

Developing Cybersecurity Teaching Content through Group Brainstorming



Session 2

Saturday, July 29, 2023, 1:00pm – 2:30pm
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Before we start...

- Don't be afraid to speak louder so that the cameras can catch all of the ideas
- Our topic is “user authentication” - while we encourage you to freely develop your thoughts, try to give at least two activities that are focused on this topic
- You don't have to only use sticky notes
 - For example, you might want to use the writing pad (one page per activity, for example)
 - Don't let the tools and resources we've given you limit your idea generation
 - You can use the whiteboard at the front of the room if you want, but just don't erase before taking a picture!
- This is a group effort, so communication with your group is important! Talk to each other so that ideas develop and grow!

Ice Breaker Activity

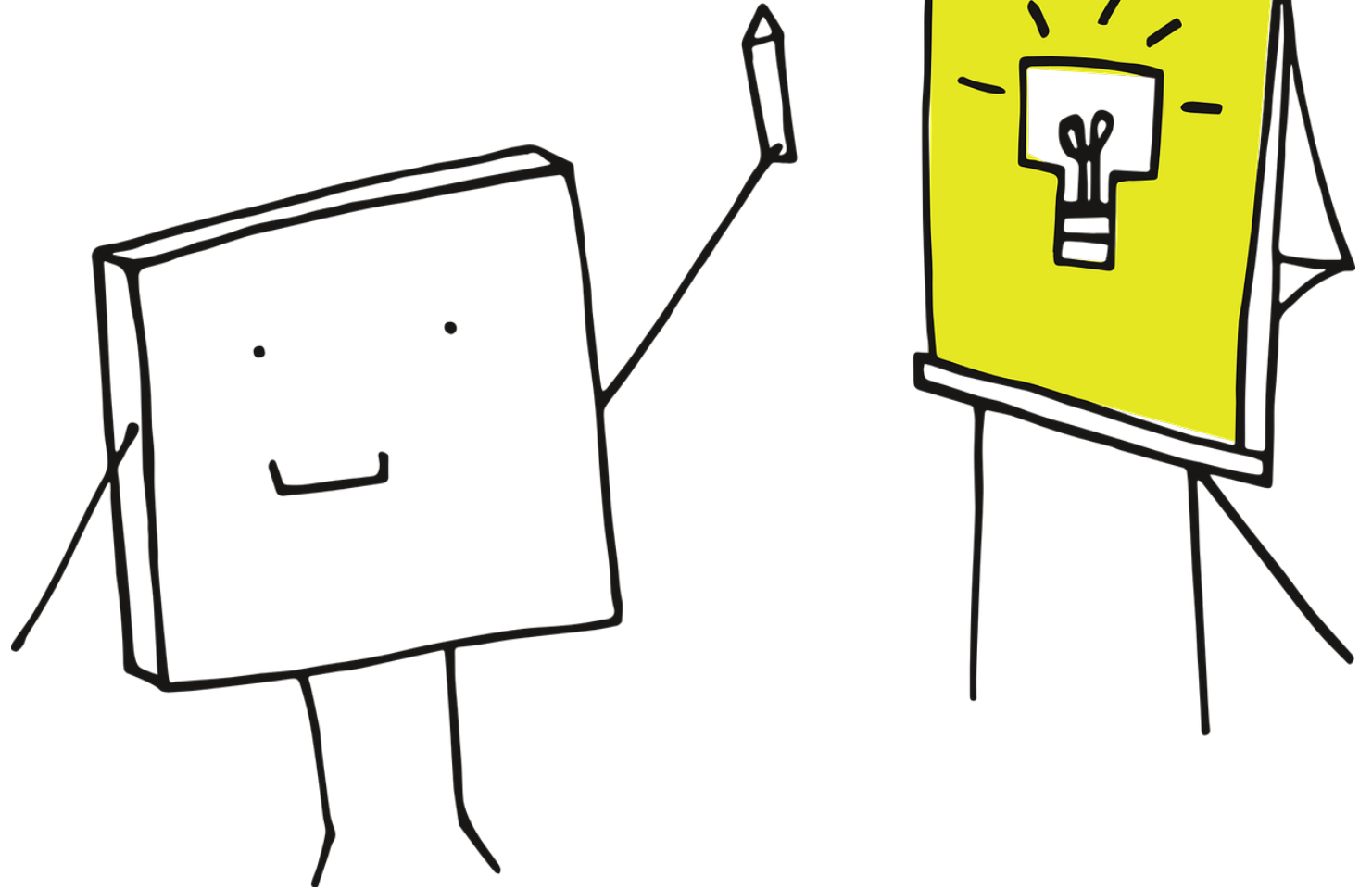
Your objective is to order yourselves in a line or circle based on your birth month and day, from the beginning (January 1st) to the end (December 31st) of the year – ignoring the year. But there's a twist! You can't speak or gesture your age to others. Instead, interact non-verbally, using body language, facial expressions, and other creative ways.



