

Transcript for Video Clip 2.3

Teacher/video ID:	Fowler, 2.3_mspcp_gr.2_matter_fowler_L5_c3
Content area:	Properties of matter
STeLLA strategy:	Ask questions to probe student ideas and predictions (STL strategy 2). Ask questions to challenge student thinking (STL strategy 3).
Context:	In this clip, students are discussing what they might learn about changes in matter using a balance scale.

Video Clip 3

Time Code	Speaker	Discussion
00:00:00	T	How do you think we weigh things on this kind of scale?
00:00:05	T	Hmm. Frank.
00:00:08	SN	Uh ... so let's say I had a rock and I had a pebble.
00:00:15	S	If I put the rock here, and then I put the pebble here, the rock would, like, lower it.
00:00:21	T	Ooh. So what would that tell me then? About the rock and the pebble?
00:00:23	SN	It's heavier.
00:00:24	SN	Because the rock would be ... it would, like, weigh more than just the pebble.
00:00:29	T	Oh, so something that's heavier would sink?
00:00:33	S/T	Yeah. / And the thing that's lighter would float ... or go up higher?
00:00:36	SN	What if they're both the same?
00:00:37	T	Ooh, what if they're both the same? What does that look like? I like these questions you guys are coming up with.
00:00:41	SN	I know.
00:00:42	T	Jeremiah, what it would look like?
00:00:43	S	It would look like that—balanced.
00:00:46	T	Can you show me? So I'm going to give you some Snap Cubes.
00:00:51	SN	Snap Cubes.
00:00:53	T	I'm giving you ...
00:00:54	SN	I want some.
00:00:56	T	Hold on. All right. Oops, sorry. Show me what it would look like if it was balanced.
00:01:05	SN	And ...
00:01:10	T	So Jeremiah's trying to demonstrate what our scales should look like if our two different items have the same weight, right? So that's a good question that Jilissa asked.
00:01:23	SN	See?
00:01:26	SN	[Inaudible], Jeremiah.
00:01:28	SN	One side's bigger. These blocks. There.

00:01:34	T	All right. Can you scoot back for us? All right.
00:01:38	T	So Jeremiah's saying that if both items weigh the same—have the same weight—that our scale's going to be kind of flat across, nice and straight and balanced.
00:01:50	T	You guys agree?
00:01:51	SS	Yes.
00:01:52	T	So would ... do you guys think this is true? That two Snap Cubes is the same weight as two different Snap Cubes?
00:01:58	SS	Yes.
00:01:59	T	You would hope so. And I don't even think I told you guys, [but] this is called a <i>balance scale</i> .
00:02:04	SN	A balance scale.
00:02:05	T	Because to figure out the weight, they have to balance. So what we're going to do today is we're going to try to determine if when we change matter, if the two different objects have the same weight.
00:02:19	T	And if they have the same weight, can we kind of determine that they have the same number of atoms and molecules?
00:02:25	SS	Yes.
00:02:26	T	Why do you think so? Why do you think?
00:02:30	SN	Um ...
00:02:31	T	So if we're not destroying and creating, or if we're trying to figure out if we're destroying and creating atoms,
00:02:38	T	so if our two items are different weights, will that let us know if we're destroying and creating?
00:02:43	SN	Yes, but no.
00:02:44	SN	No.
00:02:45	T	Why do you think?
00:02:46	SN	It's because of ... you're ... you're doing the weight.
00:02:52	T	'Cause we're doing the weights? OK, so let me ... let me change the question. If, say, I add a bottle of water in liquid form and a bottle of water in frozen form, and if they, say, mm—
00:03:08	SN	Same size.
00:03:10	T	Well, if, say, the frozen bottle of water is heavier, what would that tell me about the number of atoms?
00:03:16	SN	Tip.
00:03:18	T	What do you think, Kira?
00:03:19	S	Um ... that one side is heavier, and one side is lighter.
00:03:22	T	OK, and what could I say about the number of atoms on the heavier side?
00:03:28	S	It has more weight than the other side.

00:03:31	T	OK, so maybe if it's heavier, there'd be more atoms in it.
00:03:35	SN	Oh, I was going to—
00:03:36	T	So that would be creating more atoms. Or say it was lighter. Could we say that maybe atoms were— What do you think?
00:03:46	T	What do you think?
00:03:47	SN	They are, like—
00:03:48	T	Think.
00:03:49	S	The atoms are smaller than the atoms on the frozen. And the atoms in the liquid water are bigger than the ones on the solid.
00:03:59	T	OK. So maybe the atoms are different sizes? But we talked about maybe creating or destroying atoms when we change the state of matter it's in.
00:04:07	T	So we're going to find out today what happens when we change matter. If anything changes as far as weight, and weight's a really good one to use 'cause we can see it, right?
00:04:17	SN/T	Right. / 'Cause we can't shrink down teeny-tiny like the Magic School Bus and jump inside and figure out what's going on, so we're going to use our scales today.
00:04:24	T	Sound good?
00:04:25	SN	Yeah.
00:04:25	SN/T	Sounds perfect. / All right.