



## **Magnet Themes K-5**

### **School Theme Descriptions and Capstone Ideas**

*Please see K-5 Accomplishments Chart for Additional Details*

### **Franklin Academy - Medical Sciences and Wellness**

<http://www2.columbuscityschools.org/franklin>

Students will focus on a range of themes related to medical sciences and health and wellness, building a holistic understanding of medicine while integrating interdisciplinary subjects and the state and national curriculum standards. Students will learn about basic anatomy and medicine by building models, playing strategic games, and conducting research projects. After learning about anatomy, students will progress to learning about how the body survives and thrives in its environment, interacting with the world at every level from microbes to trees to a factory on the other side of the world. Hands-on lessons will take place in the Academy's greenhouse at each grade level. Students will learn concepts in social studies, the environment, geography, physical sciences, and more as they discuss global health issues and generate constructive solutions. Throughout the curriculum, interdisciplinary subjects will be taught in "active classes", allowing students to learn about topics like physical forces, energy, and ecosystems while playing a sport or physically active game, tending the greenhouse, or engaging in an active creative project.

#### Sample Lesson Topics:

- How to Power a Machine with Touch: the Body as a Source of Electricity
- Growing Your Own Garden
- Trees and Healthy Cities
- Fun and Fantastical Foods
- The Physics of Sports: Basketball
- Global Health and You
- Where Did Your Dinner Come From?
- The Microbes Living Inside You
- Water, Water, Everywhere!
- Fast Food Laboratory

Capstone Project: Students will collaborate, working in teams. Each team will identify a public health issue, conduct research on that issue, and develop a solution. Each team may develop a creative design, conduct a service project, or invent a technology that addresses the issue. They will document the stages of discussion, research, and implementation, and share their results with the community. The project will culminate in a competition with scores in different categories.



## Fairview Elementary - Aerospace and Science

<http://www2.columbuscityschools.org/fairview/>

Fairview Elementary exposes students to activities that encourage science discovery, problem-solving, and innovative experiences based on the state and national curriculum standards. Rigorous, project-based lessons will introduce students in each grade to an aerospace-related technology while also teaching and reinforcing the scientific method, inquiry and inspiration, critical thinking, and creativity. Students will learn basic concepts in physics, mathematics, and astronomy, and build real-world engineering and creative skills by constructing and using models. Students will also explore scientific concepts in literature, relating real-world physics and more to popular science-fiction.

### Sample Lesson Topics:

- The Earth, You, Me, and the Cat: Carbon-Based Life Forms
- Modeling Your Solar System
- Inventing New Solar Systems
- Milky Way Matters
- The First Machine
- Aerodynamics: the Dinosaurs Invented Flight
- Aerodynamics: Build Your Own Kite
- Biomimicry and Robots
- Sci-Fi Forgot the Microbe: Life on Other Planets
- Following the Mars Rover

Capstone Project: Students will learn about the history and design of Unmanned Aerial Vehicles (drone technologies), as well as their many functions in a wide range of areas such as surveillance, wildlife tracking and research, photography, filmmaking, and therapy. Ultimately, students will learn how to build their own drones, culminating in a drone build-and-fly competition with scores in different categories including technical merit, originality, and aesthetics.



## Cook Elementary - Fine and Performing Arts

<http://www2.columbuscityschools.org/cook/aboutcook.htm>

Students at Cook Elementary learn a range of interdisciplinary subjects and meet state and international standards through the focused study of fine arts, including painting, drama, vocal music, strings, dance, and more. Students will also explore how fine arts integrate with and depend on a range of concepts and techniques utilizing science, technology, engineering, and mathematics, and in turn, how the arts are vital to these fields as well. Through practice and creative exercises in critical thinking, students will learn how fine arts can improve engineering and technology, communicate and interpret scientific concepts, and promote socially and environmentally positive ideas. While exploring their interests in the arts, students will learn how combining art with STEM subjects can empower communities as well as individual voices.

