|  |  |
| --- | --- |
| Raksmey Derival | [CHEMICAL BONDING AND ITS APPLICATION IN DEICERS](https://youtu.be/3NC_p76Oguw)  Raksmey Derival  High School Science Educator | Innovation Academy Charter School  Video URL: <https://youtu.be/3NC_p76Oguw> |
| *Prior to this lesson, the students were given an overview of chemical bonds. They demonstrated understanding of ionic and covalent bonds through drawings of electron configuration models and Lewis Dot Structures.*  *This lesson is designed to help students better understand that ionic bonds are not as strong as covalent bonds, a property that is applied in deicer chemicals. We connect the lesson to students’ experiences of living in the Northeast US where icy weather occurs during our winter months. Students may be able to connect their observations of salt and sand trucks on the roads to the reason why salts are commonly used to melt ice. Students also gain a deeper understanding of how water molecules behave when exposed to cold temperatures, and how salts lower the freezing point of water.*  *This work leads up to students’ “Greener Deicers” project, an interdisciplinary hands-on exploration that aims to find a safer chemical to use for melting ice. It includes a 3 week long toxicology experiment to investigate safety, a cost analysis of various salts and common kitchen chemicals, and a deicer performance test to identify greener (more sustainable in safety, cost and performance) alternatives to common salts for deicing,,. This work has led to enhanced awareness and appreciation for how the chemicals we use in seemingly harmless ways can impact the environment we live in, including life on land and life under water. It activates students as environmental stewards who become better informed and responsible consumers.* | |

|  |  |
| --- | --- |
| Learn more about this video and Raksmey’s culturally responsive teaching (CRT) journey: | |
| **What are you proud of and excited to share from this video? Why do you think this is a strong example of culturally responsive teaching?** | *I knew this particular class was a great candidate to showcase Culturally Responsive Teaching. From beginning to end, it felt like students were engaged and empowered. We created space for the following:*   1. *Attendance with personal check-in / greeting for each student (not shown in recording)* 2. *Welcoming vibes with student DJ (playing a song off the class request list on their device)* 3. *Announcements and news* 4. *CommUNITY Building*    * + *Women’s History Month - women who contributed to the discovery of elements*      + *In this class, we discussed the significance of Clarice Phelps, a Black female chemist, and her work towards discovering element 117 Tennessine, as well as the controversy behind why her name was removed and  reinstated.* 5. *Chemical Bonding - how water behaves in cold temperatures and how salts lower the freezing point of water for deicing applications. The shorter video showcases this part of class.*   *Below is a list of ways that the video shows elements of Culturally Responsive Teaching:*   * *Lesson is aligned to common core state standards and includes rigorous tasks that are cognitively demanding* * *The teacher demonstrates depth and breadth of the lesson and is able to contextualize it in students’ identities, experiences, and abilities* * *The content itself is reflective of and affirming to students' identities, and it presents impartial and fact based information* * *The content itself is reflective of and affirming to students' identities, and it presents impartial and fact based information* * *Students have opportunities to demonstrate their learning in a variety of ways* * *Students had or have opportunities to engage in discourse* * *The classroom environment is culturally and socially affirming to students' identities* |
| **What does culturally responsive teaching and/or anti-racist teaching mean to you?** | *To me, Culturally Responsive Teaching is anti-racist teaching. It means putting my students first in any decision made in and about the classroom. It means drawing upon their strengths, insights and expertise to call them forward and call them higher in the classroom to ensure that they not only take ownership of their learning, but that they feel empowered and included along the learning journey too. It means showing them that they are cared for, loved, and supported as developing humans under my care through the lens of science.* |
| **Describe your journey to becoming a more culturally responsive, anti-racist educator. What has helped you grow your CRT practice?** | *The Teacher Collaborative has helped me grow my CRT practice. I was called in higher to do this work upon being selected for the Culturally Responsive Teaching Task Force by The Teacher Collaborative, The Teachers’ Lounge, and the Massachusetts Department of Elementary and Secondary Education. I became familiar with different ways that Culturally Responsive Teaching can look like in the classroom after analyzing and using the CRT Rubric.*  *I also engage with several teacher groups in person and on social media, including the Beyond Benign Social Justice Committee (science and sustainability focused) and the Teachers For Good Trouble (TFGT) national group. I was first introduced to Culturally Responsive Teaching through Beyond Benign when a Black male chemistry educator, Scott Carlson, introduced CRT resources distributed in his district. It was a great learning moment for me to be able to name the practices that were already happening in my classes. Through TFGT, I have attended conferences, PD sessions and book study discussion groups that helped me gain additional insight from other educators on how CRT manifests in their classes. Some powerful conferences include The Revolutionary Educator conference (created by Principal Amen Rahh) and “Stay True to the Teacher in You” conference (created by Kwame Sarfo-Mensah), the latter of which I attended through the sponsorship of The Teacher Collaborative group.* |
| **What advice would you give to another educator who wants to develop their CRT skills?** | * *Do your own research. Learn about your students’ backgrounds, identities, strengths and interests.* * *Implement CRT in small ways at first, such as in stand-alone lessons* * *For Projects Based Learning, screen unit for ways that CRT elements can be embedded* * *Check in with others (have a squad or partner for accountability / celebration)* * *Connect with educators outside of your school* * *Attend conferences/webinar events, and ask questions/network at events* |
| **What are some of the most valuable resources you’ve come across to support your CRT learning journey?** | * Culturally Responsive Teaching Observation Tool by The Teacher Collaborative, The Teachers’ Lounge, and MA DESE * [Cultural Responsiveness Continuum](https://drive.google.com/file/d/1g9NCCs-bqXffoCDs3fHsa7CZKVXKcW2R/view) * Culturally Responsive Teaching and the Brain by Zaretta Hammond * Street Data by Shane Safir and Jamila Dugan * Coaching for Equity by Elena Aguilar * Revolutionary School Culture by Amen Rahh * Grading for Equity by Joe Feldman * Culturally Responsive Standards-Based Teaching |