

TEACHER PAGE

**Lessons: Rancher 'Rithmetic 1, 2, 3 Teacher-Author: Lori Reardon
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**New Arizona Math Strand 4 Geometry and Measurement Grade 3,4,5,6
Articulated 4M64-06** Solve problems involving the perimeter of polygons—Rancher 'Rithmetic 1 and 2; Rancher 3 is based on **4M64-09** Solve problems for the areas of parallelograms (includes rectangles); **4M34-10** Represent area using a rectangular array; **4M44-09** Determine area of squares and rectangles; **4M44-10** Differentiate between perimeter and area of quadrilaterals; **4M54-07** Solve problems involving area of simple polygons.

Materials and Bibliography:

Math to Know, Cavanagh, Mary C., Great Source, Massachusetts, 2000.

Learning Objectives: The student will be able to:

- 1.solve problems using given formulas for perimeter
- 2.solve problems using given formulas for simple area.

Overview:

Examples (and formulas) for solving simple area and perimeter of given shapes are explained, modeled and available for practice. Students help ranchers calculate the amount of barbed wire needed to keep cattle on their property (perimeter – TRYIII), calculate the amount of fertilizer ranchers need by solving area of their land (area – TRYIII), and answer questions about perimeter and area with given shapes/information (SHOWII). The Rancher lessons have English, Navajo and Spanish narrations and scripts.

Content:

Perimeter and solving for it are explained. Formulas for rectangles and squares are given and modeled: students practice solving for perimeter. Then, solving perimeter for equilateral triangles is modeled with a formula. Students drag given formulas for rectangles, squares and equilateral triangles to the shapes they would use for solving perimeter (TRYII). In R'R 3, area and solving for it are explained. Formulas are given for rectangles and squares (LOOK, SEE). Students then practice solving for area (TRYIII). Rancher 'Rithmetic I and II focus on "perimeter" as No. III is directed towards "area." Both concepts are mixed throughout in the right buttons. Spanish/English math dictionary at: www.math2.org/math/spanish/eng-spa.htm

Engage students:

Students need to know basic keyboarding skills plus dragging and clicking with a mouse. A minimum grade 3 reading level is preferred. Teachers should relate these concepts to the world around the students.

Follow-up:

Following the southwestern theme, direct students to draw their own ranch shapes with measurements and design area and perimeter problems to share with classmates. Research the different tools used in measuring land and different types of measurement terms.

Assessment:

Students calculate perimeter, determine missing measurements, and calculate area of given shapes throughout the three lessons. Check buttons give feedback.

