

12 Geometry: Finding Volume and Surface Area



Chapter Pacing Guide

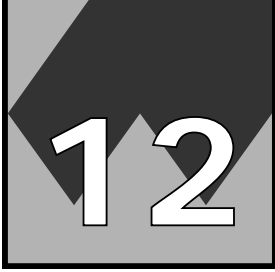
Please note that this pacing guide is based upon completing the entire text in 165 classes, approximately 50 minutes each. More time can be allotted for this chapter if you do not plan to teach the entire text.

| <i>Day (Standard)</i> | <i>Day (Honors)</i> | <i>Lesson</i> | <i>Title</i> |
|---------------------------|-------------------------|------------------------------------|--|
| 1 | 1 | *Chapter Project | Theme: Plants Turn Over a New Leaf |
| 2 & 3 | | *12-1A | <small>HANDS-ON LAB</small> Cooperative Learning Building Three-Dimensional Figures |
| | 2 | 12-1 | Drawing Three-Dimensional Figures |
| 4 | 3 | 12-1B | <small>THINKING LAB</small> Problem Solving Make a Model |
| 5 | 4 & 5 | 12-2 | Volume of Rectangular Prisms |
| | | *12-2B | <small>HANDS-ON LAB</small> Cooperative Learning Volume of Pyramids |
| 6 | 6 | 12-3 | Volume of Cylinders |
| 7 & 8 | | *12-4A | <small>HANDS-ON LAB</small> Cooperative Learning Nets and Surface Area |
| | 7 | 12-4 | Surface Area of Rectangular Prisms |
| 9 | 8 | 12-5 | Surface Area of Cylinders |
| 10 | 9 | Review: Study Guide and Assessment | |
| 11 | 10 | Assessment: Chapter Test | |

*Optional

Chapter Resources

| | |
|---|--|
| <p>Meeting Individual Needs <i>Investigations for the Special Education Student</i>, Exploring the Depths of the Sea, pp. 43-44 <i>Spanish Study Guide and Assessment</i> <i>Study Guide and Practice Workbook</i></p> | <p>Technology <i>Electronic Teacher's Classroom Resources (ETCR)</i> www.glencoe.com/sec/math/mac/mathnet</p> |
| <p>Interactive Mathematics: Activities and Investigations Unit 14</p> | <p>Applications <i>Family Letters and Activities</i>, pp. 49-50 <i>Spanish Family Letters and Activities</i>, pp. 49-50</p> |



Chapter Project (pp. 488-489)



Teacher's Name _____ Dates _____

Grade _____ Class _____ M Tu W Th F

Objectives

- _____ Understand the importance of surface area in the structure and function of leaves.
- _____ Find the volume and surface area of a leaf and write a ratio of the two.

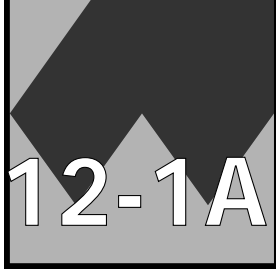
Theme: Plants

- _____ Chapter Project, *SE*, p. 489
- _____ Chapter 12 Notes, *TWE*, p. 488
- _____ Question of the Day, *TWE*, p. 488
- _____ ⇔ *Investigations and Projects Masters*, pp. 61-64

Homework Assignments

- _____ p. 501, Working on the Chapter Project, Exercise 20
- _____ p. 513, Working on the Chapter Project, Exercise 17
- _____ p. 521, Completing the Chapter Project, Alternative Assessment

KEY SE = Student Edition TWE = Teacher's Wraparound Edition ⇔ = Other Program Components



Lesson Planning Guide (pp. 490-491)



Teacher's Name _____ Dates _____
Grade _____ Class _____ M Tu W Th F

Objectives

- _____ Build and draw three-dimensional figures given the top, side, and front views.

| |
|--|
| NCTM Standards: 3, 6-10 |
| Georgia Quality Core Curriculum: Grade 7: 1, 2 |

MANAGEMENT

- _____ Getting Started, *TWE*, p. 490
- _____ ⇨ *Teacher's Guide for Overhead Manipulative Resources*, Lesson 12-1A

