

Hydrocarbons



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
1	22.1 Alkanes
0.5	22.2 Cyclic Alkanes and Alkane Properties
1	22.3 Alkenes and Alkynes
1	22.4 Isomers
0.5	22.5 Aromatic Hydrocarbons and Petroleum
0.5	Review and Assessment

Alkanes *pages 697–705*

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

National Science Content Standards: UCP.2, UCP.5; A.1, A.2; B.1, B.2; E.1; F.3, F.6; G.1, G.2, G.3

Georgia QCC: 1, 1.2, 2.1, 3.1, 5.1, 6, 8, 8.1, 8.2, 17

Objectives

- **Describe** the structures of alkanes.
- **Name** an alkane by examining its structure.
- **Draw** the structure of an alkane given its name.

Lesson Resources

- _____ Section Focus Transparency 81 and Master
- _____ *ChemLab and MiniLab Worksheets*, pp. 86–88
TCR
- _____ *Study Guide for Content Mastery*, p. 127 TCR

Optional Resources

- _____ *Challenge Problems*, p. 22 TCR
- _____ *Solving Problems: A Chemistry Handbook*,
Section 22.1 TCR
- _____ *Spanish Resources 22.1 TCR*

Multimedia Resources

- _____ **Chemistry Interactive CD-ROM**, Section 22.1
Demonstration
- _____ **MindJogger Videoquizzes**, Ch. 22
- _____ **Guided Reading Audio Program**, Section 22.1
- _____ *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. • Distribute the corrected Chapter 21 tests. 	Section Focus Transparency 81 and Master	5 minutes
Core Lesson <ul style="list-style-type: none"> • Teach the main concepts of Section 22.1. • Have students read the ChemLab, follow the procedure, and answer the questions. 	TWE, pp. 697–705 SE, pp. 728–729	65 minutes
In-Class Check <ul style="list-style-type: none"> • Reinforce Section 22.1 concepts using the Using Science Terms feature. • Complete the Check for Understanding and Reteach strategies. 	TWE, p. 704 TWE, p. 704	15 minutes
Homework <ul style="list-style-type: none"> • Have students complete the Performance Assessment. • Have students complete Section 22.1 Assessment. • Assign relevant questions from Chapter 22 Assessment. 	TWE, p. 700 SE, p. 705 SE, pp. 732–735	5 minutes

[total = 90 minutes]

Cyclic Alkanes and Alkane Properties

pages 706–710

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

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

Georgia QCC: 8, 8.1, 8.2, 8.3, 8.4, 17

Objectives

- **Name** a cyclic alkane by examining its structure.
- **Draw** the structure of a cyclic alkane given its name.
- **Describe** the properties of alkanes.
- **Distinguish** between saturated and unsaturated hydrocarbons.

Lesson Resources

- _____ Section Focus Transparency 82 and Master
- _____ Math Skills Transparency 34 and Master
- _____ Study Guide for Content Mastery, p. 128 TCR

Optional Resources

- _____ Laboratory Manual, pp. 169–172 TCR
- _____ Solving Problems: A Chemistry Handbook, Section 22.2 TCR
- _____ Spanish Resources 22.2 TCR

Multimedia Resources

- _____ MindJogger Videoquizzes, Ch. 22
- _____ Guided Reading Audio Program, Section 22.2
- _____ Cosmic Chemistry Videodisc, Disc 1, Side 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 82 and Master TWE, pp. 700, 705, 732–735	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 700, 705, 732–735	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 22.2 with the Chemistry Journal. • Teach the main concepts of Section 22.2. 	TWE, p. 708 TWE, pp. 706–710	20 minutes
In-Class Check <ul style="list-style-type: none"> • Complete the Check for Understanding and Reteach strategies. 	TWE, p. 710	10 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 22.2 Assessment. • Have students complete the Knowledge Assessment. • Assign relevant questions from Chapter 22 Assessment. 	SE, p. 710 TWE, p. 709 SE, pp. 732–735	5 minutes

[total = 45 minutes]

Alkenes and Alkynes *pages 711–716*

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

National Science Content Standards: UCP.2, UCP.5; A.1; B.2, B.3

Georgia QCC: 1, 1.2, 3.1, 8, 8.1, 8.2, 8.3, 8.4, 9.1, 9.6, 17

Objectives

- **Compare** the properties of alkenes and alkynes with those of alkanes.
- **Describe** the molecular structures of alkenes and alkynes.
- **Name** an alkene or alkyne by examining its structure.
- **Draw** the structure of an alkene or alkyne by analyzing its name.

