Amplifying Instructional Task – Grade 7 Example

Original Task
Represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form y = mx + b. 7(7)(A)

Mr. Mott recorded the number of plants in each row of the Children's Park garden as shown below.

Garden

Row	Number of Plants
1	8
2	12
3	16
4	20
r	p

Write an equation that could be used to determine *p*, the number of plants in the *r*th row of this garden.

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Amplified Task

Materials to make available:
- Circular dot paper
- Garden Store Sales Ad
- Word bank

- Set of 3 circles – 2", 3", 4" radius (1 of each made of card stock/cardboard)

- Standard measurement tools
- Chart paper

Image Search:
Key words - images of circular gardens

Video:
Start Organic-How to Build a Circular, Raised Bed Garden Network – San Jose, Ca.
https://www.youtube.com/watch?v=00hl4aJVk8o

Task A (Amplified Task):
You are to construct a circular garden for the Children's Park. The center of the garden will feature a water fountain that has a diameter of 2 feet. The first row of plants will form a circle 6 inches from the base of the water fountain. Each row of plants must be 6 inches apart. The first four rows of the garden are illustrated below.
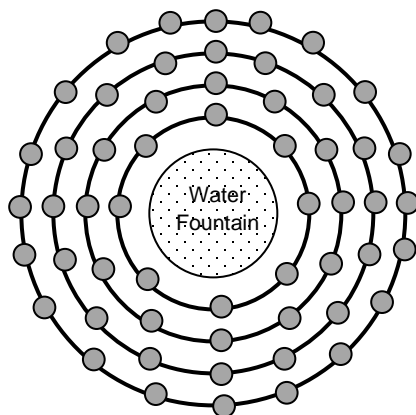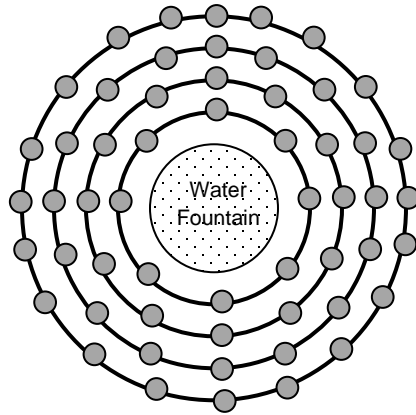

Represents 1 Potted Plant: ⬤

The installation of the water fountain will cost $156.90. Each plant is $13.69, and each bag of stones costs $35. These prices include labor and tax.
- What is the cost to create a garden that has 5 rows?
- What algebraic generalization can be made to determine the cost of the plants needed for the nth row of this garden?
- You will need to cover the area between each row of the garden with colored stones. If one bag of colored stones will cover an area of 16 square feet, about how many bags of colored stone will be needed for a garden that has 5 rows?
- Write a letter to the board of the Children's Park explaining the design of the garden and cost.

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Task B (Scaffolded Task):
You are to construct a circular garden for the Children's Park. The center of the garden will feature a water fountain.

Represents 1 Potted Plant: ⚪

- How many plants will be needed for the 10th row?

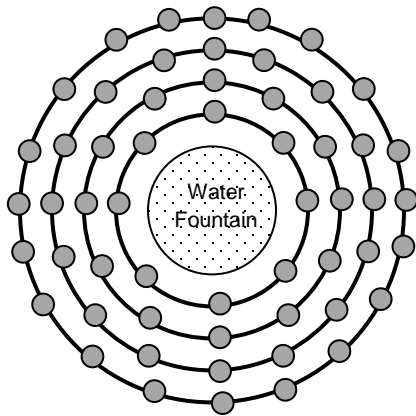- What algebraic generalization can be made to determine the number of plants in the nth row of this garden?

Row Number	Number of Plants

- Write a letter to the grounds keeper of the Children's Park explaining how he could determine the number of plants needed for any row of the garden.

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Task C (Scaffolded Task):
You are to construct a circular garden for the Children's Park. The center of the garden will feature a water fountain.

Water
Fountain

Represents 1 Potted Plant: ◯

- How many plants will be needed for the 10th row?
- What algebraic generalization can be made to determine the number of plants in the *n*th row of this garden?
- Write a letter to the grounds keeper of the Children's Park explaining how he could determine the number of plants needed for any row of the garden.

Children's Park Grounds Keeper
1026 Avenue E
Houston, Texas 77070

Dear Mr. Johnson,
To find the number of plants in any row of the circular garden, you would
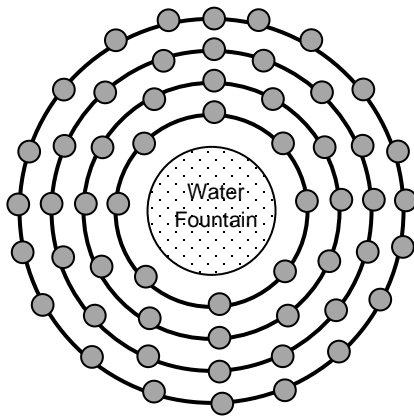
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Sincerely,

_____

Amplifying Instructional Task – Grade 7 Example

Task D (Enriched Task):
Mr. Mott created the following circular garden.

Represents 1 Potted Plant: ⊙

- Determine the relationship between the row number and the number of potted plants in Mr. Mott's garden.
- Create a garden using a different geometric design. The relationship between the rows and the number of potted plants should be linear when graphed.
- Use a garden center sales ad to determine a detailed estimate of the cost to create 5 rows of your design.