

Activity 7.9A

Connections to the mathematics TEKS

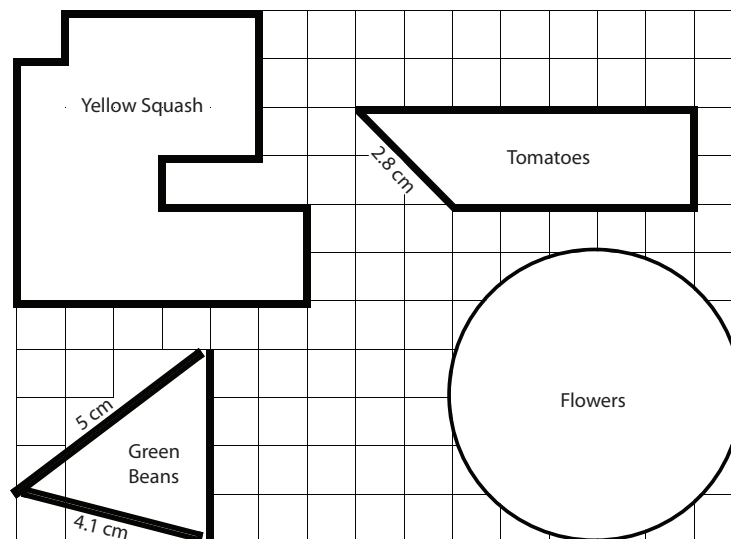
- (7.9) The student solves application problems involving estimation and measurement.

The student is expected to

- (A) estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes

Students consider the following scenario:

Roberto is planning his spring garden and makes the following sketch on centimeter grid paper:



He will have four beds of plants: flowers, tomatoes, yellow squash, and green beans. Before he starts planting, he will cover the bottom of each plant bed with a black plastic sheet. These plastic sheets will help keep out grass and other weeds. He will also surround each plant bed with a flexible, plastic border.

For each plant bed, estimate the amount of plastic sheeting and border that Roberto will need. Then determine the total amount of plastic sheeting and border Roberto will need for the entire garden. All measures can be rounded to the nearest tenth of a centimeter or square centimeter.

Optional: Students could also use grid paper to design their own garden or park according to given criteria, such as, “The garden must have at least one circle, one trapezoid, one triangle, and one irregular polygon.”

Questioning...

Open with...

How can you estimate and determine the amount the amount of plastic sheeting and plastic border that will be needed?

Probe further with...

- How can you use the dimensions of the plant beds to help you?
- What are the dimensions of the beds?
- What kinds of measurements are you trying to find (length, area, perimeter capacity, etc.)?
- Is there a formula you can use?
- Can you use your TAKS Mathematics Chart for this scenario?

Listen for...

- Does the student recognize that he or she needs to find area and perimeter?
- Does the student correctly identify the shapes using appropriate vocabulary?
- Does the student estimate before applying a formula or finding an exact amount?
- Does the student correctly identify the appropriate formulas?

Look for...

- Does the student use the correct units (cm and cm²)?
- Does the student use efficient methods to count the squares on the grid paper?
- Does the student correctly use the formulas?

TAKS Connections

Released TAKS items related to this activity can be found at the Texas Education Agency website (www.tea.state.tx.us):

- Spring 2006, grade 7, items 18, 16, and 25