

Energy

▶ pages 489–495
▶ 1 class session(s)

Section Objectives

- **Explain** what energy is and distinguish between potential and kinetic energy.
- **Relate** chemical potential energy to the heat lost or gained in chemical reactions.
- **Calculate** the amount of heat absorbed or released by a substance as its temperature changes.

National Science Content Standards

UCP.1, UCP.3; A.1; B.3, B.4, B.5, B.6; F.4, F.6

Georgia QCC

1, 2.1, 3.1, 9.6, 14.2, 16.1

Focus

_____ Section Focus Transparency 59 and Master

Teach

- _____ Discovery Lab, *SE* p. 489
- _____ Quick Demo, *TWE* p. 490
- _____ Identifying Misconceptions, *TWE* p. 493
- _____ Chemistry Journal, *TWE* p. 491
- _____ *Spanish Resources*, 16.1 *TCR*

Assess

- _____ Section Assessment, *SE* p. 495
- _____ Check for Understanding, *TWE* p. 494
- _____ Reteach, *TWE* p. 494
- _____ *Study Guide for Content Mastery*, p. 91 *TCR*

Enrichment/Application

- _____ Extension, *TWE* p. 494
- _____ *Cooperative Learning in the Science Classroom*, *TCR*

Chapter Assessment

- _____ Assessment, *TWE* pp. 492, 493, 495
- _____ *Alternate Assessment in the Science Classroom*, *TCR*
- _____ *Performance Assessment in the Science Classroom*, *TCR*

Multimedia Options

- _____ **Chemistry Interactive CD-ROM**, Section 16.1 Demonstration and Exploration
- _____ **Vocabulary PuzzleMaker Software**, Ch. 16
- _____ **Cosmic Chemistry Videodisc**, Disc 1, Side 2; Disc 2, Side 3; Disc 3, Side 6; Disc 4, Side 8
- _____ *Using the Internet in the Science Classroom*, *TCR*
- _____ Chemistry Web site: ga.science.glencoe.com

Heat in Chemical Reactions and Processes

▶ pages 496–500
▶ 1 class session(s)

Section Objectives

- **Describe** how a calorimeter is used to measure energy absorbed or released.
- **Explain** the meaning of enthalpy and enthalpy change in chemical reactions and processes.

National Science Content Standards

UCP.1, UCP.3; B.3, B.5; E.1

Georgia QCC

12, 16.1

Focus

_____ Section Focus Transparency 60 and Master

Teach

- _____ ChemLab 16, *SE* pp. 520–521
- _____ Quick Demo, *TWE* p. 498
- _____ Chemistry Journal, *TWE* p. 496
- _____ *ChemLab and MiniLab Worksheets*, pp. 62–64 *TCR*
- _____ *Small-Scale Laboratory Manual*, pp. 45–52 *TCR*
- _____ *CBL Laboratory Manual*, pp. 25–28 *TCR*
- _____ Teaching Transparency 47 and Master
- _____ *Spanish Resources*, 16.2 *TCR*

Assess

- _____ Section Assessment, *SE* p. 500
- _____ Check for Understanding, *TWE* p. 500
- _____ Reteach, *TWE* p. 500
- _____ *Study Guide for Content Mastery*, p. 92 *TCR*
- _____ Math Skills Transparency 24 and Master

Enrichment/Application

- _____ Extension, *TWE* p. 500
- _____ *Cooperative Learning in the Science Classroom*, *TCR*

Chapter Assessment

- _____ Assessment, *TWE* pp. 497, 500
- _____ *Alternate Assessment in the Science Classroom*, *TCR*
- _____ *Performance Assessment in the Science Classroom*, *TCR*

Multimedia Options

- _____ **Vocabulary PuzzleMaker Software**, Ch. 16
- _____ **Cosmic Chemistry Videodisc**, Disc 1, Side 2; Disc 3, Side 5; Disc 2, Side 3
- _____ *Using the Internet in the Science Classroom*, *TCR*
- _____ Chemistry Web site: ga.science.glencoe.com

Thermochemical Equations

▶ pages 501–505
▶ 2 class session(s)

Section Objectives

- **Write** the thermochemical equations for chemical reactions and other processes.
- **Describe** how energy is lost or gained during changes of state.
- **Calculate** the heat absorbed or released in a chemical reaction.

National Science Content Standards

UCP.1, UCP.3; A.1; B.3, B.5, B.6; E.2

Georgia QCC

1, 1.2, 3.1, 12, 14.3, 16.1

Focus

_____ Section Focus Transparency 61 and Master

Teach

- _____ MiniLab, *SE* p. 505
- _____ Problem-Solving Lab, *SE* p. 503
- _____ Quick Demo, *TWE* p. 501
- _____ Chemistry Journal, *TWE* p. 502
- _____ *ChemLab and MiniLab Worksheets*, p. 61 *TCR*
- _____ *Laboratory Manual*, pp. 121–124 *TCR*
- _____ *CBL Laboratory Manual*, pp. 29–32 *TCR*
- _____ Teaching Transparency 48 and Master
- _____ *Spanish Resources*, 16.3 *TCR*