Lesson Resources

- _____ Section Focus Transparency 83 and Master
- _____ Math Skills Transparencies 35–36 and Masters
- _____ *ChemLab and MiniLab Worksheets*, p. 85 TCR
- _____ *Study Guide for Content Mastery*, p. 129 TCR

- _____ **Guided Reading Audio Program**, Section 22.3
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

Multimedia Resources

- _____ **Chemistry Interactive CD-ROM**, Section 22.3 Demonstration
- _____ **MindJogger Videoquizzes**, Ch. 22

Optional Resources

- _____ *Solving Problems: A Chemistry Handbook*, Section 22.3 TCR
- _____ *Spanish Resources 22.3 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 83 and Master TWE, pp. 709, 710, 732–735	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 709, 710, 732–735	5 minutes
Core Lesson <ul style="list-style-type: none"> • Teach the main concepts of Section 22.3. • Have students complete the MiniLab and answer the questions. 	TWE, pp. 711–716 SE, p. 715	60 minutes
In-Class Check <ul style="list-style-type: none"> • Reinforce Section 22.3 concepts using the Reteach strategy. • Complete the Skill Assessment. 	TWE, p. 716 TWE, p. 713	15 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 22.3 Assessment. • Ask students to complete the Performance Assessment. • Assign relevant questions from Chapter 22 Assessment. 	SE, p. 716 TWE, p. 716 SE, pp. 732–735	5 minutes

[total = 90 minutes]

Isomers pages 717–721

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

National Science Content Standards: UCP.2, UCP.5; B.2, B.4, B.6; E.2; F.1; G.2, G.3
Georgia QCC: 8, 8.1, 17

Objectives

- **Distinguish** between the two main categories of isomers, structural isomers and stereoisomers.
- **Differentiate** between *cis*- and *trans*- geometric isomers.
- **Recognize** different structural isomers given a structural formula.
- **Describe** the structural variation in molecules that results in optical isomers.

Lesson Resources

- _____ Section Focus Transparency 84 and Master
- _____ Teaching Transparency 66 and Master
- _____ *Study Guide for Content Mastery*, p. 130 TCR

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

Multimedia Resources

- _____ **Chemistry Interactive CD-ROM**, Section 22.4 Animation and Experiment
- _____ **MindJogger Videoquizzes**, Ch. 22
- _____ **Guided Reading Audio Program**, Section 22.4

Optional Resources

- _____ *Challenge Problems*, p. 22 TCR
- _____ *Laboratory Manual*, pp. 173–176 TCR
- _____ *Solving Problems: A Chemistry Handbook*, Section 22.4 TCR
- _____ *Spanish Resources 22.4 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 84 and Master TWE, pp. 716, 732–735	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 716, 732–735	5 minutes
Core Lesson <ul style="list-style-type: none"> • Teach the main concepts of Section 22.4. • Have students complete the Building a Model activity in small groups. • Do the Quick Demo. 	TWE, pp. 717–721 TWE, p. 718 TWE, p. 719	45 minutes
In-Class Check <ul style="list-style-type: none"> • Reinforce Section 22.4 concepts using the Knowledge Assessment. • Ask students to respond to the In-Text Question. • Complete the Check for Understanding and Reteach strategies. 	TWE, p. 719 TWE, p. 720 TWE, p. 721	30 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 22.4 Assessment. • Ask students to complete the Chemistry Journal assignment. • Assign relevant questions from Chapter 22 Assessment. 	SE, p. 721 TWE, p. 720 SE, pp. 732–735	5 minutes

[total = 90 minutes]

