Hello, I'm Kate Fraser from Perkins School for the Blind and today we're talking about measuring liquids during science lab for a student who is totally blind. We have here some adapted beakers, some measuring spoons, some syringes, and a graduated cylinder.

We're going to begin by talking about measuring using measuring spoons.

If you take a regular measuring spoon that's needed for your particular experiment and bend the measuring spoon to form a bit of an angle, a right angle, then it can be used like a ladle and you just instruct the student to come straight down on top of the liquid until it's underwater.

Perhaps have the student go all the way to the bottom, come up, come over, and add it.

Now let's talk about these syringes. We have here a preset syringe for 100 milliliters, and you'll notice that if you pull it, it doesn't come out.

We have here a syringe that is not preset and you'll notice that it comes out. Students love to do that because it makes a great sound.

Let's say we wanted to add 100 milliliters of liquid to this experiment.

We make sure the syringe is in all the way, insert it, pull until it stops, transfer it, and empty.

Now some syringes, as you saw, are not preset, but many of them come with notches and you can select, with a sighted assistant, the correct level for that particular one.

For example, this is 35 milliliters and the student can feel when the notch is at the correct level and adjust it as needed in the liquid.

Some come without notches. So, it's maybe difficult to see, but this has a very slight notch here, so in using the syringe, the student can adjust it and it will come to the measurement desired by the student, and you can do that for very precise small amounts of liquid.

So this works quite well. Graduated cylinders; very popular in science labs. For a totally blind student, your typical graduated cylinder will need to be adapted.

We've adapted this with a plunger. This one has notches at increments of 5.

We've added a Wikki Stick. In this case, we'd like to measure 50 milliliters of a liquid and when done correctly, 50 milliliters will correspond with the bottom of the plunger, but with the Wikki Stick that's been added to give a little additional tactile feedback.

So in this case, you pour, let the plunger go in, you pour very slowly, checking as you pour, letting it adjust, letting it come up, and you feel the Wikki Stick.

Remove that. It should be fairly close to 50 milliliters, then it can be added to your experiment.

Now let's take a look at these. The notches correspond with the measurement that's indicated on the side of the beaker. In this case, this is a beaker that's used to measure 125 milliliters.

So, placing the beaker on a tin plate. The tin plates that you get with pies work well. Pour slowly, the sound changes as the liquid goes up, and a student with really good hearing can hear when it goes over the edge.

For other students, they may need, for nontoxic liquid, put their finger here to feel when it starts to go through the hole, and for other students, they may put their hand down here and feel when the puddle starts here.

No matter what, it won't go to any greater amount than 125 milliliters, and you transfer it to your experiment.

And that's our teachable moment for today about measuring liquids for students who are blind in the science classroom.