Okay welcome to the first of several videos that we'll have for this course. We're just going to go through each of the lessons and fill in the guided notes and go through some examples that we have that will mirror what you will see in the problems that you need to complete. So let's go ahead and get started. [So, first, sorry, this is maybe a little bit clunky-that was not my intent.] But I think it's important to go ahead and still get those done.

So we'll go ahead and get started here. So what I want to do is just start with some examples, more than anything else. That's probably our first step here. So let's start going through just some examples. So-just filling in some blanks.

What we're going to be studying here is statistics. So statistics [probably should have allowed myself some more space there] is just a set of procedures that we're going to use to collect, describe and draw conclusions from information. And one of the things we're going to see as we move through the semester [Well not semester] through the course. [So used to saying semesters-so pardon me on that] is this concept of the class of statistics. And then we're going to define a statistic in a sense of the course itself. So what is a statistic on its own? We'll get that you can probably see that down there a little bit in the notes.

So the first thing we want to do is we want to talk about what is called the population. So population is just a group of individuals that we want to learn something about. So it's going to be a larger group of interest. Now the issue with a population is that it's generally going to be a-a large group. It's going to be something that is going to be an expansive number of individuals or products or items or whatever we're studying.

So, for example let's suppose I wanted to know what percent of Columbus State students use an iOS device- so an iPhone and iPad something along those lines. In this case, a population might be all Columbus State students so I'll write all CSCC students. Now the issue is if I want to know what percent use an iOS device there's one clear way I could go about doing this and I could go to every single Columbus State student that is around. And if I do that I can ask them if they use an iOS device.

Now the problem with that is there are a lot of students at Columbus State. There's north of 25 thousand and there are different, what we call it modality. So there are students that come and sit in and take classes in a traditional way. Come to class go to lecture and recitation and work on the problems. We also offer Web classes-so distance learning classes as well as what's called a blended class which is kind of a mix between the two. And so that coupled with the different campuses for Columbus State makes it very difficult for me to go around and ask everybody what sort of phone they use. So it's generally not possible for me to ask an entire population what they use--in this case all CSCC students. So that's just not really going to be in the cards.

So what we're going to do is, rather than looking at the population, we're going to look at what's called a sample. A sample is just a subset of the population. And then that consists of the individuals that are actually observed. So for example, I may take a sample of 100 Columbus State students. And there are various methods that we could go about actually that obtaining this group of 100 students. And let's not worry about that for right now. But the fact the matter is, it's going to be much easier for me to ask these 100 students which kind of phone they use as opposed to all Columbus State students. It's much more practical. Now here's the thing that we want to be sure of-and this is the quick notes. We want to make sure that these represents the population. So I want to pick the students in a way that this group of 100 is representative of the population. I want the sample to be representative of the population. And there are various methods as I mentioned for doing that. And we're not going to worry too much about it right now. So it's not going to really be that important. But at the end of the day that's kind of the goal. And so what do we get from that?

Well, this is where statistics and parameters actually come in. So a statistic is just the number that describes the sample. Statistics is just something that describes the sample. And then a parameter is the number that describes the population. So what I might have in the case I mentioned before- I might want to know the percent of all CSCC students. I'll just say for simplicity, that use an iPhone. So that I want to just point out that in order to know this I would have to sample the entire population. I would have to take everybody.

Now the-the issue with that as I mentioned before it's generally not possible. So something to just point out here is that this is generally going to be unknown. That's okay. I can still describe what I want to do. What I want to-what we're going to call estimate-that this will come much later. So actually come in the next course. But that's kind of the idea.

So the statistic in this case would be the percent of the-of the 100 sampled students that use [using] an iPhone. So this is something we can calculate that. That's kind of the idea here-is we can calculate this pretty easily, right. I could take these 100 students, ask how many of them use an iPhone, take that number divided by a 100-boom-there we go. So it will be that upper portion but we'll get to that later. So that kind of the idea.

So let's take a look at an example here real quick and see if we can't differentiate a parameter and a statistic. So let's start with part A here. And the—the statement is that 57% of the teachers at Central High School are female. And the question is, is this a parameter or statistic? There's actually a key word that we want to look for here. And that is going to be a sample. So do we take a sample of something or are we implying that the entire population is being considered. So in this case I would actually say that this is what we would call a parameter. And the thing to kind of keep in mind is that we imply from the- from the- statement that the population. In this case the group we want to learn something about is all teachers at Central High School. And so because we didn't talk about a sample we're looking at 57% of the teachers that are female. That is the parameter- describing all of the teachers at this high school.

Now we see a little difference here in part B where we see that we have a sample of 100 surgery patients. They were given a new pain reliever at 78% of those reported that they had a significant amount of pain relief. So just real quick, we note the 70% is in reference to the sampled 100. So we would consider this a statistic and the reason is because we have the sample here. It's describing the sample. {Sorry my writing is a little bit messy here, but you get the idea.] So this is a good starting point, and we're going to go ahead and continue with Lesson A in the next video