Resources

_____ Section Focus Transparency 46 and Master
_____ *Study Guide for Content Mastery*, p. 72 TCR

Optional Resources

_____ *Solving Problems: A Chemistry Handbook*,
Section 12.4 TCR
_____ *Spanish Resources* 12.4 TCR
_____ *Supplemental Problems*, pp. 15–16 TCR

Multimedia Resources

_____ **MindJogger Videoquizzes**, Ch. 12
_____ **Guided Reading Audio Program**, Section 12.4
_____ *Using the Internet in the Science Classroom*, TCR
_____ Chemistry Web site: 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 46 and Master TWE, pp. 368, 369, 378–383	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 368, 369, 378–383	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 12.4 with the Quick Demo. • Teach the main concepts of Section 12.4. • Have students complete the Problem-Solving Lab in small groups. 	TWE, p. 371 TWE, pp. 370–373 SE, p. 372	40–45 minutes
In-Class Check <ul style="list-style-type: none"> • Have students write questions for the Portfolio activity, and then use their questions for a class game. • Complete the Check for Understanding and Reteach strategies. • Answer questions on Chapter 12 in preparation for the test. 	TWE, p. 370 TWE, p. 373 TWE, pp. 352–383	30–35 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 12.4 Assessment. • Assign relevant questions from Chapter 12 Assessment. • Assign supplemental problems to prepare students for the test. 	SE, p. 373 SE, pp. 378–383 Supplemental Problems, pp. 15–16 TCR	5 minutes

[total = 90 minutes]

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Assessment Resources

- _____ Chapter Assessment, Ch. 12 TCR
- _____ Performance Assessment in the Science Classroom, TCR
- _____ Alternate Assessment in the Science Classroom, TCR

Multimedia Resources

- _____ MindJogger Videoquizzes, Ch. 12
- _____ Computer Test Bank, Ch. 12
- _____ Chemistry Interactive CD-ROM, Ch. 12 quiz
- _____ Vocabulary PuzzleMaker Software, Ch. 12

Activity	Resources	Suggested Time
Classroom Management <ul style="list-style-type: none"> • Have students check homework answers. 	TWE, pp. 373, 378–383 Supplemental Problems, pp. 15–16 TCR	5 minutes
Reviewing the Chapter <ul style="list-style-type: none"> • Answer any questions about homework. • Answer any final questions about Chapter 12. 	Supplemental Problems, pp. 15–16 TCR TWE, pp. 352–383	5 minutes
Assessment <ul style="list-style-type: none"> • Distribute the test and allow students to work quietly. 	Chapter Assessment, pp. 67–72 TCR	30–35 minutes
Closing <ul style="list-style-type: none"> • As students complete the test, have them read the Chapter 13 Opener. • If students have time, let them explore the Chemistry Online for Chapter 13. 	SE, p. 384 science.glencoe.com	0–5 minutes

[total = 45 minutes]