What is abstraction and why is it important?

Abstraction is the idea of conveying ideas through different layers. An example If I wanted to convey the idea of a pink elephant to someone who had no idea what pink was or what an elephant was, I would start off by breaking the idea down into an elephant and the color pink. I would then define what an elephant and what the color pink is. This would make the next level easier to define to the individual. They would know what pink was and what an elephant was putting these together they can understand what a pink elephant would look like. This is abstraction. I had an idea I wanted to convey so I broke it down into basic “objects” or pieces. Then I used those objects to convey my message.

The importance of abstraction is being able to convey ideas to other people, or in this case convey our ideas to computers and have the computer create an illustration of our message. In the dice game we are working on it has to start off with creating a dice. A dice in this case is a 6-sided object with the numbers 1 -6 on the sides. Each side has its own number. Next, we have to make a function to roll the dice. Now this would take many more lines of code, except someone has generously made a module called random. This module randomly picks an item within parameters we have set. So, we set the module to pick a number between 1 and 6. Now so far this has a couple levels of Abstraction. The first level is creating the die, next is rolling the die, and using the random module to pick the number 1 through 6. It’s a hierarchy of work each step adding to the next.