Here, let's look at a hypothetical example of someone taking the exam, just to illustrate how all this work. So here you see the x-axis, the horizontal axis, that represents the order of the items. So we have the 1st item to the 15th item, and then the y-axis here is the difficulty of the item. So for the first item that was administered to this particular person, it's a little bit under the passing standard.

The red line is how much you need to have to pass. Person answers this item, she got it correct. From that, we got an ability estimate, and the line going through the ability estimate is our 95% confidence interval. What it means is that, at this point, we are 95% certain that the person's true ability estimate is somewhere in that range.

And from this ability estimate, we get a little bit information about this candidate, and then we use that information to select our next item. Person answered the next item correctly. From that we got a new ability estimate. We administered the third item.

She got it wrong. So then the subsequent ability estimate's a bit lower. Next item, she got it wrong again. New ability estimate is lower than the one before. Next item, so on and so forth. So for every answer that a candidate gives on an exam, we use that information to estimate that person's ability.

Another thing that I would like to point out is that you see these, 95% confidence interval. As the test progresses and we get more information about this person, this 95% confidence interval will get narrower and narrower.

We get our estimates getting more and more precise. So you'll see later, by the time we administer the whole test, the error is very small.