Aromatic Hydrocarbons and Petroleum

pages 722–727

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

National Science Content Standards: UCP.2, UCP.5; A.1, A.2; B.2, B.4, B.6; E.2; F.1, F.3, F.4, F.5, F.6; G.2, G.3

Georgia QCC: 1, 1.2, 2, 2.1, 3.1, 4, 5.2, 6, 8, 8.1, 8.4, 9.1, 14, 15.3, 17

Objectives

- **Compare** and **contrast** the properties of aromatic and aliphatic hydrocarbons.
- **Explain** what a carcinogen is and list some examples.
- **Describe** the processes used to separate petroleum into fractions and to balance each fraction's output with market demands.
- **Identify** the fractions into which petroleum can be separated.

Lesson Resources

- _____ Section Focus Transparency 85 and Master
- _____ Teaching Transparency 67 and Master
- _____ *Study Guide for Content Mastery*, pp. 131–132
TCR

- _____ **Cosmic Chemistry Videodisc**, Disc 3, Side 6
- _____ *Using the Internet in the Science Classroom*, TCR
- _____ Chemistry Web site: ga.science.glencoe.com

Multimedia Resources

- _____ **Chemistry Interactive CD-ROM**, Section 22.5
Video
- _____ **MindJogger Videoquizzes**, Ch. 22
- _____ **Guided Reading Audio Program**, Section 22.5

Optional Resources

- _____ *Solving Problems: A Chemistry Handbook*,
Section 22.5 TCR
- _____ *Spanish Resources 22.5 TCR*
- _____ *Supplemental Problems*, pp. 35–36 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 85 and Master TWE, pp. 720, 721, 732–735	5 minutes
Discussion <ul style="list-style-type: none"> • Answer any questions about homework. 	TWE, pp. 720, 721, 732–735	5 minutes
Core Lesson <ul style="list-style-type: none"> • Introduce Section 22.5 with the Quick Demo. • Teach the main concepts of Section 22.5. 	TWE, p. 723 TWE, pp. 722–727	25–30 minutes
In-Class Check <ul style="list-style-type: none"> • Complete the Check for Understanding and Reteach strategies. • Answer questions on Chapter 22 in preparation for the test. 	TWE, p. 726 TWE, pp. 696–735	5–10 minutes
Homework <ul style="list-style-type: none"> • Have students complete Section 22.5 Assessment. • Assign relevant questions from Chapter 22 Assessment. • Assign supplemental problems to prepare students for the test. 	SE, p. 727 SE, pp. 732–735 <i>Supplemental Problems</i> , pp. 35–36 TCR	5 minutes

[total = 45 minutes]

BLOCK SCHEDULE LESSON PLAN

Review and Assessment

Pacing Guide

1/2 period

Review/Assessment

Hydrocarbons

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

Assessment Resources

- _____ *Chapter Assessment*, Ch. 22 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. 22
- _____ **TestCheck Software**, Ch. 22
- _____ **Chemistry Interactive CD-ROM**, Ch. 22 quiz
- _____ **Vocabulary PuzzleMaker Software**, Ch. 22

Activity	Resources	Suggested Time
Classroom Management <ul style="list-style-type: none"> • Have students check homework answers. 	<i>TWE</i> , pp. 727, 732–735 <i>Supplemental Problems</i> , pp. 35–36 TCR	5 minutes
Reviewing the Chapter <ul style="list-style-type: none"> • Answer any questions about homework. • Answer any final questions about Chapter 22. 	<i>Supplemental Problems</i> , pp. 35–36 TCR <i>TWE</i> , pp. 696–735	5 minutes
Assessment <ul style="list-style-type: none"> • Distribute the test and allow students to work quietly. 	<i>Chapter Assessment</i> , pp. 127–132 TCR	30–35 minutes
Closing <ul style="list-style-type: none"> • As students complete the test, have them read the Chapter 23 Opener. • If students have time, let them explore the Chemistry Online for Chapter 23. 	SE, p. 736 ga.science.glencoe.com	0–5 minutes

[total = 45 minutes]