



# Purpose of the Coaches Manual for the National Cyber Cup by CYBER.ORG

This manual will provide competition information for coaches and help them to prepare their students to compete in the *National Cyber Cup by CYBER.ORG*. We've compiled advice and tips from teachers, coaches, and former competitors to help guide team sponsors. The *National Cyber Cup by CYBER.ORG* is more than a competition, it is an opportunity for students to learn more about cybersecurity!

## The 2023 Competition

There are **two** competition divisions for the 2023 *National Cyber Cup by CYBER.ORG*:

- 4-8 grade, intermediate division
- 9-12 grade, high school division

Students can only compete in their grade level division- they cannot compete up or down

The competition is a three-day event scheduled for March 28-30, 2023. After the challenges close on March 30, the judges will review the final scores to confirm the winning team. The first-place team in each division will be crowned the 2023 *National Cyber Cup by CYBER.ORG* champion! Coaches will receive a participation certificate template for students who compete.

## Building a Competition Team

In each division, teams can consist of one to four students. Keep the following in mind as teams are selected:

- Each team must be sponsored and registered by a coach/team sponsor. A coach must be an adult that oversees registration activities and receives and relays all communications regarding the *National Cyber Cup by CYBER.ORG*.
- A coach may be a teacher, club leader, or other adult leader.
- Participants and coaches must be citizens within the United States or territories.
- Teams are designated by the coach at registration.
- All students will be registered on a team. This includes students who are working individually (team of one).
- Students on a team should be able to problem solve together.
- Students on a team will need to communicate with each other throughout the competition.

## iKeepSafe

The *National Cyber Cup by CYBER.ORG* has received iKeepSafe COPPA Safe Harbor Certification. This certification ensures that our practices surrounding collection, use, maintenance, and disclosure of personal information from children under the age of 13 are consistent with principles and requirements of the Children's Online Privacy Protection Act (COPPA). More information can be found here: <https://ikeepSAFE.org/products/>



## Registration

<https://registration.nationalcybercup.org/>



### Parents and Guardians

Register Student

Parent and Guardian FAQ

### Coaches

Login

Register

Coaches FAQ

### Registration process:

1. Registration guides for coaches and parents are provided at <https://cyber.org/national-cyber-cup> Please review these documents carefully.
2. Coaches must first register themselves and their school/organization.
3. After coach registration is complete, coaches will receive a coach code and access to their team dashboard.
4. This coach code should be given to parents along with the registration URL. Parents must complete registration for their child. **Coaches cannot register students, and students should not register themselves.**
5. After students have been registered, they will appear in your coach dashboard. Coaches can move them into teams.
6. Coaches can adjust teams until registration closes on March 17, 2023. Modifications to teams cannot be done after this date. Any student who has not been placed on a team by the coach, will be moved to a team of one.
7. The coach's dashboard will show usernames and passwords for students. Coaches are responsible for distributing this information to teams.
8. Continue to check <https://cyber.org/national-cyber-cup> .We will have a link to the competition site here when it is available.

## Equipment/Supplies required to compete in the National Cyber Cup by CYBER.ORG

- A computer, laptop, or tablet with internet connection.
- Additional resources may be needed for competition. A complete list will be released to coaches prior to competition.
  - This may include printouts or easy to source materials (can of Pringles).

## National Cyber Cup by CYBER.ORG Challenges

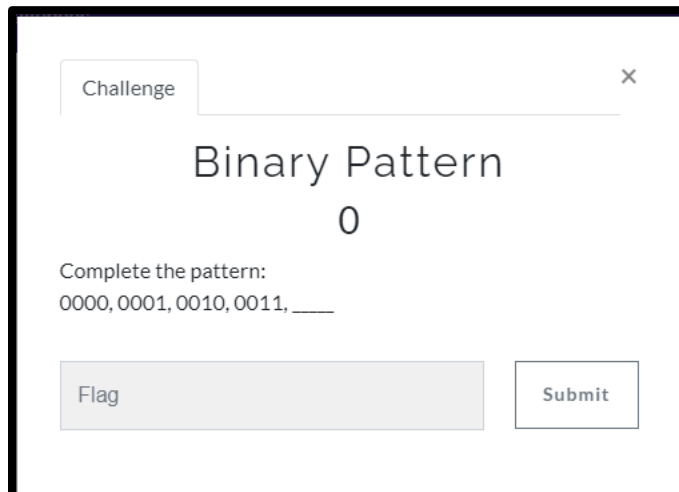
Our Cybersecurity Learning Standards can be used as a topical guide to prepare. More information on the standards can be found at: [https://cyber.org/sites/default/files/2021-08/K-12%20Cybersecurity%20Learning%20Standards\\_5.pdf](https://cyber.org/sites/default/files/2021-08/K-12%20Cybersecurity%20Learning%20Standards_5.pdf).

