

**SPEAKER 1:** So we're talking with Abigail who's four years old. And Abigail, I have two glasses on the table. And so, I know you are very careful.

I want you to take a good, careful look and tell me, does this glass have more blue liquid in it? Does this glass have more blue liquid in it? Or do you think they're exactly the same? So take a good, careful look. Does this have more? Does this have more? Or are they the same?

**ABIGAIL:** I think this one has more blue.

**SPEAKER 1:** It has more? Well, let's see if we can do something about it. I can put some more in this glass until we make it exactly the same. So I'm going to pour very slowly, and you tell me when to stop.

**ABIGAIL:** OK, that's enough.

**SPEAKER 1:** OK. Did I get it right?

**ABIGAIL:** Yeah. I think it must be this half and this half.

**SPEAKER 1:** OK. Are they the same?

**ABIGAIL:** Yeah, I think they're the same.

**SPEAKER 1:** OK. Good. That's what I wanted. Now watch what I'm going to do. OK. All right.

**ABIGAIL:** What is that for?

**SPEAKER 1:** Well, it's a glass.

**ABIGAIL:** For what?

**SPEAKER 1:** A glass of blue liquid.

**ABIGAIL:** Liquid?

**SPEAKER 1:** Yeah. Not good for drinking, just for looking at. Liquid is like water. But it's blue.

Now, I want you to look at this, and tell me, does this have more water in it? Does this have more water in it? Or are they the same?

**ABIGAIL:** I think this one has more filled up. Because this one is more taller than this one. This one has more.

**SPEAKER 1:** OK, so this one is taller, so it has more.

**ABIGAIL:** Yeah.

**SPEAKER 1:** OK.

**SPEAKER 1:** Well, we're here talking with Maile this afternoon. Maile's seven years old and we're going to take a look at these two containers. And I asked Maile to tell me if this has more liquid, this has more liquid, or whether they're both the same. And that's good and careful. Take a good careful look at it.

**MAILE:** I think this one's more.

**SPEAKER 1:** It has more? Do we need some more in here then? That would be easy to do.

**ABIGAIL:** Just a little, teensy bit.

**SPEAKER 1:** All right, I'll try to do it very slow and you can tell me when to stop.

**ABIGAIL:** OK, stop.

**SPEAKER 1:** Now we have it as even as we can possibly make it? OK. Now watch what I do.

Now, does this have more liquid? Does this have more liquid? Or are they both the same?

**ABIGAIL:** This one has more liquid.

**SPEAKER 1:** OK. And tell me why you think that.

**ABIGAIL:** Because this one is bigger than this one and this one has more.

**SPEAKER 1:** Oh, OK. Good. That makes sense to me. OK. Thank you.

**SPEAKER 1:** Well, hi, Kayla.

**KAYLA:** Hi.

**SPEAKER 1:** Thank you for coming today. Would you please tell me how old you are?

**KAYLA:** I'm eight years old.

**SPEAKER 1:** Eight years old. Wonderful. Well, thank you for being here. And we're going to do some things together and I hope they kind of feel like fun. They're not meant to be hard and they're not meant to be a test. They're just things we can do together.

Look what I've done. I put liquid into those two glasses. Would you take a good, careful look at them, and tell me, does this have more liquid? Does this have more liquid? Or do you think they're both the same?

**KAYLA:** I think this one has more.

**SPEAKER 1:** This one has more? Well, I could add a little more here. I want them to be exactly even, OK? So you tell me if this does it. Is that enough to make them even?

**KAYLA:** Yes.

**SPEAKER 1:** OK. So does this one have more? Does this one have more? Or are they the same?

**KAYLA:** They are the same.

**SPEAKER 1:** Good job. Now watch what I do. OK. Take a careful look at that. Does this glass have more? Does this glass have more? Or do you think they're both the same?

**KAYLA:** I think they're both the same.

**SPEAKER 1:** OK. Tell me why.

**KAYLA:** Because, well, since it already was in that cup and then you just transferred into that

cup, I think there are still the same no matter what.

