SETTING THE STAGE FOR LEARNING

Culture

My own teaching reflections are based on my experiences starting the school year with a brand new audience of middle school students, as well as observations of others' secondary grade classes in mid-year. This reflection is crucial to improving techniques to create a safe place for students to be risk-takers and independent thinkers, wherever we are in the school year and as education professionals.

Areas of Strength

Some of the observed teachers' reflections of their responses to students' failures, and how to foster encouragement in students to work through failures, was specific to using collaborative group work and whole group practice. These are positive behavioral supports.

In an effort to start the school year with 6th grade Investigations in Science off well, I established as many supports as I could to create positive exchanges using sentence stems, procedures that complemented the rest of the team's veteran approaches, and a clean physical environment in which to conduct science. When in doubt, make the room, and the look on your face, a place students WANT to come to every day. Also, I'm calling every parent individually to express my commitment to their child's success and inquire on individual needs.

Areas of Growth

Even if something seems organized, there is no such thing as too much organization. Organizing the physical space so it is centered around students learning science and engineering is key. Students need access to materials, which can be scaffolded over time.

Next Steps

In my observations of my own and others' teaching, I found it is easy to make mistakes, such as allowing classroom disruptions to interrupt instruction, not giving complete instructions, and finally, not being consistently firm, fair AND consistent with each and every group of individuals. Planned ignoring and providing authentic choices are quick ways to avoid these supposed setbacks.

SETTING THE STAGE FOR LEARNING

Cooperative Learning

My own teaching reflections are are based on my experiences starting the school year with a brand new audience of middle school students, and observations of others' include all secondary grades mid-year. This reflection is crucial to improving techniques to create a safe place for students to collaborate and engage in discourse, wherever we are in the school year and as education professionals.

Areas of Strength

I observed teachers who provided open-ended prompts for students to actively engage in discourse, including argumentation. This allowed for increased and richer student-to-student interactions.

In my own teaching experiences in starting off a school year, I've observed that the students are not yet accustomed to sitting in groups via science lab tables and needed time to adjust to this minor distractions. Using equitable and random calling techniques, students have been trained to learn about organization roles in doing investigations in science, including safety and data collection roles. These are called "squad formations" and are akin to sports teamwork to encourage student interdependence and independence.

Areas of Growth

All of the observations, either in others or my own teaching thus far, have not included students taking an active role in their own group's learning. This can be increased with modified jigsaws and other activities that build on independent student contributions.

Next Steps

Using the materials available in my campus, I will demonstrate effective discourse beyond an organizational level so that students are actively engaged in their roles beyond my step-by-step instruction.

SETTING THE STAGE FOR LEARNING

Integrating Technology

My own teaching reflections are are based on my experiences starting the school year with a brand new audience of middle school students, and observations of others' include all secondary grades mid-year. This reflection is crucial to improving techniques to seamlessly integrate technology through science and engineering instruction, wherever we are in the school year and as education professionals.

Areas of Strength

I observed teachers who incorporated live video interviews with museum professionals and assigned student-produced videos on common chemistry applications, like making cake. In both cases, the flow of the lesson is maintained. I've modeled some of this in my own instruction, using video to flip/embed lesson instructions and provide examples/models of complex subatomic particles.

Areas of Growth

In all cases, using technology as modeled by scientists and engineers can be increased. This includes using tools for data collection and measurement, as well as recording technology for investigations. Projection of multimedia is effective and must be well-timed.

Next Steps

Using the materials available in my campus, I will continue to use whole class projection and individual devices for delivery and completion of science assignments, particularly for observing phenomenon that cannot be easily accessed in a middle school lab.

SETTING THE STAGE FOR LEARNING

Real-World Connections

My own teaching reflections are are based on my experiences starting the school year with a brand new audience of middle school students, and observations of others' include all secondary grades mid-year. This reflection is crucial to building frequent and relevant real-world connections to science and engineering, wherever we are in the school year and as education professionals.

Areas of Strength

I observed teachers who acknowledged different spheres of connections, including family members and scientists, like with gemology and nutrition. Using models and density columns in my sixth grades classes, we tied in oceanography and how oceans have layers because of this scientific principle.

Areas of Growth

In the first example above, spheres of connections are well met because students are encouraged to connect with other people in their personal lives, but the kinds of connections are not well met because students are not encouraged to understand the various careers or global impact the reconnection is. In the second example, sphere of connections are not well met because students may not have first-hand knowledge of an ocean but the kinds of connections are well met because they connect the scientific principle to the natural world.

Next Steps

Using a multi-directional approach, I will combine these approaches to connect scientific learning to students' personal lives as well as extend it through a global approach. I already called a NASA scientist to invite them into the classroom to speak with students about air and gaseous solutions, and will ask students to record the air quality from the local news periodically.