3:00

Let's Revisit the Study Goal

Identify threat scenarios that are relevant and personalized to high school students so that these scenarios can be effectively used to teach the students cybersecurity concepts.





Last Week's Brainstorming Questions

1. Why would personalizing threat scenarios be useful?
2. Why would personalizing threat scenarios promote learning?
3. How do you think students would respond to personalized threat scenarios?

Organize Ideas

Provide a number on a scale from 0 to 10 indicating that the idea is not important at all to extremely important, respectively.

Help us with
handwriting...



Last time, everyone felt personalizing cybersecurity instruction could be useful, with some considerations...

Is personalization truly possible?

(A)

- Focus on engaging (doing something) activities rather than personalized activities
- Current personalized approaches don't reflect what's really happening in the real-world (like hacking social media accounts)
- Personalized content requires truly knowing the individual you're targeting
- Engaging activities require students to do something that promotes positive and ethical behaviors
- **Goal: Engaging, relevant activities**

Potential negative consequences like fostering “bad hacking mentalities”

(B)

- Personalized content may influence bad behavior
- Would need to also stress to students that it's easy to figure out who you are
- Introduce Blue Teams concepts and Bug Bounty Programs
- But personalized learning could make students more aware of cybersecurity in general, like phishing e-mails, to encourage the appropriate responses
- Interested in scenarios that are relevant to cybersecurity as a whole
- **Goal: Large problem-solving projects**

Remember the rules...

- ✓ Quantity over quality
- ✓ No idea is a bad idea
- ✓ Creative and wild ideas are encouraged
- ✓ Jot down everything
- ✓ Avoid criticizing or praising ideas
- ✓ Avoid lengthy discussion
- ✓ Use many tools to express your ideas

Today's Objective is Activity Generation

Is personalization truly possible? (A)

- Focus on engaging (doing something) activities rather than personalized activities
- Current personalized approaches don't reflect what's really happening in the real-world (like hacking social media accounts)
- Personalized content requires truly knowing the individual you're targeting
- Engaging activities require students to do something that promotes positive and ethical behaviors
- **Goal: Brainstorm engaging, relevant activities**

Potential negative consequences like fostering "bad hacking mentalities" (B)

- Personalized content may influence bad behavior
- Would need to also stress to students that it's easy to figure out who you are
- Introduce Blue Teams concepts and Bug Bounty Programs
- But personalized learning could make students more aware of cybersecurity in general, like phishing e-mails, to encourage the appropriate responses
- Interested in scenarios that are relevant to cybersecurity as a whole
- **Goal: Brainstorm large problem-solving projects**

Today's Brainstorming Questions

1. Which scenarios are suitable for classroom instruction, and why?
2. Are these scenarios truly relatable?
3. What makes scenarios relatable, including the media of presentation (e.g., online content, images, videos, slide decks, music, etc.).
4. Which assessments/rubrics should be used for measuring learning?
5. What are the potential limitations and benefits on these activities?

Things to Keep in Mind



Try to develop 1 to 2 activities that reflect real-world threat scenarios. Others can be as creative as you like.

For each activity, brainstorm...

Why it's relatable (but, not, necessarily, personalized)

What it could look like from top to bottom (goal of the activity, what students will be doing, how it will be graded)

Limitations and benefits of this activity

Remember, wild and creative ideas are encouraged, quantity over quality, and avoid discussing one activity for a long time!

The Table Facilitator should...

Take pictures of everything the group produces and upload to



Help enforce the rules within the group

Goal (A): Brainstorm engaging, relevant activities

Goal (B): Brainstorm large problem-solving projects

Today's Brainstorming Questions:

1. Which scenarios are suitable for classroom instruction, and why?
2. Are these scenarios truly relatable?
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Order the activities the group generated from most to least favorite. Use consecutive numbers (starting with #1 for most favorite) to label the activities.

Hey Table Facilitator, let's wrap up!

1. Take pictures of everything the group produces and upload them to

1. If you're in Group A:



2. If you're in Group B:



2. Take and upload pictures BEFORE anything is erased or discarded



Thank You & Reminders

A special thank you for your participation today!

Reminder:

Virtual Session: Saturday, August 5, 2023, from 12:00 PM to 1:00 PM via Microsoft Teams.

