

T-TESS Observation Evidence Sheet High School AP Chemistry

Domain: Instruction

Dimension	Evidence	Rating
Achieving Expectations 2.1	<p>The lesson began with an ‘explore’ activity where students were expected to use the syringe and marshmallow to record changes in the shape and size of the marshmallow when placing their finger at the top of the syringe while pulling and pushing the plunger. Students were also asked to make predictions about the marshmallow changes shape.</p> <p>Throughout the lesson, the teacher supported all learners with academic feedback, content clarifications, and with activities where they self-monitored their learning and understanding of the objective. A gradual release was used where the teacher modeled the first problem, worked with the students on the second problem, then had them work in pairs on the remaining problems, before completing the exit ticket independently to connect what was learned to Boyle’s Law. A clear writing connection was also evident, as students were expected to follow the “non-negotiables” with the written response and the writing rubric, including the distinctions between a score of 2 and 3.</p> <p>During the challenge activity, all students solved the problem and students were expected to articulate how they arrived at the solution, first with a partner, then with the class.</p>	Proficient
Content Knowledge and Expertise 2.2	<p>The teacher had a clear understanding of the learning objective and made connections with the content to numerous real-world examples with weather, low/high pressure, diffusion in biology classes, welding/scuba diving, alternative options for solving the problem using what they “learned in mathematics,” and clear alignment to the writing expectations with the rubric and scoring metrics. Learning outcomes, therefore, were tied to other disciplines and real-world experiences that connected learning for students.</p> <p>The lesson began with an “explore” activity using the syringe and marshmallow, and the pressure and volume with this concrete</p>	Accomplished

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	<p>example was threaded throughout the lesson, including the exit ticket, to show the relationship between pressure and volume, as defined through Boyle's Law. Students were expected to use analytical and practical thinking beginning with the explore activity, in solving their problems, the challenge activity, and with synthesis in the exit ticket.</p> <p>During the closure the teacher connected the syringe activity by asking, "How do we relate this (holding the syringe) to Boyle's Law?" "The teacher ended the lesson by communicating the learning outcomes for the following day: "Tomorrow, you guys are going to do work with the simulator...we're going to work with pressure and volume and get some actual numbers, data, graph it out to show the inverse relationship, as well."</p>	
<p>Communication 2.3</p>	<p>Student-to-student communication was evident throughout the lesson, as students worked in pairs to communicate in written and oral formats. The teacher projected notes on the screen to review the five assumptions of an ideal gas and how to measure gas using pressure, temperature, volume, etc. The teacher indicated that the information presented in the notes should be utilized in the writing "to bring in other materials" and "to take their writing from a 2 to a 3." There were multiple opportunities for students to partner talk: "You and your partner take one minute, why does this answer make sense?" and "Read over the definition of Boyle's Law and keep the marshmallow and syringe in mind." (Students worked in pairs to make the connections between the definition and the explore activity with the syringe and marshmallow.) Students were also expected to communicate their responses to probing questions such as, "Who can give me a good mathematical explanation about why this makes sense?"</p> <p>In reviewing the content with students, the teacher presented the information in a clear and logical manner, and made connections to real world examples: 'kids bouncing around' connection to gases; balloon release of air to diffusion; weather and barometric pressure; hurricanes and low pressure; low density and walking in a pool; welding students' use of oxygen fuel as compressed gas in the tank; etc.</p>	<p>Proficient</p>

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	<p>Probing questions were used throughout the lesson to clarify students' understanding and apply learning. For example: "Why does that answer make sense?" "What relationship do we have between pressure and volume, again?"</p>	
<p>Differentiation 2.4</p>	<p>The teacher monitored student participation and performance for all 22 students in the class by circulating throughout the lesson, providing academic feedback when students were confused or shared inaccurate information, and assisted students while monitoring their independent practice. There was no evidence to support that students were confused or disengaged, as all students worked with their partner pairs throughout the duration of the lesson. The teacher worked through the first through problems with the teacher and completed the remaining three problems with their partner.</p> <p>The teacher presented students with a challenge question, as students were completing their problems. Partners were expected to work on the problem together. "That was a challenging one, because there was a lot of material to filter through."</p>	<p>Proficient</p>
<p>Monitor and Adjust 2.5</p>	<p>With this introductory lesson on Boyle's Law, the teacher spent 11 minutes connecting prior learning to ensure that explicit connections were made between the presented notes, their responses to the problems, and the written response for exit ticket.</p> <p>When students struggled with problem number four (4), the teacher reset the classroom to share that "people have the same question on number 4... we talk about standard pressure...Why did you use the 760 ml, why not use the 1 atm.?" (Student provides the rationale.)</p> <p>The teacher used an exit ticket for students to independently "go back to the marshmallow and explain the marshmallow's change in size... in terms of Boyle's Law. You're going to have some academic vocabulary I'd like you to use... your rubric is on the bottom ... remember the difference between a 2 and 3 is how you</p>	<p>Proficient</p>

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	bring in other materials such as what is being asked here on the question.... Get a good writing in and make sure you follow the non-negotiables.”	

Domain: Learning Environment

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Classroom Environment, Routines and Procedures 3.1	While students did not transition or move during the lesson, all materials were available including handouts, calculators, journals, etc., and students used them with ease. Students transitioned from one activity to the next with single verbal cues from the teacher. It was evident that students were comfortable with partner collaboration, providing responses to questions, and that the learning environment was supportive of students’ learning needs. Clear transitions, routines, and procedures contributed to maximizing instructional time, including the use of time segments which were articulated with students to keep them on task.	Accomplished
Managing Student Behavior 3.2	Desks were organized in pairs, where students were expected to work with a partner with all activities prior to the exit ticket. It was evident that students were used to collaborating with a partner, as there were no distractions or off-task behaviors. At the beginning of each activity, the teacher communicated the expectations for behavior: “As you’re getting seated...,” “I’m going to give you 2 to 3 minutes to do this (looks up at the clock)...,” “As you work with your partner...” “You are to complete your exit ticket independently....,” etc.	Accomplished

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Classroom Culture 3.3	Both teacher and student demeanor was calm and controlled, mutually respectful, and supportive. Students collaborated with their partner in the paired groups and interacted with the teacher in a fluid manner. The teacher used proximity to connect with students, made eye contact, and used an approachable voice to elicit responses and provide feedback to students. Students had multiple opportunities to collaborate though interactions were limited to their assigned partner.	Accomplished