

## AmbitiousScienceTeaching | Structured Talk PDSA

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**SPEAKER:** The stuff that's highlighted yet, specifically the first objective I think we need a little bit more work with. And that's what your entry task is going to be asking you to think about. So even if you're not done with your objectives yet, I'd like you to go ahead and pause. And I want you to take a look and then turn and talk question and entry task.

So you've seen this equation before. Yes?

**AUDIENCE:** Yes.

**SPEAKER:** Yes. OK, I'd like you to think about the atoms in that reaction. What specifically is happening to those atoms? And think about what you did with the model kits and all that kind of stuff. And I'd like you to turn and talk with your partner about it. And I'd like even partners to go first. And then I'm going to call on a couple of odd partners. There we go. I'll call on a couple of odd partners to share out, and then if needed depending on how we build up our answer to this one, we might have a second turn and talk question.

So let's go ahead and do your turn and talk now, and then you can finish with your objectives a little bit later.

[SIDE CONVERSATION]

**AUDIENCE:** The molecule, the H<sub>2</sub>O in order to happen, I think what happens is that the atoms of the same kind you just add the numbers and becoming another kind of molecule. For example--

[INTERPOSING VOICES]

Three different kind of atoms. In this example, you have hydrogen, oxygen, and carbon. This means that the oxygen is becoming with the oxygen to form new bonds. That means that, for example, if you have H<sub>2</sub>O and carbon, that's CO<sub>2</sub> that's becoming in H<sub>2</sub>CO<sub>3</sub>. That means that the atoms of the same type just add to the other in the different, kind just have to add to the molecule.

[SIDE CONVERSATION]

**AUDIENCE:** I agree because the atoms splits up creating new bonds and making the H<sub>2</sub>CO<sub>3</sub>.

**SPEAKER:** And then there is something new I want to try out today. So you guys have been doing the turn and talks, even partners first, and odd partner has what you heard them say, and agree and add on, or disagree and add on. I'd like to think about now when we do share-outs, how we respond to each other in share-outs.

Because you guys are really good about responding to each other in the individual partner work. But I want to make sure that we're actually listening to everything that's happening in the share-out as well. And so what I'd like you to think about is I'm going to have one group share first. And I want you to be thinking about what you can add on to their idea, just like what you do with the partner now.

So based on what you and your table partner talked about, what can you either agree and add on to the person who shared before you, or somebody who shared two people before you, or whatever, or how can you disagree with their idea respectfully and add on your thinking to it. So I've got a couple of sentence stems up there. You're welcome to say it in another way. But I want you to think about what did you hear the person before you saying, and how can you build on it to make sure to share what you heard them say, and then how you're going to build on it.

I'd like everybody to read the two quoted sentences stems up here. We have the same ideas as-- and then who whoever shared their idea, when they said and what they said. And we also said, so this is where you're adding on. So adding on reasoning to what they said. Or we thought blank instead of, and then whatever somebody else said, because that sentence seems a little bit wrong. It should say instead of blank.

And so do I have a volunteer odd partner that would like to go first, so we can have something to build on? Chris?

**AUDIENCE:** [INAUDIBLE]

**SPEAKER:** OK so by atoms, or sorry, so the atoms are bonded. And [INAUDIBLE] you agreed with the book?

**AUDIENCE:** [INAUDIBLE]

**SPEAKER:** Because this is the first time we've done this, I'd like everybody to take a look at this idea. And I'd like you to think about what you and your partner said, and would you agree with this and add on, or would you say what you thought differently and add on something new to this? Just a minute to think about that.

[SIDE CONVERSATION]

OK. And let's see, how about Jack? Can you tell me what you and your partner would think about what this group said?

**AUDIENCE:** Like add on to it?

**SPEAKER:** Yeah. So use one of those two sentence stems up there. So did you have the same ideas as Chris and Cresseda when they said this?

**AUDIENCE:** We had the same ideas as

**SPEAKER:** Chris and Cresseda.

**AUDIENCE:** Chris and Cresseda when they said that the atoms bonded when they collided with each.

**SPEAKER:** OK.

**AUDIENCE:** But we also said that they formed a new molecule which was  $H_2CO_3$  because the atoms broke their bonds between the previous bonds.

**SPEAKER:** OK. And so this is Chris and Cresseda. And this is Jack and Esteban. And how about Victor? I'd like you to take a look at these two. And I'd like you to say which one you guys maybe talk about either in the same way or in a different way, and try to use one of those sentences to help you build on one of these two or both. So either I agree with Chris and Cresseda or I agree with and Esteban when they said whatever they said. Or we thought something else, instead of one of these two things, because-- I'll give you a second to think while I finish writing.

[SIDE CONVERSATION]

You said like in the old [INAUDIBLE]?

[SIDE CONVERSATION]

**AUDIENCE:** So we had the same idea as the Jack and Esteban.

**SPEAKER:** OK. When they said what?

**AUDIENCE:** When they said they form a new molecule  $H_2CO_3$  because-- and we also said that when they come together they break apart and create new bonds, that's how they make up a new molecule.

**SPEAKER:** OK. So you said, similar but in a different way, so you said when they come together they break up. And the they here is that do you mean the atoms, the bonds, the molecules? What's breaking up?

You said bonds?

**AUDIENCE:** Bonds.

**SPEAKER:** Both.

**AUDIENCE:** Both molecule and the bond because for creating space for the new atoms that is going to be in the molecule, they have to, for example, in  $CO_2$  they have a double bond in each atom. That means that they have to separate one bond of each atom, so the other atom of O that is oxygen of the  $H_2O$ , had to combine it. And this means that they had to create a new space.

**SPEAKER:** OK. And let's just try one more. So this is Victor and Miguel. Would somebody like to volunteer [INAUDIBLE]?

**AUDIENCE:** Ethan and I also shared ideas with Chris and Cressida where the atoms are bonding because they collide with each other. And we also said that the atoms from each molecule they break certain bonds and latch onto each other.

**SPEAKER:** OK and does that idea build on a previous one or are you agreeing with what somebody else had said?

**AUDIENCE:** I think we're building on the colliding.

**SPEAKER:** OK. So can you say it one more time like you're adding on?

**AUDIENCE:** That because when the bonds are broken, the atoms latch onto certain other ones with the open bonds. Potential bonds? Potential bonds.