Assess

- _____ Section Assessment, *SE* p. 505
- _____ Check for Understanding, *TWE* p. 505
- _____ Reteach, *TWE* p. 505
- _____ *Study Guide for Content Mastery*, p. 93 *TCR*

Enrichment/Application

- _____ Extension, *TWE* p. 505
- _____ *Cooperative Learning in the Science Classroom*, *TCR*

Chapter Assessment

- _____ Assessment, *TWE* pp. 503, 504, 505
- _____ *Alternate Assessment in the Science Classroom*, *TCR*
- _____ *Performance Assessment in the Science Classroom*, *TCR*

Multimedia Options

- _____ **Vocabulary PuzzleMaker Software**, Ch. 16
- _____ *Using the Internet in the Science Classroom*, *TCR*
- _____ Chemistry Web site: ga.science.glencoe.com

Calculating Enthalpy Change

▶ pages 506–512
▶ 2 class session(s)

Section Objectives

- Use Hess's law of summation of enthalpies of reaction to calculate the enthalpy change for a reaction.
- **Explain** the basis for the table of standard enthalpies of formation.
- **Calculate** ΔH_{rxn} using thermochemical equations.
- **Determine** the enthalpy change for a reaction using standard enthalpies of formation data.

National Science Content Standards

UCP.1, UCP.3; B.3, B.5; E.2

Georgia QCC

12

Focus

_____ Section Focus Transparency 62 and Master

Teach

- _____ Quick Demo, *TWE* p. 508
- _____ Chemistry Journal, *TWE* pp. 506, 511
- _____ *Laboratory Manual*, pp. 125–128 *TCR*
- _____ Teaching Transparency 49 and Master
- _____ *Spanish Resources*, 16.4 *TCR*

Assess

- _____ Section Assessment, *SE* p. 512
- _____ Check for Understanding, *TWE* p. 511
- _____ Reteach, *TWE* p. 511
- _____ *Study Guide for Content Mastery*, pp. 94–95 *TCR*
- _____ Math Skills Transparency 25 and Master

Enrichment/Application

- _____ Extension, *TWE* p. 511
- _____ *Challenge Problems*, p. 16 *TCR*
- _____ *Cooperative Learning in the Science Classroom*, *TCR*

Chapter Assessment

- _____ Assessment, *TWE* pp. 510, 511
- _____ *Alternate Assessment in the Science Classroom*, *TCR*
- _____ *Performance Assessment in the Science Classroom*, *TCR*

Multimedia Options

- _____ **Chemistry Interactive CD-ROM**, Section 16.4 Experiment and Video
- _____ **Vocabulary PuzzleMaker Software**, Ch. 16
- _____ **Cosmic Chemistry Videodisc**, Disc 1, Side 2
- _____ *Using the Internet in the Science Classroom*, *TCR*
- _____ Chemistry Web site: ga.science.glencoe.com

Reaction Spontaneity

▶ pages 513–519
▶ 2 class session(s)

Section Objectives

- **Differentiate** between spontaneous and nonspontaneous processes.
- **Explain** how changes in entropy and free energy determine the spontaneity of chemical reactions and other processes.

National Science Content Standards

UCP.1, UCP.3; A.1, A.2; B.3, B.5, B.6; E.1, E.2

Georgia QCC

1, 2, 2.1, 3.1, 5, 6, 8, 9.6, 12.1, 14.2, 16.1

Focus

_____ Section Focus Transparency 63 and Master

Teach

- _____ How It Works, SE p. 522
- _____ Quick Demo, TWE p. 515
- _____ Chemistry Journal, TWE p. 517
- _____ Teaching Transparency 49 and Master
- _____ Spanish Resources, 16.5 TCR

Assess

- _____ Section Assessment, SE p. 519
- _____ Check for Understanding, TWE p. 518
- _____ Reteach, TWE p. 518
- _____ Study Guide for Content Mastery, p. 96 TCR
- _____ Math Skills Transparency 26 and Master
- _____ Reviewing Chemistry: Preparing for the Georgia High School Graduation Test, TCR

Enrichment/Application

- _____ Extension, TWE pp. 514, 519
- _____ Supplemental Problems, pp. 23–24 TCR
- _____ Cooperative Learning in the Science Classroom, TCR

Chapter Assessment

- _____ Chapter 16 Assessment, SE pp. 524–527
- _____ Assessment, TWE pp. 517, 519, 521
- _____ Chapter Assessment, pp. 91–96 TCR
- _____ Alternate Assessment in the Science Classroom, TCR
- _____ Performance Assessment in the Science Classroom, TCR

Multimedia Options

- _____ Chemistry Interactive CD-ROM, Section 16.5 Video
- _____ Vocabulary PuzzleMaker Software, Ch. 16
- _____ MindJogger Videoquizzes, Ch. 16
- _____ TestCheck Software, Ch. 16
- _____ Cosmic Chemistry Videodisc, Disc 3, Side 6; Disc 4, Side 8; Disc 2, Side 3
- _____ Chemistry Interactive CD-ROM, Ch. 16 quiz
- _____ Using the Internet in the Science Classroom, TCR
- _____ Chemistry Web site: ga.science.glencoe.com