

## **TECH SAVVY WORKSHOPS FOR GIRLS**

### **Aquaponics: The Magic of Aquaponics (Whispering Roots)**

Aquaponics is a means of producing food and saving water by raising fish together with plants in closed recirculating systems. Girls will learn basic aquaponics principles, techniques, and system design methods as they prepare to build their own mini aquaponics system. Learn how STEM can be used to grow fish, great tasting food and minds!

### **Breaking Bones**

Bones are designed to heal themselves, however they need our help. Girls will learn how bones heal and the various devices biomedical engineers have developed to help them. The girls will experience being a biomedical engineer by using the engineering design process and test devices capable of stabilizing broken chicken bones.

### **Build a Chair – Engineering Everyday Materials into Real-World Solutions**

Girls will be able to design a chair to hold at least one member's body weight with only newspaper and tape using the Engineering Design Process.

### **Clothes that Light Up – E-Textiles**

Girls will use their creativity and design ideas to create a card that lights up using an LED, copper tape, and a battery. This workshop is an introduction to the world of e-textiles. Electronic components are connected using conductive thread to make components light, vibrate, play music or detect the environment around them.

### **College Savvy**

Girls will have a fun opportunity to “visit” and “interview with local college/university representatives. They will complete a college application, identify their strengths, and explore STEM educational and career options.

### **DNA: The Blueprint for Life**

Girls will discuss what DNA is, why it is important and how medical research is using DNA to understand diseases such as cancer. In addition, the girls will participate in a hands-on activity in which they will extract DNA from the cells of strawberries.

### **Forensic Science Black Box**

Girls will have the opportunity to identify, collect, and process multiple types of evidence from a mock crime scene. They will work in teams to process evidence including bloodstain patterns, fingerprints, DNA, insects, and ink chromatography.

### **Robotics Style – Conveying Messages**

Working in teams, the girls will explore different ways an open platform STEMBoT communicates. The girls will then use the BoTs to convey their directions to complete a course.

### **Roller Coaster Engineering**

Girls will learn about the engineering involved in roller coasters. Then, girls will get to use their engineering skills to build their own roller coaster.

### **Twists, Turns, and Surprises with Math**

What is mathematics? Where do you find it? You may be in for some surprises. Girls will explore the mathematics connected to the twists and turns of mathematical puzzles and stunts, games and shapes, and even doodles. They will also investigate the Golden Ratio patterns found in art, nature, and music.

## **SAVVY SKILLS WORKSHOPS FOR GIRLS**

### **Cybersecurity**

Girls will learn about opportunities and threats when using the internet—quick research, social networks, downloading, passwords, fraud, and predators. The girls will also learn about safety measures regarding cybersecurity and protection of their computers, cell phones, and how to carefully use social media.

### **Money Talks**

Girls will learn the importance of managing money through discussions about budgeting, summer jobs, and taxes. The girls will also learn about the impact of a good credit score, different types of cash accounts, and paying for college.

### **My Awesome Brain: The Many Jobs of the Brain**

Girls will learn about the many jobs of the brain, such as transforming touch into feelings, what happens when your eyes get tired, how some people hear colors, and how we understand the brain with neuroimaging. Girls will also discuss a variety of STEM careers in this field.

### **We Each Get Only ONE Body**

Girls will learn that we get only ONE body and it must last for a lifetime. Girls will participate in two interactive games to recognize the various dimensions of health. The girls will also discuss some tips and tricks to stay healthy and learn that her health is the best investment she can make for herself.