

Shell Urban Award - Grade Band Narrative Examples

Elementary School (K–5)

Teaching elementary science in an urban school has taught me that young students are natural scientists who thrive when learning is rooted in curiosity and hands-on exploration. Many of my students come to school with limited formal science experiences, but they bring rich background knowledge from their families and communities. My role is to help them connect those experiences to scientific ideas in meaningful ways.

In my classroom, I use phenomena-based learning to guide instruction. For example, during a unit on weather, students investigated why some neighborhoods flood more quickly than others after heavy rain. Students collected data using simple tools, observed patterns in water flow on school grounds, and built models of stormwater systems. This experience allowed them to engage in age-appropriate science practices such as observing, predicting, and explaining based on evidence.

I intentionally design instruction that supports multilingual learners and students with diverse learning needs through visuals, sentence frames, collaborative group work, and hands-on materials. Science is integrated with literacy and math to reinforce cross-disciplinary learning.

Through these experiences, I have seen students grow in confidence as they begin to see themselves as scientists who can ask questions, test ideas, and explain the world around them. My instruction aligns with NGSS expectations by engaging students in early science and engineering practices while building foundational understanding of core ideas and crosscutting concepts.

Middle School (6–8)

Teaching science in an urban middle school setting has reinforced my belief that students learn best when they are given meaningful problems to solve and opportunities to engage in authentic scientific thinking. My students bring a wide range of academic backgrounds, and I work to ensure that all learners can access rigorous science through structured inquiry and collaboration.

One of my most successful instructional units focused on water quality in our local community. Students investigated why certain areas experienced higher levels of contamination by collecting simulated water samples, analyzing data trends, and comparing environmental conditions across different locations. They then developed

evidence-based explanations and proposed solutions for improving water quality in their community.

This unit integrated science and engineering practices such as analyzing data, constructing explanations, and engaging in argument from evidence. Students also developed models to represent pollution pathways and used crosscutting concepts like cause and effect and systems thinking to deepen understanding.

I use a variety of instructional strategies, including guided inquiry labs, collaborative discussions, interactive notebooks, and digital simulations. These approaches help support diverse learners, including English language learners and students who need additional academic scaffolding, without reducing cognitive demand.

My instruction is aligned to NGSS or state science standards and emphasizes student ownership of learning. Over time, I have seen students become more confident in their ability to think critically, ask questions, and apply science to issues that affect their lives and communities.

High School (9–12)

My experience teaching high school science in an urban setting has centered on helping students develop the ability to think critically, analyze complex systems, and apply scientific reasoning to real-world challenges. Many of my students are preparing for college, technical careers, or workforce pathways, and I aim to provide them with authentic scientific experiences that build both conceptual understanding and practical skills.

In my environmental science course, students conducted an in-depth investigation of urban heat islands in our city. They collected temperature data from different neighborhoods, analyzed satellite imagery, and examined the impact of land use, infrastructure, and vegetation. Students used this data to construct explanations and propose community-based mitigation strategies such as increasing green spaces or modifying surface materials.

This experience engaged students in all aspects of scientific practice, including data analysis, modeling, argumentation, and communication. Students presented their findings to peers and community stakeholders, strengthening both scientific understanding and communication skills.

I intentionally incorporate differentiated instruction, collaborative research, and real-world problem solving to ensure access for all learners, including multilingual students and those

who require additional academic support. Technology tools and laboratory investigations are used to extend learning and mirror authentic scientific work.

My instruction is aligned to NGSS or state standards and emphasizes three-dimensional learning. Through these experiences, students develop not only scientific knowledge but also confidence in their ability to engage with complex issues that impact their communities and future careers.