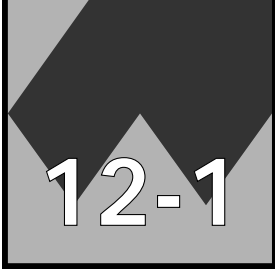
ASSESS

- _____ *TWE*, p. 491
- _____ ⇨ *Hands-On Lab Masters*, p. 67

| | |
|-------------------------------------|-------|
| Class Activity (pp. 490-491) | |
| _____ All: 1-10 | |
| _____ Alternate Assignment: | _____ |

- _____ Math Journal, *TWE*, p. 491

| | | | |
|------------|----------------------|------------------------------------|------------------------------|
| KEY | SE = Student Edition | TWE = Teacher's Wraparound Edition | ⇨ = Other Program Components |
|------------|----------------------|------------------------------------|------------------------------|



Lesson Planning Guide (pp. 492-495)



Teacher's Name _____ Dates _____

Grade _____ Class _____ M Tu W Th F

Objectives

_____ Draw a three-dimensional figure given the top, side, and front views.

| |
|---|
| NCTM Standards: 3, 6-10 |
| Georgia Quality Core Curriculum: Grade 7: 1, 19 |

1 FOCUS

- _____ 5-Minute Check, *TWE*, p. 492
- _____ ⇨ Transparency 12-1A
- _____ Motivating the Lesson, Hands-On-Activity, *TWE*, p. 492
- _____ Cross-Curriculum Cue, *TWE*, p. 492

2 TEACH

- _____ ⇨ Transparency 12-1B
- _____ Reading Mathematics, *TWE*, p. 492
- _____ In-Class Examples, *TWE*, p. 493
- _____ ⇨ *Study Guide Masters*, p. 88
- _____ Reteaching the Lesson, *TWE*, p. 493
- _____ ⇨ *CD-ROM Program*, Resource Lesson 12-1, Extended Activity 12-1

3 PRACTICE/APPLY

- _____ Check for Understanding, *SE*, p. 493-494

Homework Assignments (pp. 494-495)

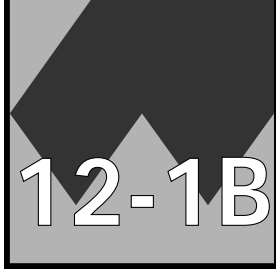
_____ Core: 9-21 odd, 23-26 _____ Enriched: 10-18 even, 20-26
 _____ Alternate Assignment: _____

- _____ Extra Practice, *SE*, p. 600
- _____ ⇨ *Practice Masters*, p. 88
- _____ Math in the Media, *SE*, p. 495
- _____ ⇨ *Georgia Parent and Student Study Guide Workbook*, p. 99

4 ASSESS

- _____ Closing Activity, Speaking, *TWE*, p. 495
- _____ Extending the Lesson, *TWE*, p. 495
- _____ ⇨ *Enrichment Masters*, p. 88

KEY *SE* = Student Edition *TWE* = Teacher's Wraparound Edition ⇨ = Other Program Components



Lesson Planning Guide (pp. 496-497)



Teacher's Name _____ Dates _____
Grade _____ Class _____ M Tu W Th F

Objectives

_____ Solve problems by making a model.

1 FOCUS

_____ Getting Started, *TWE*, p. 496

2 TEACH

- _____ Reading Mathematics, *TWE*, p. 496
- _____ In-Class Examples, *TWE*, p. 496
- _____ Reteaching the Lesson, *TWE*, p. 496

3 PRACTICE/APPLY

_____ Check for Understanding, *TWE*, p. 497

| |
|---|
| NCTM Standards: 1, 3, 6-9 |
| Georgia Quality Core Curriculum: Grade 7: 1, 19, 38 |

Homework Assignments (p. 497)

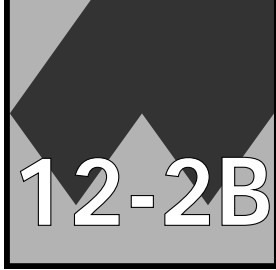
_____ All: 4-13
 _____ Alternate Assignment: _____

- _____ Extra Practice, *SE*, p. 601
- _____ Mixed Problem Solving, *SE*, p. 605-606