### Sample Lesson Topics:

- Chemistry in Art: Mixing Colors
- Chemistry in Art: Making Your Own Dark Room
- Mathematics in Art: Using Grids
- Mathematics in Art: Fractals
- Biology in Art: Music and Brain Anatomy
- Promoting Green Cars: Fashion Show Autos
- Performing Science: Microscopic Adventures
- Technology in Art: the Origin of the Paint Brush
- Engineering in Art: How the Camera Works
- What Makes a Movie Moving?

Capstone Project: Students will collaborate in teams to make short films. They will begin by exploring the medium of film, learning about the technology and engineering behind the camera, lighting, and sound. They will also learn and apply classic creative techniques used in direction and cinematography. Then team members will use their cumulative talents, ideas, and skills to plan a film, work together to shoot and edit scenes, and produce a final product. The project will culminate in a short film festival and award ceremony in different categories including direction, cinematography, and story.



## **Stokes-Beard Elementary - Technology and Communication**

[http://www2.columbuscityschools.org/stokes/columbuscityschools.org\\_stokes/About\\_Us.html](http://www2.columbuscityschools.org/stokes/columbuscityschools.org_stokes/About_Us.html)

Students at Stokes-Beard have opportunities to communicate and work cooperatively while exploring relevant, real world topics. Technology is used to enhance the curriculum. Students will interact directly with diverse technologies on a regular basis, using them to explore a range of real-world topics in STEM and to meet national and state standards in literature and mathematics. Students will also learn how to develop communication technologies and use them in direct application to STEM topics, as well as global issues and community concerns.

### Sample Lesson Topics:

- Shapes and Colors in Technologies We Love
- Trebuchet Physics
- Technologies in the Field: Water Quality Testing
- The Social World of Mobile Phones
- Languages: Coding Android and iOS Devices
- Improving Access: Ability and Technology
- Video Games: Hour of Code
- Video Games: Role Playing and Character Development
- Literature in Technology: Telling Stories
- Mind Over Matter: the Future of Computing

Capstone Project: Students will work collaboratively to create a final project, such as a website, computer program, or mobile app that addresses a community need. They may also choose to create an educational game that promotes social or environmental awareness. They will document the stages of discussion, research, and implementation, and share their results with the community. The project will culminate in a competition with scores in different categories including technical merit, originality, and social relevance.



## **Sale Elementary - International Studies (Language, Politics, and International Affairs)**

<http://www2.columbuscityschools.org/sale/>

Sale Elementary seeks to produce young globally-minded citizens through inquiry-based education that meets state and national standards. Pursuing a range of interdisciplinary topics, students will explore specific contextualized languages, regions, historical events, and global issues; explore STEM topics from international and cross-cultural perspectives; and gain exposure to international music, art, and literature. Through inspired learning, integrated subjects, and rigorous research methods, students will use topics to explore how various subjects are interrelated. Finally, they will apply their cumulative knowledge and skills to engage in their own research projects and peer-reviewed presentations.

### Sample Lesson Topics:

- Tracing Human History Through Languages
- Music Instruments Around the World
- The World's Biggest Forests and You
- The Panda: Its History, Present, and Future
- Volcanoes and Earthquakes and More: Natural Disasters
- Conflict Resolution in Everyday Life
- Peace in a Dozen Languages
- What's in a Century
- World Numbers
- Research Question Lottery Game

Capstone Project: Students will identify a critical global issue, conduct quantitative and qualitative research, analyze results, generate potential solutions, and design a poster presentation and talk. They will then represent their poster in an exhibit, engage in a peer review process, and compete for scores in categories including methodology, presentation, and relevance. Examples of critical global issues include climate change and community resilience; geographic conflicts and approaches to resolutions; disease and approaches to treatment; and ethical international business models.

### 6th Grade Elective (Combined STEM)

Lessons building on materials taught in K-5.