



# Perimeter & Area

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## World Required

- Geometry World, available at [education.minecraft.net/worlds](https://education.minecraft.net/worlds)

## Age Group(s)

- Ages 9-12

## Subject Area(s)

- Math

## Skill(s) Developed

- Critical Thinking
- Collaboration
- Communication

## Learning Objective(s)

- Students will construct several rectangles using a specific number of blocks
- Students will construct several rectangles with a specific perimeter
- Students will construct several rectangles with a specific perimeter and have to calculate the area of each rectangle
- Students will construct several rectangles with a specific area and have to calculate the perimeter of each rectangle
- Students will construct two rectangles with a specific area. These two rectangles have to be those with the maximum and minimum perimeter
- Students will construct at least 3 figures (everything but rectangles) with a specific number of blocks and have to calculate the perimeter of each figure
- Students will construct adjacent figures with two type of block. They need to calculate the perimeter and the area of each distinct figure and then the perimeter and the area of the entire figure, writing on a board their viewpoints

## Lesson Description

The Geometry World is divided in nine areas and in each area there are 8 geometry assignments written on posters. In each area could work at the same time three students for a total of 27 students. The game mode should be left in survival mode (the world file is already set in survival mode) and the time should be always set to day (/time set day command) by the op user, avoiding monsters and so on, because students are invited to share the few resources they find in every chest.

- At first students have to build simple rectangles without considering any kind of calculation
- On the next assignments students have to build specific rectangles with specific perimeters or areas
- Students have to build all possible rectangles having specific perimeters and need to calculate their areas
- Students have to build only two rectangles those with the maximum and minimum perimeter
- Students have to calculate the perimeter of figures that aren't rectangles
- Students have to build figures formed by two different rectangles and calculate the perimeter and the area of every figures, expressing also their consideration about the sum of perimeters and areas of adjacent figures
- Students have to share the area where they are building their rectangles because it's quite limited and tight

## Evidence of Learning

- Students are able to describe what is a perimeter
- Students are able to describe what is an area
- Students are able to identify different figures with the same area or the same perimeters
- Students are able to describe that figures with the same area can have different perimeters
- Students are able to share their working areas with others building vertical rectangles instead of horizontal ones
- Students are able to describe adjacent figures have a total area that is the sum of each figure. That is not the same for the perimeter calculation.

## Curriculum Extensions

- Students can be invited to measure their classroom and calculate the perimeter and the area
- Students can be invited to build their classroom and introduced to the concept of volume

Screenshots from Geometry World