4 ASSESS

- _____ Closing Activity, Modeling, *TWE*, p. 497
- _____ Extending the Lesson, *TWE*, p. 497

| | | | |
|-----|-----------------------------|---|------------------------------|
| KEY | <i>SE</i> = Student Edition | <i>TWE</i> = Teacher's Wraparound Edition | ↔ = Other Program Components |
|-----|-----------------------------|---|------------------------------|



Lesson Planning Guide (p. 502)



Teacher's Name _____ Dates _____
Grade _____ Class _____ M Tu W Th F

Objectives

_____ Compare the volume of a pyramid with the volume of a prism.

| |
|--|
| NCTM Standards: 1-4, 6-10 |
| Georgia Quality Core Curriculum: Grade 7: 1, 2, 24, 25 |

MANAGEMENT

- _____ Getting Started, *TWE*, p. 502
- _____ ⇨ *Hands-On Lab Masters*, p. 11: centimeter grid paper
- _____ ⇨ *Teacher's Guide for Overhead Manipulative Resources*, Lesson 12-2B
- _____ ⇨ *Overhead Manipulative Resources*: centimeter grid

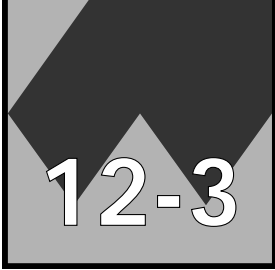
ASSESS

- _____ *TWE*, p. 502
- _____ ⇨ *Hands-On Lab Masters*, p. 68

| |
|-----------------------------------|
| Class Activity (p. 502) |
| _____ All: 1-5 |
| _____ Alternate Assignment: _____ |

_____ Math Journal, *TWE*, p. 502

KEY SE = Student Edition TWE = Teacher's Wraparound Edition ⇨ = Other Program Components



Lesson Planning Guide (pp. 503-507)



Teacher's Name _____ Dates _____

Grade _____ Class _____ M Tu W Th F

Objectives

_____ Find the volume of cylinders.

| |
|--|
| NCTM Standards: 1, 3, 4, 6-10 |
| Georgia Quality Core Curriculum: Grade 7: 1, 23, 24, 25 |

1 FOCUS

- _____ 5-Minute Check, *TWE*, p. 503
- _____ ⇨ Transparency 12-3A
- _____ Multiple Learning Styles, Auditory/Musical, *TWE*, p. 503
- _____ Motivating the Lesson, Problem Solving, *TWE*, p. 504

2 TEACH

- _____ ⇨ Transparency 12-3B
- _____ In-Class Examples, *TWE*, p. 504
- _____ Thinking Algebraically, *TWE*, p. 504
- _____ Using the Mini-Lab, *TWE*, p. 504
- _____ ⇨ *Teacher's Guide for Overhead Manipulative Resources*, Mini-Lab for Lesson 12-3
- _____ ⇨ *Study Guide Masters*, p. 90
- _____ *Reteaching the Lesson*, *TWE*, p. 505
- _____ Error Analysis, *TWE*, p. 505
- _____ ⇨ *CD-ROM Program*, Resource Lesson 12-3

3 PRACTICE/APPLY

- _____ Check for Understanding, *SE*, p. 505

Homework Assignments (p. 505-506)

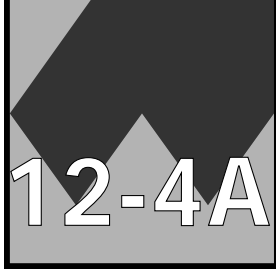
- _____ Core: 7-17 odd, 18-21 _____ Enriched: 8-14 even, 15-21
- _____ Alternate Assignment: _____

- _____ Extra Practice, *SE*, p. 601
- _____ *Practice Masters*, p. 90
- _____ ⇨ *Hands-On Lab Masters*, p. 83
- _____ ⇨ *Diversity Masters*, p. 25
- _____ School to Career Activity, *SE*, p. 507
- _____ ⇨ *Georgia Parent and Student Study Guide Workbook*, p. 101

4 ASSESS

- _____ Closing Activity, Speaking, *TWE*, p. 506
- _____ Mid-Chapter Self Test, *SE*, p. 506
- _____ Extending the Lesson, *TWE*, p. 506
- _____ ⇨ *Enrichment Masters*, p. 90
- _____ ⇨ *Assessment and Evaluation Masters*, Mid-Chapter Test, p. 322
- _____ ⇨ *Assessment and Evaluation Masters*, Quiz B, p. 323

