What are the four pillars of Object-Oriented Programming? Explain each pillar.

What is the relationship between a Class and an Object?

    Object-Oriented Programming (OOP) is important to writing code in Javascript. OOP is maintained by 'The Four Pillars' including: abstraction, encapsulation, inheritance, and polymorphism. Abstraction involves hiding operation details away in a function or something else. It is not critical to understand how the function code works but simply that the functions work and produce the expected output. In this fashion, similar code is used and reused in a general function and called whenever needed. Keeping code private in encapsulation is the second pillar. This involves keeping long code in separate smaller functions or modules that create limited access to the object through the object's own methods. The third pillar is inheritance. Code reusability is key to writing clear code. When one object has the same properties or methods, or most of them, as another, inheritance allows a parent class to be made and child classes related to this parent prototype. When a child prototype inherits from the parent but has a different method, it is the fourth pillar, polymorphism. Polymorphism allows the child to override the parent and do different things than the parent.

    Objects are fundamental in OOP. An object is a structure that consists of data and functions called properties and methods. An object is like a container for the properties and methods and will have a key-value pair. An object could also be an instance of a class. A class is simply a template for creating objects using the constructor function. Values are passed into the constructor and a new instance of that class is created. An object is created.

Resources:

https://www.freecodecamp.org/news/four-pillars-of-object-oriented-programming/

https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects/Object-oriented_programming

https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects/Classes_in_JavaScript

https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects

https://www.w3schools.com/js/js_objects.asp