

# WHAT DO FOURTH GRADERS LEARN IN STEM?

STEM FLUENCY ♦ CAREER EXPLORATION ♦ ROBOTICS, CODING, & COMPUTATIONAL THINKING

## NISD's STEM Program is Unique



NISD's STEM curriculum is based on the Technology Applications TEKS, Career and Technical Education alignment, Texas Career Clusters, and Texas Education Agency's STEM Fluency Skills and Computational Thinking documents.

## STEM Fluency Skills



You may have heard people talk about the need for employees to have "soft skills" to be successful in a job. The Texas Education Agency provides educators with descriptions of "STEM Fluency Skills" rather than soft skills. STEM Fluency Skills include: Collaboration, Communication, Critical Thinking, Creativity, and Resilience.

They say this about STEM Fluency Skills: "STEM education also includes a fluency in the skills associated with career readiness and workforce development."

## Keyboarding



Fourth grade students continue to practice correct hand and body position when locating keys and use cross-curricular symbols (examples may include \$, %, &) when keyboarding.

## Robotics, Coding, and Computational Thinking



Each year during STEM class, students practice the computation thinking skills to logically solve problems when coding and programming robots. These skills get more complex each year.

## Career Explorations



During Career Explorations units each year students learn about and explore a variety of STEM careers. These careers align with CTE courses in middle and high school.

## App & Game Development



Students work in groups to apply their coding skills and knowledge of the design process to create games or apps. They practice the communication, collaboration, and creative skills needed while better understanding all the elements needed in successful design.

## Manufacturing Design

During the Manufacturing Design unit, students learn about a game-changing innovation in manufacturing design – 3D printing. They learn how real-world products go from an idea to a physical object. Using Computer-Aided Design (CAD) software, students design an item to be 3D printed. They will apply their knowledge of measurement and design along with problem solving skills and critical thinking to make improvements to their prototypes.

## Design Pre-Construction

Drawing reaches a whole-new level when students learn about the technical drawing needed in architecture. Students learn about drawing to scale and use a scale ruler. Students learn about and may try their hand at technical, orthographic, or scale drawings during this unit.