KEY *SE* = Student Edition *TWE* = Teacher's Wraparound Edition ⇨ = Other Program Components



Lesson Planning Guide (pp. 508-509)



Teacher's Name _____ Dates _____
Grade _____ Class _____ M Tu W Th F

Objectives

___ Use nets to find the surface area of rectangular prisms.

| |
|---|
| NCTM Standards: 3, 6-10 |
| Georgia Quality Core Curriculum: Grade 7: 1, 2, 23, 24, 25, 41, 43 |

MANAGEMENT

- ___ Getting Started, *TWE*, p. 508
- ___ ⇨ *Hands-On Lab Masters*, p. 12: square dot paper
- ___ ⇨ *Teacher's Guide for Overhead Manipulative Resources*, Lesson 12-4A
- ___ ⇨ *Overhead Manipulative Resources*: rectangular dot paper

ASSESS

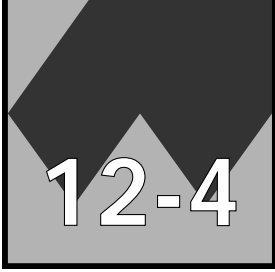
- ___ *TWE*, p. 509
- ___ ⇨ *Hands-On Lab Masters*, p. 69

Class Activity (pp. 508-509)

- ___ All: 1-13
- ___ Alternate Assignment: _____

___ Math Journal, *TWE*, p. 509

KEY SE = Student Edition TWE = Teacher's Wraparound Edition ⇨ = Other Program Components



Lesson Planning Guide (pp. 510-513)



Teacher's Name _____ Dates _____
 Grade _____ Class _____ M Tu W Th F

Objectives

_____ Find the surface area of rectangular prisms.

| |
|---|
| NCTM Standards: 1-3, 6-10 |
| Georgia Quality Core Curriculum: Grade 7: 1, 23, 24, 25, 38 |

1 FOCUS

- _____ 5-Minute Check, *TWE*, p. 510
- _____ ⇨ Transparency 12-4A
- _____ Motivating the Lesson, Hands-On-Activity, *TWE*, p. 510


2 TEACH

- _____ ⇨ Transparency 12-4B
- _____ Using the Mini-Lab, *TWE*, p. 511
- _____ ⇨ *Teacher's Guide for Overhead Manipulative Resources*, Mini-Lab for Lesson 12-4
- _____ In-Class Examples, *TWE*, p. 511
- _____ ⇨ *Study Guide Masters*, p. 91
- _____ Reteaching the Lesson, *TWE*, p. 511
- _____ Error Analysis, *TWE*, p. 511
- _____ ⇨ *CD-ROM Program*, Resource Lesson 12-4, Interactive Lesson 12-4
- _____ ⇨ *Interactive Mathematics Tools Software*

3 PRACTICE/APPLY

- _____ Check for Understanding, *SE*, p. 512

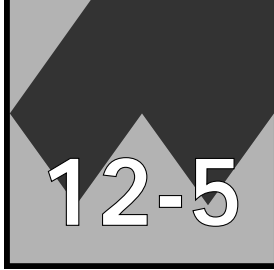
| | |
|---|--|
| Homework Assignments (pp. 512-513) | |
| _____ Core: 9-15 odd, 18-20 | _____ Enriched: 8-14 even, 15, 16, 18-20 |
| _____ Optional: 17 (Working on the Chapter Project) | |
| _____ Alternate Assignment: _____ | |

- _____ Extra Practice, *SE*, p. 602
- _____ ⇨ *Practice Masters*, p. 91
- _____ ⇨  *Georgia Parent and Student Study Guide Workbook*, p. 102

4 ASSESS

- _____ Let the Games Begin, *SE*, p. 513
- _____ Closing Activity, Writing, *TWE*, p. 513
- _____ ⇨ *Assessment and Evaluation Masters*, Quiz C, p. 324
- _____ Extending the Lesson, *TWE*, p. 513
- _____ ⇨ *Enrichment Masters*, p. 91

KEY SE = Student Edition TWE = Teacher's Wraparound Edition ⇨ = Other Program Components



Lesson Planning Guide (pp. 514-517)



