9-12
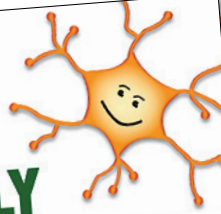
100 BRAIN-FRIENDLY LESSONS for Unforgettable TEACHING and LEARNING

MARCIA TATE

CORWIN

Thank you

FOR YOUR INTEREST IN CORWIN

Please enjoy this complimentary excerpt from *100 Brain-Friendly Lessons for Unforgettable Teaching and Learning, Grades 9-12,* by Marcia Tate. Use this math lesson with your students to help them apply algebra skills to finding areas of geometric figures.

LEARN MORE about this title, including Features, Table of Contents and Reviews.

CORWIN

ALGEBRA GRADES 9–12 LESSON 4

Areas of Geometric Figures

Lesson Objective(s): *What do you want students to know and be able to do?*

Apply algebra skills to finding areas of geometric figures.

Assessment (Traditional/Authentic): *How will you know students have mastered essential learning?*

Assess students' responses on the "Area of Composite Shapes" handout.

Ways to Gain/Maintain Attention (Primacy): *How will you gain and maintain students' attention? Consider need, <u>novelty</u>, meaning, or emotion.*

Knowing the area really helps to avoid not being able to fit in.

Content Chunks: *How will you divide and teach the content to engage students' brains?*

Lesson Segment 1: Find Areas of Geometric Figures

- **Activity 1: Area Formulas**

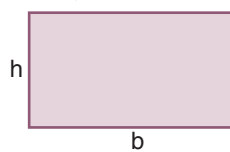Have students use the information below to solve equations**:**
    Review area formulas for squares, rectangles, and triangles.
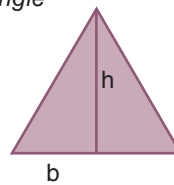
Square   *rectangle*   *triangle*

Surface = b x h = s²   Surface = b x h   Surface = $\dfrac{b \times h}{2}$
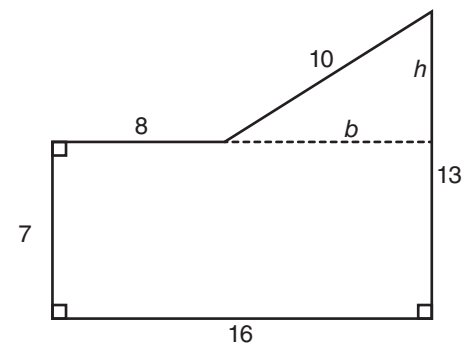
A *composite figure* is a figure that is composed of basic shapes. It can be divided into combinations of squares, rect-angles, and triangles to find its area.

Divide the figure into a rectangle and a right triangle.
Notice the base or the height of the triangle is unknown.
Use *b* and *h* to represent these lengths.

The bottom of the rectangle is 16 units long; the top of the rectangle is 8 units long plus the base of the triangle. Use this information to write and solve an equation.

$$b + 8 = 16$$
$$\underline{-8 \quad -8}$$
$$b \quad\;\; = 8$$

The area of the figure is the sum of the areas of the rectangles and the triangle.

The right side of the figure is 13 units long; 7 units from the rectangle plus the height of the triangle. Use this information to write and solve an equation.

$$h + 7 = 13$$
$$\underline{-7 \quad -7}$$
$$h \quad\;\; = 6$$

$$A = lw + \frac{bh}{2}$$

$$A = 16(7) + \frac{48}{2}$$

$$A = 112 + 24$$

$$A = 136 \text{ square units}$$

- **Activity 2: Cut and See**

Follow the activity found at https://tinyurl.com/y7dwfwc4 to have students cut a rectangle into triangles to form composite figures and prove their areas.

- **Activity 3: "Area of Composite Figures"**

Have students work with a group to find the area of each composite figure on the "Area of Composite Figures" handout.

- **Activity 4: "Area of Composite Shapes"**

Have students work individually to find the area of each composite shape on the "Area of Composite Shapes" handout.

Brain-Compatible Strategies: *Which will you use to deliver content?*

X	Brainstorming/Discussion	____	Music/Rhythm/Rhyme/Rap
X	Drawing/Artwork	**X**	Project/Problem-Based Learning
____	Field Trips	**X**	Reciprocal Teaching/Cooperative Learning
____	Games		
____	Graphic Organizers/Semantic Maps/Word Webs	____	Role Plays/Drama/Pantomimes/Charades
____	Humor	____	Storytelling
X	Manipulatives/Experiments/Labs/Models	**X**	Technology
		X	Visualization/Guided Imagery
____	Metaphors/Analogies/Similes	**X**	Visuals
____	Mnemonic Devices	____	Work Study/Apprenticeships
____	Movement	**X**	Writing/Journals

Area of Composite Figures