

12: 6th Science Atoms PreObservation

Speaker 1: Well we just finished studying atoms and the periodic table and the content. The components of atoms; protons, neutrons, and electrons. We've drawn models so I thought that this would be a fun way for the students to create their own 3D-type models, hands-on way, working in groups, completing the lesson, trying to say what the properties of the element are, and seeing what an actual model of that atom looks like.

My goal is for the students to be able to accurately create a model of an actual element on the periodic table and then be able to identify properties just by looking at the periodic table. It actually covers two content standards for science which is describing matter using the atomic model and to describe the organization of the periodic table and they're going to be creating the actual models.

The students are going to be working in groups and I'm going to be walking around making sure they're working together cooperatively. The groups are small enough that everybody will be able to have a job and no one should just be sitting there doing nothing. I do need to monitor and make sure that they're creating [00:02:00] the right amount of protons, neutrons, and electrons for their models and placing them in the right locations and I'll be asking them questions- higher level, order, thinking questions - to see if they understand why they're doing... They're just throwing atoms particles on top of their model or if they actually know why they're doing that.

Well I think monitoring student behavior starts with me. I'm planning to have all the materials set up when they come in so if I'm organized and I know what's going on right from the beginning, it sets the tone for the whole class so if the kids don't have to walk around and go gather materials, I have all the materials ready at their stations so the students are going to be moving around into their groups to work at their stations so it starts with me having everything ready for them and then it's just a matter of me walking around, being seen, making sure that they know I'm there and I'm going to be monitoring what they actually put onto their models and then we'll have discussion with it. And I like when they ask each other questions, not just me asking the questions like are... One of our main focuses is to ask well why? Prove it. Why do you think it's like that? That's what I want this, that's what I'm going to be looking for with the students.

The main idea is that atoms, or elements are made up of atoms and those atoms are made up of protons, neutrons, and electrons. I want them to be able to understand that concept and that all protons are the same [00:04:00] size so when they make their models, all their protons should be the same size. Not some are really ginormous and some are really teeny-tiny and just the concept that the components themselves have different sizes and masses so that they can show that within their models. Another concept is that everything in our world is made up of those elements on the periodic table. Those elements in some sort of combination will make up everything in our universe.

Well the students aren't just going to be listening to me talk which sometimes can be very entertaining, however, today what they're going to be doing is working together in groups and they get to actually make the models themselves. They're not just drawing it on paper. They're going to be touching it and making it, creating themselves, hands-on lessons and they can communicate with each other as opposed to just answering questions from me and they can work together to get the job done.

Just being able to have a model of an atom, I think, is a valuable tool because can't actually see what they look like because they're so tiny. For them to be able to create a model that they can see how it relates to another model and then realize oh well as the atomic mass gets bigger, the atom is getting bigger because I have more room. It takes up more room. It takes up more space. Just to realize that those atoms, those elements, are what make up everything that we do is a valuable tool. We just finished studying physical and chemical changes and the students, they know that [00:06:00] it changes into something else but to realize that the electrons inside of the atom are what make the one compound change to another compound, I think is valuable. They can kind of see a connection to something that we just learned. It's funny when you talk to them and you explain about the electron and what it did, they just go oh. They have this big realization. That's why it did that! But it's such at a small cellular level. They never see it actually happen.