**SPEAKER 1:** That makes sense to me. I think that's a very good answer.

**SPEAKER 1:** Do you ever play with clay?

**ABIGAIL:** No.

**SPEAKER 1:** Do you play with Play-Doh?

**ABIGAIL:** Yeah, at my school.

**SPEAKER 1:** At your school. OK. Well this is exactly like Play-Doh. OK. Perfect. All right. So Abigail, please, take a careful look at that and tell me whether this has more Play-doh, this has more Play-doh, or they're both the same. Tell me what you think.

**ABIGAIL:** I think this one has more Play-doh.

**SPEAKER 1:** This one has more? Well, let's try to make them even. I'm going to take some Play-doh and I'm going to put it over there. I'm going to make them nice and round. OK. Did we do that right now? Are they both the same? Does this have more? Does this have more? Or are they the same?

**ABIGAIL:** They're the same now.

**SPEAKER 1:** They're the same. OK. Watch what I do. I'm going to take this and squeeze it. All right. Now, does this have more Play-doh? Does this have more Play-doh? Or are they both the same?

**ABIGAIL:** I think this. Because this one is more longer.

**SPEAKER 1:** It's more longer.

**ABIGAIL:** Yeah.

**SPEAKER 1:** So that would look like it had more. I see. That's a very good answer. Thank you.

**SPEAKER 1:** If we look at those, does this one have more clay? Does this one have more clay?

Or do you think they're both the same?

**MAILE:** I think this one has more clay.

**SPEAKER 1:** Oh. OK. What I can do, is I can take a little clay off of this. I can put it over here. Make it nice and round. Make this one nice and round. You tell me if that's better. Does this have more clay? Does this have more clay, or have we made them just the same?

**MAILE:** I think this one has more clay.

**SPEAKER 1:** Oh, no. I'd better take a little off. Just a little bit, right?

**MAILE:** Mm hm.

**SPEAKER 1:** OK. Put that there. I'll smooth this out. Now what do you think? More clay? More clay? Or the same.

**MAILE:** The same size.

**SPEAKER 1:** Wonderful. Now watch what I do. You've probably done this with clay, haven't you? OK, take a look at this. Does this have more clay? Does this have more clay? Or are they both the same?

**MAILE:** I think this one has more clay.

**SPEAKER 1:** OK. Would you again tell me why do you think that has more clay?

**MAILE:** Because it's bigger and this one's smaller and it has more.

**SPEAKER 1:** That's a good answer. OK. That was good. Thank you.

**MAILE:** You're welcome.

**SPEAKER 1:** So I'm sitting here with Molly. And Molly is nine years old. And one of the things we're going to do is Piaget's test of conservation with a nine-year-old.

So, Molly, if you look at those two balls of clay and take a nice, careful look at them.

Would you say that this one has more clay, this one has more clay, or they're both the same?

**MOLLY:** Probably this one, because it has more colors on it.

**SPEAKER 1:** OK. So you think this has more clay?

**MOLLY:** Yeah.

**SPEAKER 1:** OK. So what I'm going to do is, I'm going to start off with them being exactly the same.

So let me move some over there and smooth this out, and then we'll ask you to take another look. I'll try to get that as round as I can. OK. How about that? Does that look any more even to you now?

**MOLLY:** Yeah. It probably looks equal.

**SPEAKER 1:** It looks equal? OK. Now watch what I'm going to do, OK? I'm going to smush this. I'm going to roll it out like that. And now I'm going to ask you, does this have more clay? Does that have more clay? Or are they both the same?

**MOLLY:** It looks like this one has more clay, but they're probably still the same.

**SPEAKER 1:** Oh, OK. And why would you think they're probably still the same?

**MOLLY:** Probably because you didn't add any from that one to that one.

**SPEAKER 1:** OK. That's a good answer. So I made it look different, but I didn't really add any, right? OK.

If you wanted to show me they were still the same, what would you do you to show me?

**MOLLY:** Probably make this one look equal to that one. Like make this one into a ball.

**SPEAKER 1:** Can you do that?

**MOLLY:** I'll try. Probably like that.

**SPEAKER 1:** I think that that looks exactly right to me. You took it, and you've just pushed it back together into being a ball and now you can see that they're the same. Good. Nice job. Thank you.

