



Perimeter + Area + Minecraft

 Beginner  1 hr 30 min

Explore Minecraft and use your knowledge of perimeter and area to create gardens.

OBJECTIVES

-  Learners will use Minecraft to model area and perimeter problems
-  Learners will identify the formula to calculate the perimeter of a rectangle
-  Learners will identify the formula for the area of a square.

STANDARDS

-  **Common Core:**
CCSS.MATH.CONTENT.3.MD.D.8 CCSS.MATH.CONTENT.3.MD.C.7.A
CCSS.MATH.CONTENT.6.G.A.1

Introduction

🕒 10 mins

Linking

This is a physical activity you can do as a class when the students come in. Probably in your school you have square tiles on the floor. Tape of random sizes for rectangles and squares. When the students come in, have them stand by a shape. As a group, they will calculate the area and perimeter of their shape.

Engage

We just did an activity where we calculated the area and perimeter of a 2D shape using tape. But what about the digital world? We can use our Kanos and Minecraft to create a similar environment as the floor and tape, but MORE! We can use minecraft to create larger structures and use our math knowledge to calculate the area and perimeter of those creations.

Collect Kanos

🕒 5 mins

Retrieve Computers, Turn On, Log In..

Exploration Activities

Challenge 0: Review Math Formulas

🕒 30 mins

This lesson can be used as the main learning focus or as a supplemental. Review the [formulas for finding area](#) and the [formula to find the perimeter](#) of shapes. Practice a few problems together as needed.

Challenge 1: Design a House

🕒 30 mins

Turn on your Kano and go into Minecraft. Now that you have practiced a few perimeter and area examples you will be given a challenge. Can you build a house in Minecraft that will give you an area of 60?

Challenge 2: Design a House and Garden

🕒 30 mins

Level it up, can you add to your house with an area of 60 a garden that has a perimeter of 20?

Challenge 3: Add the formulas!

⌚ 30 mins

You have created a unique garden and house using math! Now, can you display on your Minecraft world the specific measurements of each shape that gave you the area and perimeter?

Save your work and share to Kano World!

Closing

15 mins

Evaluation

What was your favorite visual you created? Make sure you share this visual via Kano World and in the description write what word problem you were solving.

Closing

Before you leave write on a post-it note what problem you shared for the WORLD. Put the post-it note on the door when you exit.

In your engineering journals have the students write one idea they have for next time to use Kano Code.



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Perimeter + Area

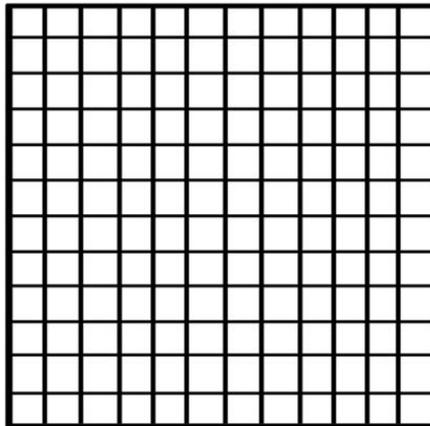
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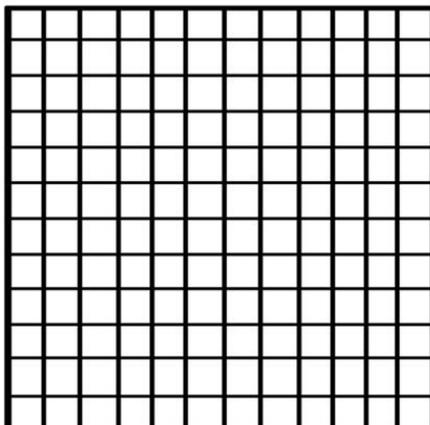
Explorer Questions

Directions: Below you have an image of a grid.

In the first grid can you color in a rectangle that would have an area of 20 cubes?



In the second grid can you color in a rectangle that would have a perimeter of 16?



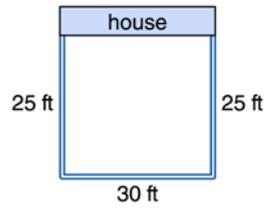


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Perimeter + Area

Programmer Questions

This is an image of the base of a house. Can you calculate the area and perimeter of it?



Creator Question

Create your own Minecraft Challenge! Write down a challenge a classmate would finish in Minecraft using perimeter and area. After you write out a description of the challenge, draw an image to represent it. Your challenge can be similar to the ones done in your Kano session today.



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Perimeter + Area

Name: _____

Date: _____

Explorer Questions

Directions: Below you have an image of a grid.

In the first grid can you color in a rectangle that would have an area of 20 cubes?

Learners can shade in different ways. These include: 4 x 5, 2 x 10, 1 x 20

In the second grid can you color in a rectangle that would have an perimeter of 16?

Learners can shade in different ways. These include: 4 x 4, 8 x 2, 1 x 16



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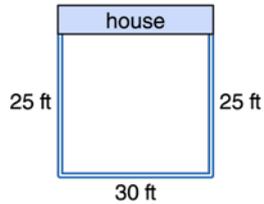
Perimeter + Area

Programmer Questions

This is an image of the base of a house. Can you calculate the area and perimeter of it?

Area = 750 square feet

Perimeter = 110 feet



Creator Question

Create your own Minecraft Challenge! Write down a challenge a classmate would finish in Minecraft using perimeter and area. After you write out a description of the challenge, draw an image to represent it. Your challenge can be similar to the ones done in your Kano session today.

Let learners be creative! They can use Minecraft as well as paper and pen to draw out their challenge problem. All final projects should have:

- A challenge questions (for area, perimeter, or both)
- An visual with the challenge in Minecraft or on paper
- A solution to their challenge