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Week 5 Research Assignment

1. The four pillars of object-oriented are abstraction, encapsulation, inheritance and polymorphism.

Abstraction is hiding away some of the details (whether that is the details of what the object will be or a function) so you can simplify your code and make it more reusable.

Encapsulation means hiding away our data or bits of our code. In object-oriented programming, this means that each object should control its own state. So each object should have its own methods, properties, etc. We do this to avoid bugs from variables being overridden and to make our code easier to follow.

Inheritance allows us to reuse code from different objects. Basically, it allows one object to inherit the properties and methods of another object. This is primarily used when we have code that is very similar except for maybe one or two small parts.

Polymorphism is closely related to inheritance. It allows objects to share behaviors and also override the property of the inherited object if needed.

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

2. The relationship between a Class and an Object is best described as the Class is the template for what the object will be. It isn't the object yet, but the Class holds all the parameters and methods that the object will have. We generally use Classes if there are going to be many Objects with common properties.

Source: <https://www.geeksforgeeks.org/difference-between-class-and-object/#>