**Logical operators**

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- [Instructor] Conditional statements like this if, else statements rely on logical operators. We briefly talked about these earlier and now we can see them in action. A conditional statement is looking for a condition to either be met or not met, meaning we can use any expression that returns either true or false as the condition. In this example, I'm using the backpack age method which returns the number of days since the backpack was originally acquired and then I'm asking if the everyday backpack age is larger than or equal to 30, then we return backpack is used, otherwise we return backpack is new meaning the backpack is really under 30 days old. This is a good example of how conditional statements work. I can now change those to say, backpack age must be less than or equal to 30. Then of course I would have to change the logic here to say backpack is new at the top and then backpack is old at the bottom. If I want to test to see if backpack age is not equal to a specific number, I can just put a bang in front, say not equal to or not absolute equal to and then we will only return true if we get any value outside of 30 but if we get 30 then we'll have that set to true. Now, in addition to these comparison operators, we also have logical operators that allow us to make more complex statements. In specifics, we have And and Or. So let's say I want to test to see both whether the backpack, it has a certain volume and how many pockets it has. So if it has a large volume and a lot of pockets, then I say, it's a big pack. If it has a small volume and just a couple of pockets, then it's a small pack. In that case, I need to create an And statement. So I'll say, everyday pack and then we're looking for volume first. So I'll say floor volume is larger than let's say 15 liters and so two on percents, everyday pack again and this time we're looking for the pockets. And I say, if the pockets are larger than or equal to five. So now we're testing for both of these conditions and only if both of these conditions are met do we say backpack is big. Otherwise backpack is small. Save that and over here it says backpack is big because the volume is 30 and the number of pockets is 15. We can then test to see. So if we say volume needs to be 35 for the backpack to be big, save and then we'll say backpack is small because one of these two things do not meet. When we're using the And statements, both of these two conditions need to be met for the entire expression to return true. We also have the Or statement. It's signified with two pipes like this. Now we're saying if either the first statement or the second statement or both are true, then we return true, otherwise we return false. Now you may have noticed this does not test for either A or B, but not both. We don't actually have an expression for that. We'd have to combine some different expressions to make that work, but the logical operator Or will test for either condition A or condition B or both. So between the standard comparison operators and these two And and Or, you're able to string together whatever kind of logical expression you want to test for whatever condition you want.