Teacher's Name _____ Dates _____
Grade _____ Class _____ M Tu W Th F

Objectives

_____ Find the surface area of cylinders.

| |
|---|
| NCTM Standards: 1, 3, 6-10 |
| Georgia Quality Core Curriculum: Grade 7: 1, 23, 24, 25, 38 |

1 FOCUS

- _____ 5-Minute Check, *TWE*, p. 514
- _____ ⇨ Transparency 12-5A
- _____ Motivating the Lesson, Communication, *TWE*, p. 514
- _____ Multiple Learning Styles, Visual/Spatial, *TWE*, p. 514

2 TEACH

- _____ ⇨ Transparency 12-5B
- _____ Using the Mini-Lab, *TWE*, p. 515
- _____ ⇨ *Teacher's Guide for Overhead Manipulative Resources*, Mini-Lab for Lesson 12-5
- _____ In-Class Examples, *TWE*, p. 515
- _____ ⇨ *Study Guide Masters*, p. 92
- _____ Reteaching the Lesson, *TWE*, p. 516
- _____ Error Analysis, *TWE*, p. 516
- _____ ⇨ *CD-ROM Program*, Resource Lesson 12-5, Interactive Lesson 12-5

3 PRACTICE/APPLY

- _____ Check for Understanding, *SE*, p. 516

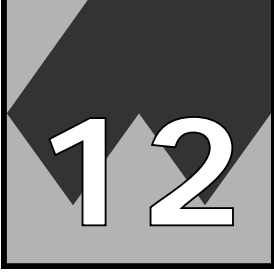
| | |
|---|----------------------------------|
| Homework Assignments (pp. 516-517) | |
| _____ Core: 7-17 odd, 18-21 | _____ Enriched: 8-14 even, 16-21 |
| _____ Alternate Assignment: _____ | |

- _____ Extra Practice, *SE*, p. 602
- _____ ⇨ *Practice Masters*, p. 92
- _____ ⇨ *Technology Masters*, Calculator Activity, p. 49
- _____ ⇨ *Classroom Games*, pp. 33-34
- _____ ⇨ *Georgia Parent and Student Study Guide Workbook*, p. 103

4 ASSESS

- _____ Closing Activity, Modeling, *TWE*, p. 517
- _____ ⇨ *Assessment and Evaluation Masters*, Quiz D, p. 324
- _____ Extending the Lesson, *TWE*, p. 517
- _____ ⇨ *Enrichment Masters*, p. 92

| | | | |
|------------|-----------------------------|---|------------------------------|
| KEY | <i>SE</i> = Student Edition | <i>TWE</i> = Teacher's Wraparound Edition | ⇨ = Other Program Components |
|------------|-----------------------------|---|------------------------------|



Review and Assessment (pp. 518-523)



Teacher's Name _____ Dates _____

Grade _____ Class _____
Review M Tu W Th F
Testing M Tu W Th F



- _____ Study Guide and Assessment, *SE*, pp. 518-521
- _____ Standardized Test Practice, *SE*, pp. 522-523
- _____ Chapter Test, *SE*, p. 618

⇔ **Assessment and Evaluation Masters (pp. 309-327)**

Multiple-Choice Tests

Free-Response Tests

- | | |
|---|---------------------------------------|
| _____ Form 1A, 1B, or 1C, pp. 309-314 | _____ Form 2A, 2B, or 2C, pp. 315-320 |
| _____ Standardized Test Practice, pp. 325-326 | _____ Performance Assessment, p. 321 |
| | _____ Cumulative Review, p. 327 |

- _____ ⇔ *MindJogger Videoquizzes*, Chapter 12
- _____ ⇔ *Test and Review Software*
- _____ ⇔ *CD-ROM Assessment Game*
- _____ ⇔ *State Test Preparation CD-ROM*
- _____ ⇔  *Georgia Parent and Student Study Guide Workbook*, p. 104
- _____ ⇔  *Georgia Stanford 9 Practice and Sample Test Workbook*

Interdisciplinary Investigation, SE, pp. 524-525

- _____ Interdisciplinary Investigation, *TWE*, pp. 524-525
- _____ ⇔ *Investigations and Projects Masters*, pp. 13-16

KEY SE = Student Edition TWE = Teacher's Wraparound Edition ⇔ = Other Program Components