Name: _____ Date: _____

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Section 7.3 Math Link

This worksheet will help you with the Math Link on page 277.

You are designing a park that includes a large parking lot that will be covered with gravel.

1. Design two different-shaped parking lots using any single shape or combination of regular shapes. Include the dimensions on a drawing of each parking lot design. Note that you will need to be able to calculate the areas of your parking lots. Each area should be a different shape. Make them no less than 200 m^2 and no greater than 650 m^2.

2. Calculate the area of each of your parking lots.

3. Look at the picture of the truck on page 277. A truck with dimensions similar to those shown in the picture will deliver the gravel.

a) The length is $(x + 4)$ m, the width is x m, and the depth is 1 m. Write an expression for the volume of the truck. _____

_____

b) You want to fill each parking lot with gravel to a depth of 5 cm. What decimal number represents 5 cm expressed in metres? _____ .

c) Divide the volume of your truck by this decimal number. This is the approximate area that a single load of gravel will cover to the required depth.

4. There are three sizes of trucks that can deliver the gravel. The widths are 1.5 m, 2 m, and 3 m. Approximately, how many truckloads would it take for each truck size to deliver the required amount of gravel for each of your parking lots? You will cover each parking lot to a depth of 5 cm.

a) Collect information about the volume of one truckload for each truck size. Use a table like the one below. An example, using a truck width of 1 m, has been done for you.

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(continued)

Volume for Each Truck Size			
Truck Width, *x* (m)	**Length, *x* + 4 (m)**	**Depth (m)**	**Volume of One Truckload (m^3)**
1	1 + 4 = 5	1	1 × 5 × 1 = 5

b) Collect information about the volume of gravel needed to fill each of your parking lots to a depth of 5 cm. Use a table like the one below.

	Area (m^2)	**Depth (m)**	**Volume (m^3)**
Parking Lot A			
Parking Lot B			

c) Determine the approximate number of truckloads for each truck size it takes to cover each of your parking lots. Use a table like the one below. Note that if you get a decimal value for the number of truckloads, you will need to round up because you cannot have a partial truckload.

Truck Size	**Volume of One Truckload (m^3)**	**Volume Needed for Parking Lot A (m^3)**	**Number of Truckloads to Cover Parking Lot A**	**Volume Needed for Parking Lot B (m^3)**	**Number of Truckloads to Cover Parking Lot B**
1.5-m width					
2-m width					
3-m width					

5. Which truck size do you think would be the most efficient to use for each of your parking lots? Explain your reasoning.