Student Impact Competition Career Activity Design Previous Winner

FIRST PLACE – Design Competition Pilot (Spring 2023)

Note: **This is to give you an idea of the kind of activity you could plan and host. In the pilot, students just designed an activity (they did not also have to implement it) and the competition form was slightly different.

Akhil and Aditya - Cox Mill High School

Activity Name: Cybersecurity Skills Workshop

Career Activity Type: (select all that apply) Not sure? View activity definitions

- ☐ Guest speaker
- ☐ Career fair
- ☐ Worksite tour
- ☐ Informational interview
- ☐ Job shadow
- ☐ Resume coaching/review session
- ☐ Mock interview
- ☐ Mentorship
- ✓ Skills workshop (a guest speaker who then has you complete an activity)
- ☐ Partner engagement project

Which of the following goals does this activity achieve? (select all that apply)

- ✓ Aspirations - identify a career of interest and map a plan to get there
- ✓ Skills - develop Future Ready Skills and get feedback on them
- ✓ Connections - build relationships with industry professionals

Which of the Future Ready Skills does this activity focus on? (select all that apply)

- ✓ Collaboration
- ✓ Communication
- ✓ Problem Solving
- ✓ Initiative & Self-Direction
- ✓ Social Awareness
- ✓ Planning for Success

Describe your career activity. What would students do? What industry professional(s) and/or companies would be involved?

The 3 main parts to this activity are a speech from a cybersecurity professional, Decode puzzle challenge and creating a cybersecurity presentation.

A cybersecurity professional will explain what they do in their day-to-day job and the benefits of pursuing a career in cybersecurity. The professional can explain their pathway to getting a job in the field of cybersecurity and give useful advice on what high schoolers can do to prepare themselves for a career in cybersecurity.

The Decode puzzle challenge will be done in a group setting where 2 to 4 students will work together to crack the code. The students will use ciphers, binary numbers and many other cybersecurity concepts to help find the final code in this group activity.
(An example of the decode puzzle challenge has been attached to the form)

In the final part of the activity, students will continue working in a small group to make a presentation about cybersecurity threats and how to protect yourself against them. They will present this after they are done with the slideshow. The cybersecurity professional can walk around while the students are coming up with their slideshow to help them think of potential cybersecurity threats and how people can protect themselves from these threats.

What part(s) of the activity would help students build the skill(s) you selected above?

The speech by the cybersecurity professional will help students plan for future career success as they will learn more about the career opportunities available in the field of cybersecurity. The speech will also help students think about the pathways to getting a cybersecurity job and what they can do from now to prepare themselves for this career path.

This Decode puzzle challenge will help students learn cybersecurity concepts with a fun activity. This will also help teach collaboration, communication and problem solving as they have to work together to solve the challenging puzzle. This puzzle allows students to apply cybersecurity concepts in a group setting which will help them learn the concepts as the students can participate in the activity without having prior knowledge of cybersecurity or computer science.

The cybersecurity presentations also help teach communication and collaboration as the students have to work in groups and present in front of a crowd. The presentations are also a form of social awareness because the students are researching and presenting how people can avoid being exposed to cybersecurity threats and presenting information regarding that. The activity also builds student initiative because the students have to do their own research to learn more about cybersecurity threats and how to counteract these threats.

Talk to or survey at least 3 of your classmates. What feedback and ideas did you get from classmates as you designed this activity? Why do you think students would find this activity helpful?

In talking to other students, we heard they are interested in learning more about different IT careers. Cybersecurity is a fast-growing field with great job prospects but many high school students have not been exposed to cybersecurity concepts in school. This activity allows students to get an understanding for some cybersecurity concepts and build interest in the career paths available in cybersecurity while still being simple enough for new students to participate. I am the leader of the computer science club at my high school and I planned an activity quite similar to the one I have described which really helped generate interest for cybersecurity in my school. I think that this could be very beneficial to students across the country because it can inform people about one of the fastest growing areas in the information technology sector.

Share any additional information you want the judges to know about the career activity you've designed. You can include links to any materials (videos, activity flyers, etc.).

An example of the decode puzzle has been included in the files. While there can be many variations on the puzzle depending on the experience of the target audience, I think that the example puzzle is quite useful as it can be solved without too much prior cybersecurity experience. I have also attached a simple example flyer which can be used to promote the cybersecurity workshop. It would need to be filled in with the specific details (like event location and timing) but it can be very useful in getting students to join the workshop.

DECODE PUZZLE EXAMPLE

Exercise 1:

IF

THE QUICK BROWN FOX JUMPS OVER THE LAZY

IS EQUAL TO

RFC OSGAI ZPMUL DMV HSKNQ MTCP RFC JYXW

WHAT IS ECGUCT

Exercise 2:

IF

THE QUICK BROWN FOX JUMPS OVER THE

IS EQUAL TO

20 8 5 17 21 9 3 11 2 18 15 23 14 6 15 24 10 21 13 16 19 15 22 5 18 20 8 5

WHAT IS YOUR ANSWER FROM EXERCISE 1

Exercise 3:

IF

19 7 4 16 20 8 2 10 1 17 14 22 13 5 14 23 9 20 12 15 18 14 21 4 17

IS EQUAL TO

THE QUICK BROWN FOX JUMPS OVER

WHAT IS YOUR ANSWER FROM EXERCISE 2

Exercise 4:

IF

THIS IS CASE SENSITIVE

IS EQUAL TO

84 72 73 83 32 73 83 32 67 65 83 69 32 83 69 78 83 73 84 73 86 69

WHAT IS YOUR ANSWER FROM EXERCISE 3

Exercise 5:

IF

20 13 32 12 13 13 45 13 39 15 92

IS EQUAL TO

0 1 0 0 1 1 1 1 1 1 0

WHAT IS YOUR ANSWER FROM EXERCISE 4

Exercise 6:

IF

0111

IS EQUAL TO

7

WHAT IS(YOUR ANSWER FROM EXERCISE 5) + 1009

Exercise 7:

IF

26
IS EQUAL TO
1A
AND
IF
177
IS EQUAL TO
B1
WHAT IS (WHATEVER YOUR ANSWER WAS FROM EXERCISE 6) + 49364

Exercise 1: CAESAR -Caesar Cipher
Exercise 2: 3 1 5 19 1 18 -Number Conversion
Exercise 3: DBFTBS - Number Decryption
Exercise 4: 68 66 70 84 66 83 -ASCII
Exercise 5: 0 0 0 0 0 1 -EVEN or ODD
Exercise 6: 10 - BINARY
Exercise 7: C0DE -HEXADECIMAL

CYBERSECURITY WORKSHOP

Location

Date

Time

Meet Professionals

Develop Skills

Register Today!

Contact Info