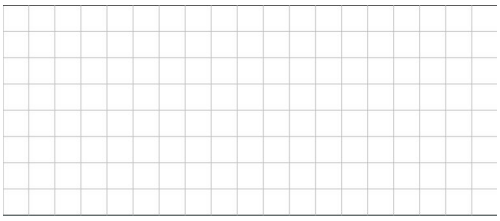
Student Activity Sheet

Name:

Period:

Fencing In Spaces: Constant Perimeter, Changing Area

1) Play around under the 'Explore' tab of the **Area Builder** simulation, building different rectangles with a perimeter of 12 meters. What do you notice? Write your observations below or sketch their shapes (label the *dimensions*, length and width).



2) Now, you only have **24 meters of fencing** to build a *rectangular* pen for a dog. You are trying to build a dog pen that will give your dog the most amount of area (space to run around!). Using the simulation, build different rectangles and record their shape in the table below.

Rectangle (L x W)	Sketch It! Label the Side Lengths (dimensions)	Length (m)	Width (m)	Perimeter (m)	Area (m^2)
1 x 11		1	11	(1+11+1+11) = 24	11
2 x ___					
3 x ___					

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Rectangle (L x W)	Sketch It! Label the Side Lengths (dimensions)	Length (m)	Width (m)	Perimeter (m)	Area (m^2)
					
					
					

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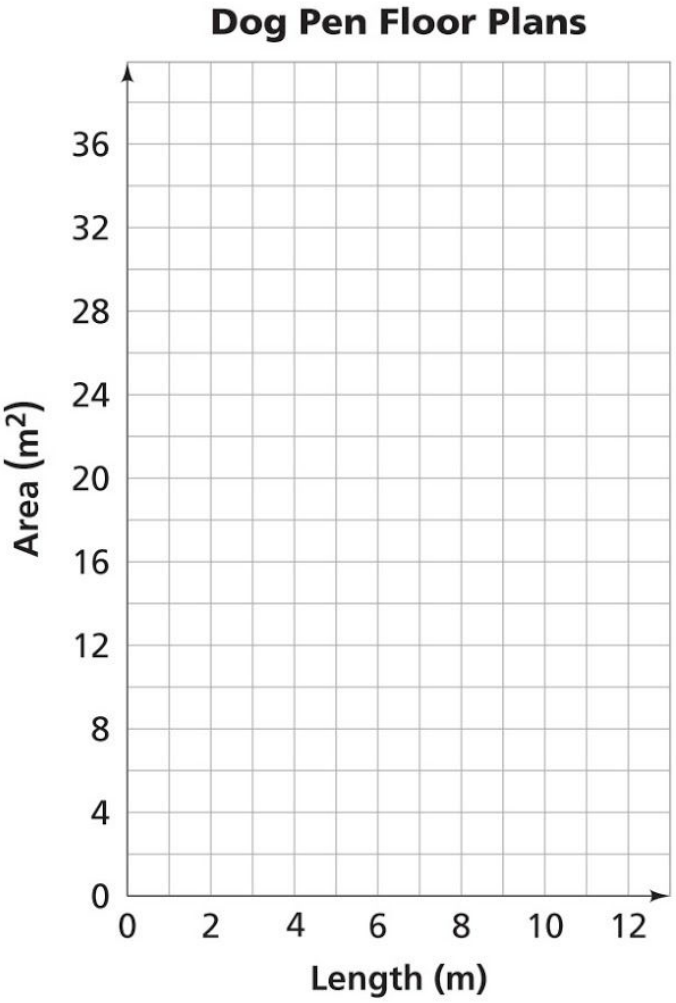
Reflection Questions:

1) Which design's dimensions would give your dog the **greatest** amount of area? How do you know?
2) Which dimensions would give your dog the **least** amount of area?
3) Using your notes/activity sheet from Lesson 1.2, how is **fixed perimeter** different from **fixed area**? Justify how you know.
Generalize! 4) Do you have a *hypothesis* for how we can *always* obtain the **largest area** with a given perimeter?

Name ..... Date ..... Class .....

Labsheet 1.3B

Length and Area Graph



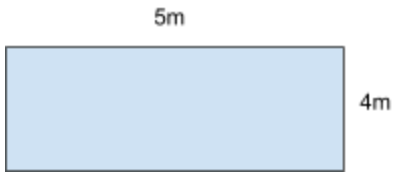
Student Activity Sheet

Name:

Period:

Exit Slip:

Peter wants to build a small bunny pen. He has only enough fencing for a total perimeter of 20 meters. He decides he wants to build a rectangle like the one shown below.



1) Will Peter's design work? Justify how you know.

2) Draw a bunny pen that would give the greatest area with a fixed perimeter of 20m. How can you convince Peter that it works?