

Class Extension Lab

- Due No Due Date
- Points 1
- Submitting a website url



[\(https://github.com/learn-co-curriculum/phase-1-class-extension-lab\)](https://github.com/learn-co-curriculum/phase-1-class-extension-lab)



[\(https://github.com/learn-co-curriculum/phase-1-class-extension-lab/issues/new\)](https://github.com/learn-co-curriculum/phase-1-class-extension-lab/issues/new)

Learning Goals

1. Practice writing JavaScript classes that inherit from other classes

Introduction

In this lab we're going to create a geometry application that allows us to calculate different properties of multiple shapes. We'll be using JavaScript's `class` keyword to build objects that inherit from its base object.

Practice Writing JavaScript classes That Inherit From Other Classes

1. Define a `Polygon` class. `Polygon` will accept an `Array` of integers as a parameter, which will represent each `side` of a shape.
 - Use the `get` keyword to make a getter method `countSides` that counts the number of sides (each index in the array).
 - Use the `get` keyword to make a getter method `perimeter` that calculates the sum of each side (each index in the array) of the polygon. This method will become accessible to its child classes.
1. Define a `Triangle` class that inherits from `Polygon`.
 - It will automatically have access to `count` and `perimeter` inherited from `Polygon`.
 - Use the `get` keyword to make a getter method `isValid` that checks if the given 3 sides for a triangle is valid.

The sum of the lengths of any two sides of a triangle is greater than the length of the third side. If you take the three sides of a triangle and add them in pairs, the sum is greater than (not equal to) the third side. If that is not true, then it is not possible to construct a triangle with the given side lengths.

1. Define a `Square` class that inherits from `Polygon`.

- It will automatically have access to `count` and `perimeter` inherited from `Polygon`.
- Use the `get` keyword to make a getter method `isValid` that checks if the given 4 sides for a square is valid. A square is valid when the lengths of all sides are equal.
- Use the `get` keyword to make a getter method `area` that calculates the area of the square.

Resources

- [Understanding Getters ↗ \(https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Functions/get\)](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Functions/get)