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| **Clip name** | Amy Belcastro, STeLLA2-01-541 Belcastro L2\_C1 |
| **Grade/Content** | WC Lesson 2 |
| **Unit Focus** | The movement of water, in its different phases, provides an example of the conservation of  matter. |
| **Lesson Main Learning Goal** | Water changes state from gas (water vapor) to liquid when energy is lost from the water vapor. This process is called condensation. |
| **Context** | Lesson 2 of 6 in a series about the water cycle. Students have been given two cups of water, one with ice and one room temperature. They observe moisture on the outside of the cup with ice water and share their ideas about where that liquid came from and why or how it got there.  Lesson Focus Question: Can you make water vapor in the air “reappear” as liquid water? If so, how? If not, why not?  Lesson Activity: Students make observations of the two cups of water (one with ice, one without) with class discussion about observations and possible explanations.  Video Clip: In this clip, the teacher is talking with one small group about their observations of “fog” on the outside of the glass with ice in it, and no “fog” on the outside of the glass at room temperature. They share their ideas about why the two cups might be different. |



**KEY**: **T**: Teacher

**SN**: New student talking

**S**: same student continues talking

**SS**: multiple students talking

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| 00:01 | T | 1 | So there was- so the big ideas, whether we're going to think of it as fog or whatever, there was  water on the outside of this glass. |
| 00:08 | SN | 2 | Mm-hm. |
| 00:09 | T | 3 | But not on the outside of this glass. |
| 00:11 | SN | 4 | Yeah, that- |
| 00:11 | SN | 5 | Because that glass isn't cold enough. |
| 00:12 | SN | 6 | There's water on the outside of the glass. |
| 00:13 | T | 7 | Why? |
| 00:14 | SN | 8 | Because there's no ice. |

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| 00:15 | SN | 9 | That one has the ice cubes in it. |
| 00:16 | SN | 10 | The glass with just one. |
| 00:18 | T | 11 | What does the ice have to do with it? |
| 00:19 | SN | 12 | The ice is frozen water. |
| 00:20 | SN | 13 | It's frozen. |
| 00:21 | SN | 14 | It's melting. |
| 00:21 | SN | 15 | It's like (inaudible). |
| 00:23 | SN | 16 | And that's like- ice is steam or- |
| 00:26 | SN | 17 | It's like- |
| 00:26 | SN | 18 | It's not steam, but it's, like- |
| 00:28 | SN | 19 | It's like- |
| 00:29 | SN | 20 | when the- |
| 00:30 | SN | 21 | The freeze. Free. |
| 00:33 | SN | 22 | Frozen. |
| 00:35 | T | 23 | So there's ice, but ice is solid water. You're telling me there's liquid water on the outside. |
| 00:42 | SN | 24 | Yeah, because the- |
| 00:43 | T | 25 | How would the ice make that happen? |
| 00:44 | SN | 26 | 'Cause the solid ice is melting. |
| 00:45 | SN | 27 | Well, it's cold enough to put- |
| 00:46 | SN | 28 | And it's really cold, so you know how, like- you know how you get your hand wet usually and you, like, touch something really cold, that's sort of usually what it is. Like- like this. |
| 00:57 | T | 29 | But the ice is on the inside of the glass. |
| 01:00 | SN | 30 | I know it's- |
| 01:00 | T | 31 | And the water's on the outside. |
| 01:02 | SN | 32 | 'Cause it's so cold that it just, like, (stir up?). |
| 01:04 | SN | 33 | If the soda's cold enough, there's the same kind of fog on the side. |
| 01:09 | T | 34 | Has anybody else noticed what Alyssa said, that happens with soda can too, maybe in the summertime? |
| 01:13 | SS | 35 | Yeah. |
| 01:13 | T | 36 | If the soda's really cold, it happens on the outside. |
| 01:15 | SN | 37 | Oh, I know what, I know what. Because the room- |
| 01:19 | SN | 38 | If it evaporates. |
| 01:19 | SN | 39 | is- the room outside, like, surrounding it is warmer than the cup making it- what's the word? |

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| 01:30 | T | 40 | Evaporate? |
| 01:31 | SN | 41 | Not evaporate per se, but- it just makes, like, kind of a reaction between the ice and the air, so it makes it kind of have that effect with the water. |
| 01:44 | S | 42 | I think, anyway. I'm not sure. |
| 01:47 | T | 43 | So we have this idea of the ice- |
| 01:48 | SN | 44 | Oh, there's fog. Oh, maybe that's why this doesn't have water on the outside, 'cause it's room temperature. |
| 01:52 | SN | 45 | Oh, it's wet, it's wet. |
| 01:53 | SN | 46 | Oh, yeah, 'cause it's- even without the ice, it's still room- that is probably room temperature 'cause it's adapted to the temperature when it was sitting. |
| 02:03 | SN | 47 | Mm-hm. |
| 02:03 | T | 48 | So the reason there's water on the outside, it has something to do with that ice making it colder. |
| 02:07 | SN | 49 | Vapor. |
| 02:08 | T | 50 | What about vapor? |
| 02:10 | S | 51 | (Inaudible). |
| 02:14 | T | 52 | Well, Gunnar's putting an important vocabulary word out there, what could water vapor have to do with it? I'll give you this clue. |
| 02:20 | T | 53 | Water vapor is an important part of the solution of this question, okay? |
| 02:23 | S | 54 | Okay. |
| 02:24 | T | 55 | So I want you to think about- now there's- |
| 02:25 | SN | 56 | So it's water va- vapor and not fog? |
| 02:28 | T | 57 | Well, there's water vapor around this glass and around this glass. But for some reason, we're only seeing liquid water, not water vapor, 'cause we can see it, right? |
| 02:39 | T | 58 | There's liquid water on the outside of this one, and vapor plays a really important role. |