Preliminary Planning Sheet
Grade 6 – Herding Cats

Domain(s)

Geometry

Standard(s)

6.G.A.3

Mathematical Practices

MP.2   MP.3   MP.5   MP.6

Major Underlying Mathematical Concepts

- Graphing points on a coordinate grid
- Distance on the coordinate plane
- Perimeter
- Scaling
- Scale units
- Addition
- Rate
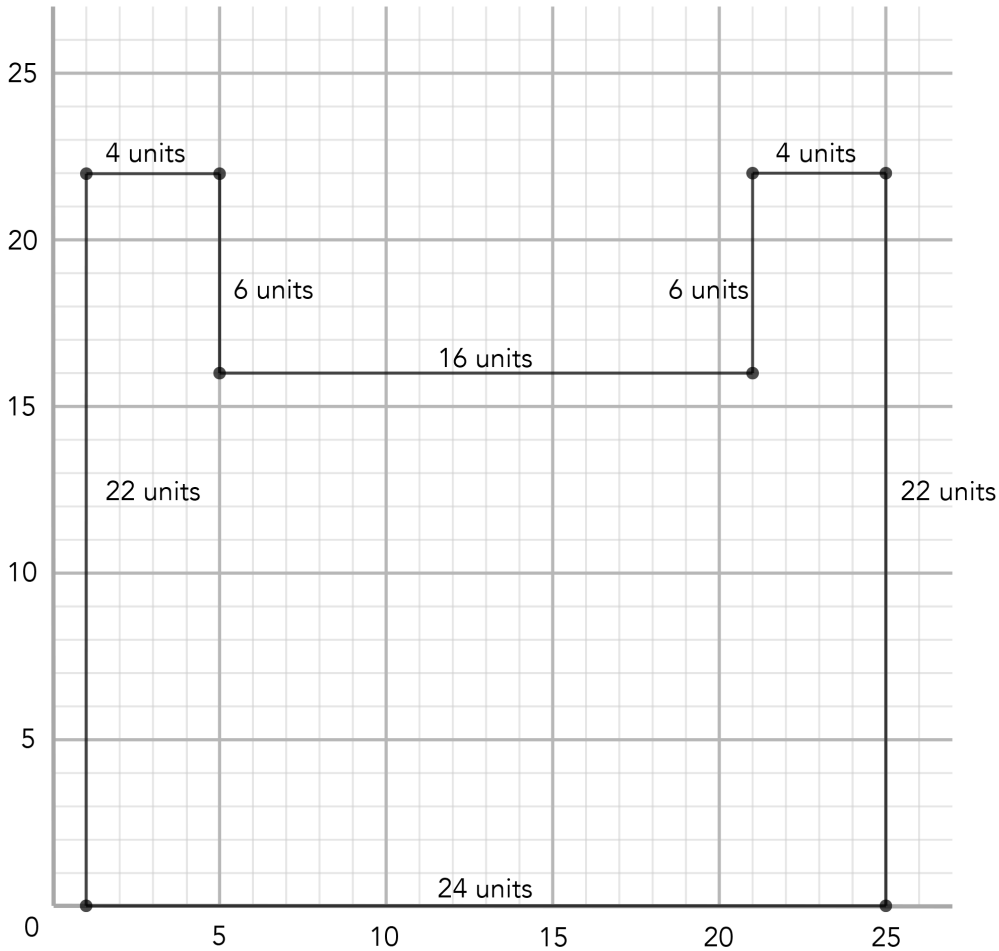
Problem Solving Strategies

- Graph coordinate points
- Create a scale drawing
- Table
- Calculate distance using coordinates
- Determine cost based on unit cost (rate)

Formal Mathematical Language and Symbolic Notation

- Coordinates
- Coordinate plane
- Perimeter
- Distance
- Vertices
- Scale
- Axis
- Grid
- Quadrant
- Total/Sum
- Length
- Rate

PROBLEM SOLVING
FOR THE 21ST CENTURY
BUILT FOR THE
COMMON CORE

Possible Solution(s)

The cost of having the electric fence installed should cost $2,766.80, which is below what the Meow Safe Fencing Company has offered us. Students may decide The Meow Safe Fencing Company's estimate is reasonable or not and should make an argument based on the information they consider. For example, other additional costs could be factored into their argument.

Line Segment	Length (units)	Actual Length (ft) (unit length x 30)	Cost (actual length x 0.89)
(1, 0) to (25, 0)	24	720	$640.80
(25, 0) to (25, 22)	22	660	$587.40
(25, 22) to (21, 22)	4	120	$106.80
(21, 22) to (21, 16)	6	180	$160.20
(21, 16) to (5, 16)	16	480	$427.20
(5, 16) to (5, 22)	6	180	$160.20
(5, 22) to (1, 22)	4	120	$106.80
(1, 22) to (1, 0)	22	660	$587.40
Total	104	3120	$2,766.80

Possible Connections

- The Meow Safe Fencing Company's estimate is $423.20 more than the expected cost.
- Determine the area of the roaming space (432 sq units or 388,800 sq ft).
- The roaming area has a perimeter of 1,040 yards.
- The Meow Safe Fencing Company charges $2.67 per yard of electric fencing.
- Maru could maximize the area and spend less money on fencing if she made the roaming area a rectangle instead of an irregular shape.
- Relate to a similar task and state a math link.
- Cost for fencing can be stated algebraically: $C = 0.89f$.
  - C = total cost of fencing for a property
  - f = total feet needed for fencing