Challenges are grouped by the following categories:

Computing Systems (CS)	Digital Citizenship (DC)	Security (SEC)
Communication and Networking	Online Safety	Information Security
Network Communication (COMM)	Cyberbullying (CYBL)	CIA Triad (CIA)
Network Components (COMP)	Digital Footprint (FOOT)	Access Control (ACC)
Cloud Computing (CC)	Public and Private Information (PPI)	Data Security (DATA)
Protocols (PROT)	Ethics	Threats and Vulnerabilities (INFO)
Data Loss (LOSS)	Threat Actors (THRT)	Cryptography (CRY)
Hardware	Ethical Integrity (ETH)	Network Security
Network Hardware Components (HARD)	Policy and Legal Issues	Authentication (AUTH)
Internet of Things (IOT)	Rules, Laws, and Regulations (LAW)	Securing Network Components (COMP)
Operating Systems (OS)	Intellectual Property (IP)	Threats and Vulnerabilities (NET)
Software	Usage and User Agreements (AUP)	Physical Security
Software Updates (SOFT)		Threats and Vulnerabilities (PHYS)
Programming and Scripting (PROG)		Security Controls (CTRL)
Applications (APPS)		

These are examples of challenges that participants may see in each division.

❖ **Intermediate**



A screenshot of a challenge interface. At the top left, there is a tab labeled "Challenge" and a close button "x". The title "Binary Pattern" is centered, with "0" below it. The text "Complete the pattern:" is followed by "0000, 0001, 0010, 0011, \_\_\_\_". At the bottom, there is a "Flag" input field and a "Submit" button.

❖ **Intermediate**



A screenshot of a challenge interface. At the top left, there is a tab labeled "Challenge" and a close button "x". To the right of the tab, it says "0 Solves". The title "Hostage" is centered, with "10" below it. The text "What type of malware encrypts your data and demands a ransom (usually in cryptocurrency) for the decryption key?" is centered. At the bottom, there is a "Flag" input field and a "Submit" button.

## ❖ High School

Challenge ×


### Exif Data

0

Find out where the picture was taken.

The flag should be submitted as: ncc{\_\_\_\_\_}

*Why would they do this???*



Flag

Additionally, having a positive attitude, perseverance, and being able to problem solve are helpful skills for students competing.

### **Practice Site**

The practice site can be accessed at <https://practice.nationalcybercup.org/>. It is designed to be a resource that team sponsors should utilize to help students prepare for the competition. The practice site has examples of some of the types of challenges that students will encounter during the competition. There are different types of challenges for each of the three divisions, and the site will remain open throughout the school year. Some challenges are accompanied with hints and/or suggestions to solve.

The practice site can be used in different ways:

- The practice site can familiarize students on how to submit flags(answers). Sometimes entered flags must be identical to the correct flag. This includes spacing, punctuation, and case. If a student feels that the entered flag is correct, they should try different variations of the same answer.
- Skills required for this competition can be taught during class time. Some challenges found on the practice site will have further information detailing how to solve them or how they work. The team sponsor can teach a short lesson to familiarize students. However, the team sponsor should not solve the practice challenges for students. Part of being successful during this competition is learning how to solve problems and troubleshoot.
- Students can go through the practice site and attempt to solve challenges making a list of challenges that are more difficult for them. The list can be used as a guide for challenge types to research/practice.
- Tips for success on the practice site
  1. Students should read the challenges thoroughly and review possible answers before attempting to solve a challenge.
  2. Some challenges will have hints that are provided underneath the challenge itself.
  3. Check the resource page (Intermediate)

### **Intermediate Division Resource Page**

The Intermediate division is designed with the intent for students NOT to use Internet search engines to find answers. To help protect students, a virtual resource page will be available to these divisions during the competition. The required information will often be linked on the resource page, but some challenges will require students to think outside of the box.

While the resource page will be designed to eliminate a student's need to search the internet for information, teachers, coaches, and sponsors must provide their own supervision while students are online with the competition. The competition environment has no way of preventing students from navigating elsewhere on the internet.

### **Competition Etiquette for the National Cyber Cup by CYBER.ORG**

- Competition challenges should only be answered by students during all events.
- The role of the team sponsor is to guide students and encourage perseverance throughout the competition.
- All participants should have the opportunity to learn how to work through these challenges. Flags should NEVER be shared among students in other teams, given to an entire class, or posted online.

## Competition Rules and Regulations for the National Cyber Cup by CYBER.ORG

(Note that rules and regulations may be added prior to registration)

- Challenges may be hidden behind challenges. This means that a new challenge may not display until a prerequisite flag is submitted. These challenges will not be identified to participants.
- Some challenges may have a limited number of allowed attempts to submit the correct flag. These challenges will be identified.
- New challenges will be released throughout the competition.
- Flag submissions will be monitored. Any submission that contains inappropriate content will be reported to the participant's team sponsor and may result in immediate disqualification from this event.
- There is a place for participants to submit questions to the event organizers. Responses to questions that *can be answered* will be sent to the sponsor of that school. Event organizers will not communicate directly with students.
- Participants should not add identifying information such as school/organization or contact email to their user profile.
- Submitted flags are also monitored by timestamp. We are monitoring for actions such as:
  - Multiple correct flag submissions from a participant at a rate that is not possible due to the nature of the challenges.
  - Multiple participants from a school submitting a correct flag within seconds of each other.These types of submissions raise concerns that the correct answer is being shared by a team sponsor or other competitors without teams having an opportunity to solve the challenge on their own.
- Repeated instances of this may result in hidden scores (participants are still allowed to participate but scores are hidden on the scoreboard for the duration of the competition, and the team is not eligible for any recognition).
- Answers to challenges are not released after competition.
- Any conduct by participants and/or team coaches that the judges determine to conflict with the overall mission of the competition will be further analyzed and could result in actions taken including disqualification.