



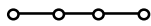
February 2000

### Activity 3: Fencing the Yard

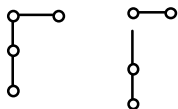
#### Solution

$197 \div 8 = 24$  with a remainder of 5 feet, implying 24 8-foot sections and 1 5-foot section.  
 $212 \div 8 = 26$  with a remainder of 4 feet, implying 26 8-foot sections and 1 4-foot section.  
 $100 \div 8 = 12$  with a remainder of 4 feet, however by design the couple is using 11 8-foot sections and 2 6-foot sections.

The number of fence posts required is one more than the number of sections in a straight line. For example, as the figure below shows, to build a fence with 3 sections in a straight line requires 4 fence posts.



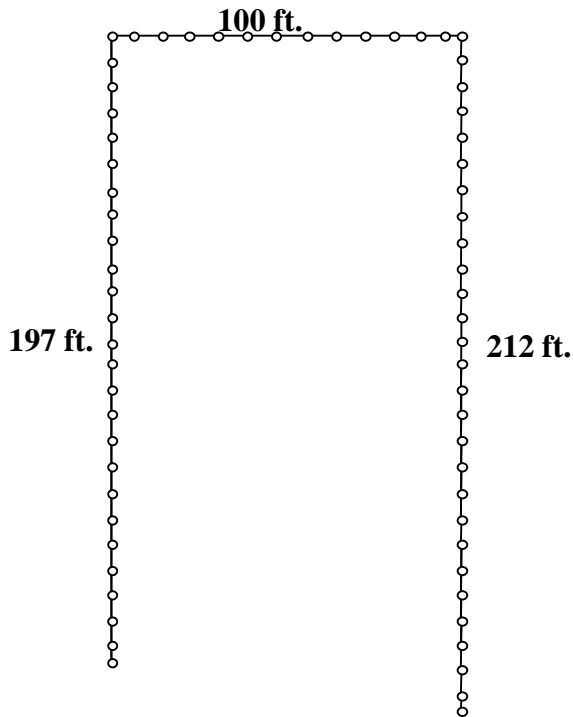
The corner post is used in both sides of the property and can only be counted as required for one of the two sides. For example, the figure on the left shows that 3 sections around a corner require 4 posts, but the figure on the right shows that the corner post can only be counted as belonging to one of the two sides.



To find the number of posts the couple needs, students need to determine the total number of sections of fencing. The 197-ft. side of the property requires 25 sections of fence, 24 8-ft. sections and 1 5-ft. section. The 100-ft. side requires 13 sections, 11 8-ft. sections and 2 6-ft. sections. The 212-ft. side requires 27 sections, 26 8-ft. sections and 1 4-ft. section. Therefore, the total number of sections of fencing is  $25 + 13 + 27$  or 65 sections. The number of posts therefore will be  $26 + 14 + 28 - 2 = 66$ .

Two of the posts are corner posts 6 in. x 6 in. x 10 ft., and remaining 64 posts are 4 in. x 4 in. x 10 ft.

Students can also use a diagram, such as the one below, to determine the number of fence posts.



The total cost of the fence posts regardless of the style fencing is  $64 \times \$10.89 = \$696.96$  plus  $2 \times \$23.60 = \$47.20$  for a grand total of  $\$744.16$ .

To determine the cost of the fence sections, students can use the information from the table in the activity to create another table.

Total cost for 61 sections

Qty.	Description	Standard	Price	Cost
61	Solid 1 x 4 Red Cedar	6 ft. x 8 ft.	\$76.50	\$4666.50
61	Peek-A-Boo 1 x 4 Red Cedar	6 ft. x 8 ft.	\$62.25	\$3797.25
61	Board by Board 1 x 4 Red Cedar	6 ft. x 8 ft.	\$85.00	\$5185.00
61	Basket Weave 1 x 4 Red Cedar	6 ft. x 8 ft.	\$70.00	\$4270.00
61	Basket Weave with Topper	6 ft. x 8 ft.	\$88.00	\$5185.00

To build a fence using Solid 1 x 4 Red Cedar, the cost is  $\$744.16$  for posts +  $\$4666.50$  for the 8-ft. sections +  $\$49.50$  for a 5-ft. section +  $\$40.00$  for a 4-ft. section +  $\$120.00$  for the two 6-ft. sections for a total cost of  $\$5620.16$ .

To build a fence using Peek-A-Boo 1 x 4 Red Cedar, the cost is  $\$744.16$  for posts +  $\$3797.25$  for the 8-ft. sections +  $\$40.00$  for a 5-ft. section +  $\$33.50$  for a 4-ft. section +  $\$97.50$  for the two 6-ft. sections for a total cost of  $\$4712.41$ .

To build a fence using Board by Board 1 x 4 Red Cedar, the cost is  $\$744.16$  for posts +  $\$5185.00$  for the 8-ft. sections +  $\$55.50$  for a 5-ft. section +  $\$45.50$  for a 4-ft. section +  $\$131.00$  for the two 6-ft. sections for a total cost of  $\$6161.16$ .

To build a fence using Basket Weave 1 x 4 Red Cedar, the cost is \$744.16 for posts + \$4270.00 for the 8-ft. sections + \$46.50 for a 5-ft. section + \$38.00 for a 4-ft. section + \$111.00 for the two 6-ft. sections for a total cost of \$5209.66.

To build a fence using Basket Weave with Topper 1 x 4 Red Cedar, the cost is \$744.16 for posts + \$5185.00 for the 8-ft. sections + \$60.00 for a 5-ft. section + \$48.00 for a 4-ft. section + \$139.00 for the two 6-ft. sections for a total cost of \$6176.16.

The Basket Weave and the Peek-A-Boo fencing are within the couple's budget.