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Though always central to my classroom instruction, getting kids to think and wonder about science phenomena and engage in the inquiry process as scientists during the remote instruction that COVID necessitated seemed paramount. The four high-yield strategies that work in my practice to engage students in scientific thinking (both remotely and in-person) are 1) modeling scientific thinking, 2) creating wonder, 3) intentionally choosing products that extend learning, and 4) creating delight.

First, model scientific thinking. I am always taking pictures and videos of the world around me. I constantly share my observations and what I’m wondering about with my students. Children are naturally observant and curious beings. When I model noticing and experiencing scientific phenomena, ask questions about what I observe, and then demonstrate work to figure out answers to those questions, I am nurturing and validating the natural curiosity of children. I notebook, create models, and research alongside my students.

Secondly, create wonder. As a teacher, I work to create opportunities and situations for students to engage in thinking and wondering about the world around them. Once we create wonder, we can teach students to no longer be satisfied with just the wonder-- we can push them to crave to know the why and how. By an environment that creates wonder, we can propel students into the work of inquiry and investigation. During remote learning, I took to digital platforms such as YouTube, FlipGrid, and Google Sites to share wonder with my students.

Third, the products that we ask our students to create can engage students in the content we want them to learn. For me, transitioning successfully to remote learning involved thinking about the successful classroom strategies that engage students in content and then determining how to adapt those strategies with digital tools. For my classroom, this often involves integrating art into science-- creating digital animations of change over time in Scratch, using Chrome Canvas to create models and drawings to explain phenomena, creating symphonies of homemade instruments in FlipGrid, making a YouTube montage of chain reaction videos from my students’ homes, among others.

Finally, create delight. In The Artisan Teacher: A Field Guide to Skillful Teaching, Mike Rutherford presents 23 artisan themes. The final theme is Delight. Rutherfold defines delight as “The ability of the teacher to create instances of learning that are extra-memorable by designing a “positive surprise”- something that is exceptionally pleasing and unexpected.” Students connect with their teachers when there is unexpected surprise and delight in both the teaching and learning. In a year full of the unexpected and often disappointing experiences, positive surprises helped bring community to our classroom that transcended the constraints of virtual instruction.