**SPEAKER 1:** So I'm sitting here this afternoon with Edward. Edward is nine years old. And we're going to start by doing some conservation. So see what these are? Just two balls of clay. OK.

Now there's two of them. And I tried to get them to be the same, but I'll tell you, you can help me. You can tell me whether you think that there's more clay in this one, more clay in this one, or they're both the same. What would you think?

**EDWARD:** I would think that there is more clay in this one.

**SPEAKER 1:** There's more in this one? Well suppose I take some off of this one, OK? And I'll put it over here. And I'll roll them around to try to make them nice and round. I'll do this one. OK.

Now you can tell me, did we do a better job now? There's some more clay here, more clay here, or are they both the same?

**EDWARD:** They're both the same.

**SPEAKER 1:** Good. OK. And watch what I'm going to do. I'm going to take this clay-- and you've probably done this yourself, haven't you? Now, is there more clay here? Is there more clay here? Or are they both the same?

**EDWARD:** They're both the same.

**SPEAKER 1:** Could you tell me how you know that?

**EDWARD:** I know that because you just made this shape look different--

**SPEAKER 1:** OK.

**EDWARD:** --when they were still both the same. And now they're both the same again because the shape just changed.

**SPEAKER 1:** Just the shaped changed. That's good thinking. What could I do with this one to show me that that's true?

**EDWARD:** You can probably make this just like this.

**SPEAKER 1:** OK.

**EDWARD:** And then you could probably measure it.

**SPEAKER 1:** OK. Did that do it?

**EDWARD:** Yeah.

**SPEAKER 1:** OK. That was a good way to test it and make sure they were the same.

**SPEAKER 1:** OK. I'm here talking with Kayla tonight. You know what these are, right?

**KAYLA:** Mm hm.

**SPEAKER 1:** What have I got? What are these?

**KAYLA:** They're pennies.

**SPEAKER 1:** OK. OK. Now, are there more pennies in this row, more pennies in this row, or are the two rows the same?

**KAYLA:** I think the two rows are the same.

**SPEAKER 1:** OK. Well watch this. Now, are there more pennies in this row? Or are there more pennies in this row or are the two rows the same?

**KAYLA:** The two rows are still the same, because you just switched it up a little bit, but it's still the same.

**SPEAKER 1:** OK. Can you count them and show me that they're the same?



**KAYLA:** That one have five and the other one has five.

**SPEAKER 1:** That's a wonderful answer. Thank you. I think you're exactly right.

**SPEAKER 1:** Now, I have two rows of pennies there. Are there more pennies in this row? More pennies in this row? Or are the two rows the same?

**MOLLY:** They're the same.

**SPEAKER 1:** How do you know they're the same?

**MOLLY:** Because they're paired up.

**SPEAKER 1:** Oh, OK.

**MOLLY:** The rows.

**SPEAKER 1:** So every penny here, there's one row. There's a penny here, and they're paired up. What if I do this. Now, are there more pennies in this row, more pennies in this row, or are they the same?

**MOLLY:** They're still the same, but these ones are more spread out.

**SPEAKER 1:** OK. Could you make them look the same?

**MOLLY:** Sure.

**SPEAKER 1:** That's a fine job. So that's a way of just being sure it's still the same number of pennies. Nicely done. Thank you.

**SPEAKER 1:** Are there more pennies in this row, more pennies in that row, or are they the same?

**JASMINE:** The same.

**SPEAKER 1:** OK. How do you know?

**JASMINE:** Because you can count each pennies in each row and you'll get the same number in each row.

**SPEAKER 1:** OK. Watch this. Now, are there more pennies in this row, more pennies in that row, or are they the same?

**JASMINE:** They are still the same.

**SPEAKER 1:** Oh. How do you know?

**JASMINE:** Because it's the same like the other way, they're just more spread out in this row.

**SPEAKER 1:** Oh. So what could we do to prove that?

**JASMINE:** You can bring them back together like this. And then you'll see that there's the same amount.

**SPEAKER 1:** It's a very good answer. Thank you.