Regional Science Consortium 7th Annual Problem Solving Hack-a-Thon Fall 2022

Welcome to the RSC's 7th Annual Hack-a-Thon! This event takes place in person at the Tom Ridge Environmental Center December 6th, 7th, & 8th, as well as virtually from anywhere, anytime! This takes about 3.5-4 hours to complete and can be spread across multiple days or completed all at once. Students will work together in groups or individually to solve *The Challenge* via 5 benchmarks, including the teams constructing prototypes of their solutions using items collected by your school. Recommended items can be found on the Materials Collection Flyer. **Please provide ample time before your scheduled participation date to collect materials for prototype construction.**

For virtual participants, students will have the opportunity to present their solutions to the RSC team for judging in a digital format such as a live video call, recorded video, recorded ppt, photo, or any other creative way they would like to share their project. A video presentation or video call will best allow us to see your students' solutions and prototypes in action! Teachers may coordinate video calls by contacting the Regional Science Consortium's Education Manager, Sarah Magyan, at Sarah@RegSciConsort.com. Recorded videos, PowerPoints, and photos can be submitted to the RSC via email, Google Drive, or Dropbox to Sarah@RegSciConsort.com. The presentations will be evaluated, and feedback provided by the RSC within approximately one week of receiving them. This time frame may vary depending on the number of presentations received.

Note: This event is very flexible! The goal of Hack-a-Thon is to empower student creativity, exercise their problem-solving abilities, and provide experiential learning. Please adjust any elements so they work best with your classroom.

Instructions:
1. Begin by separating students into teams. We recommend having students fill out the *Registration Form* and then utilizing this information to create strong teams of diverse specialties. Students may work individually if group work is not possible.
2. The class should then watch all three *Lightning Talks* by our panel of experts at the RSC at www.RegSciConsort.com/Expert-Presentations-2022. The password to access this page is **challenge** (all lowercase).
    a. **Note:** We do not recommend letting students know any information about *The Challenge* before watching these videos. Part of the experience is the "reveal" of the problem.

3. Introduce students to *The Challenge* and provide each with a Team Form to complete.
    a. **The Challenge:** Students will learn about infectious disease, it's spread, testing, and how it is managed. They will then brainstorm improvements that can be made to their schools or classrooms to prevent infectious disease. Student designs must identify the challenges your school/classroom faces when facing infectious disease and how these challenges can be managed. Incorporate as many improvements as you can!
4. Students can now begin working through each benchmark described on their *Team Form*.
    a. Teachers should check the box next to each benchmark on each team's form as it is completed.
    b. We recommend setting a timer for each benchmark to help keep students on track and promote the Hack-a-Thon atmosphere. Please reference the *Team Form* for details on each Benchmark. Approximate time frames for each benchmark are listed below:
        i. Benchmark 1: Define Team Name and Roles
            1. 5-10 minutes
        ii. Benchmark 2: Research and Design Plan
            1. 45-60 minutes
        iii. Benchmark 3: Building Prototype, Materials, & Budget
            1. 30-45 minutes
            2. Often combined with Benchmark 4 so all team members have a task.
        iv. Benchmark 4: Create Presentation
            1. 30 minutes
        v. Benchmark 5: Communicate Solution
            1. 60 minutes
            2. Each team presentation should be about 5 minutes long with an additional 2-3 minutes after for questions.
5. Submit student presentations to the RSC for judging! We will provide feedback and awards to the teacher to be communicated back to the students.
    a. Teachers can submit these to the RSC via email, Google Drive, or Dropbox to Sarah@RegSciConsort.com or by scheduling a video call.