Exploring Careers in Healthcare & Onward (ECHO):
A Career Exploratory Event!

LEARNING OBJECTIVES:

- To explore the physiology of the heart, lungs, and nervous system
- To create crafts and visual models to learn about different medical specialties
- To explore careers in healthcare
- To meet real-life healthcare providers and students

WHAT: Four activity tables including:

- **TABLE 1:** Cardiology, **"**Build Your Own Stethoscope"
- **TABLE 2:** Pulmonology, "Learn About Lungs"
- **TABLE 3:** Surgery, "Make a Surgeon's Bracelet"
- **TABLE 4:** Neurology, "All About Reflexes"

The following pages provide guides for volunteers and organizations looking to host an ECHO event at schools, libraries, and public spaces! Be sure to pair this with the **Experiment Worksheets** for each table for the best experience.

TABLE 1: Cardiology, “Build Your Own Stethoscope”

LEARNING OBJECTIVES:

- To learn all about the heart
- To create your own make-shift stethoscope to take home

WHAT:

- **“Build Your Own Stethoscope”** Experiment Worksheet

WHY: To teach the students about the heart and how and why it beats faster when we exercise. To have students make their own stethoscope that they can use to listen to the volunteer’s and their family’s hearts

HOW:

- At your table, make sure that you have all necessary supplies: a roll of duct tape, small plastic funnels, toilet paper rolls, and scissors. Make sure to have stethoscopes as well for the demonstration!
- Walk the students through the **Experiment Worksheet for “Build Your Own Stethoscope”** (available in this collection in both English and Spanish). Be sure to make it fun and interactive – don’t be afraid to jump up and down with the students and run around the room!
- Make sure to emphasize basic physiological principles surrounding cardiology and the human heart. Ask students: how does our heart rate change when we exercise, or when we lay down? Many of these points are highlighted in the given instructions!
- We want to show students that they can witness our bodies adapt in real time to help us jump up and down, run around, and play!

TABLE 2: Pulmonology, “Learn About Lungs”

LEARNING OBJECTIVES:

- To learn about how our lungs work - how they inflate and deflate to give us oxygen
- To make a fun craft representing a model of our lungs

WHAT:

- **“Learn About Lungs”** Experiment Worksheet

WHY: To create a visual model that students can take home representing how our lungs work to help us breathe and get oxygen

HOW:

- At your table, make sure that you have all necessary supplies: a roll of duct tape, balloons, plastic straws, and scissors.
- Walk the students through the **Experiment Worksheet for “Learn About Lungs”** (available in this collection in both English and Spanish).
- Make sure to emphasize basic physiological principles surrounding breathing and our lungs. Ask students: how do our lungs change in size when we take a deep breath in? Or when we exhale? Walk through deep breathing with students so that they can connect the visual model to their actual lungs!
- We want to show students that they can witness our bodies work to keep us breathing, even when we’re not thinking about it!

TABLE 3: Surgery, “Make a Surgeon’s Bracelet”

LEARNING OBJECTIVE:

- To learn how surgeons tie knots during surgery
- To practice the two-handed tie and use it to make a bracelet

WHAT:

- **“Make a Surgeon’s Bracelet”** Experiment Worksheet

WHY: To learn basic principles surrounding suture tying and apply them towards making a craft

HOW:

- At your table, make sure that you have all necessary supplies: a roll of duct tape, bracelet string, and scissors.
- Walk the students through the **Experiment Worksheet for “Make A Surgeon’s Bracelet”** (available in this collection in both English and Spanish). This can be a harder activity to learn – be sure to emphasize patience through this process. Ultimately, we are here to learn and have fun!
- Discuss the reasoning behind why surgeons use this particular knot during surgery with students throughout the activity. Ask students to compare the two-handed knot to a regular knot: how strong are each of them, and which one is easier to undo and take apart?
- We want to give students the opportunity to feel like real surgeons and turn a learning experience into a fun and crafty activity!

TABLE 4: Neurology, “All About Reflexes”

LEARNING OBJECTIVE:

- To learn how deep tendon reflexes work
- To make a model that demonstrates the patellar (knee) reflex
- To practice the patellar (knee) reflex on ourselves and volunteers!

WHAT:

- **“All About Reflexes”** Experiment Worksheet

WHY: To explore the physiology behind neural reflexes, practice eliciting reflexes ourselves, and create a reflex model that represents what we learned!

HOW:

- At your table, make sure that you have all necessary supplies: small rectangular pieces of cardboard, small rubber bands, marbles, tape, scissors. Make sure to have reflex hammers as well for the demonstration!
- Walk the students through the **Experiment Worksheet for “All About Reflexes”** (available in this collection in both English and Spanish).
- Discuss the basic physiology behind reflexes and spinal pathways. Make sure to review with students why we test them in the doctor’s office and tie it to their own experience!
- We want to empower students to create a real-life reflex model that they can compare to their own physiology!