INTRODUCTION TO CYBER SECURITY KIT 1

WELCOME TO THE WORLD OF CYBER SECURITY

Are you excited like we are about this new kit? If you want to learn about cyber security and introduce yourself to this field, you are in luck. This kit will bring you far enough to learn about passwords, hackers, and smart communities. With the b.Boards in mind you have a chance not only to learn about cyber security but also learn about the b.Boards.

This kit contains 6 different activities to help introduce your students to cyber security. Brilliant Labs is happy to offer a free kit of materials and activities designed for students in grades 8 to 11 (ages 13 to 17).

A progression in the acquisition of cybersecurity concepts is planned and will allow anyone to learn the basics of cybersecurity without having any prior learning in this area. We invite teachers to act as guides and facilitators to allow students to progress at their own pace throughout the activities. Each activity is a minimum of one hour in length, and students may well collaborate with each other to share their knowledge and discoveries

Activities have been developed with the objective of introducing the teacher and students to the world of cybersecurity. The activities are built in a format that allows teachers to easily engage in discussions with students. In addition, coding and programming activities are proposed to deepen the concepts and to develop the creative and entrepreneurial spirit in young people.

The Brilliant Labs team will mail the kit with the required materials to the school address. It is noted that the activities are generally completed in a minimum of one hour depending on the level of engagement and discussion with the students.

Obviously, teachers may allow more time to complete each activity. Finally, if you have any questions, feel free to contact Pierre-Paul Cyr (pierre-paul@brilliantlabs.ca) for questions related to this kit.

MATERIAL INCLUDED IN THIS KIT

The following is a list of materials that will be provided and mailed to teachers at your school. Please note that each kit contains enough materials to make up to 8 teams of 4 students for an average class of 32 students in total. Quantities are listed in parentheses.

- Large plastic bin for storing material (4)
- micro:bits (16)
- b.Boards (16)
- USB wires (16)
- Rechargeable power packs (16)
- alligator clip wires (32)
- Jumper wires (40)
- Accessories and sensors: micro servo motors (16), LEDs of different colors with integrated resistors (64), 1 box (3 rolls) conductive tape, screw drivers (4)
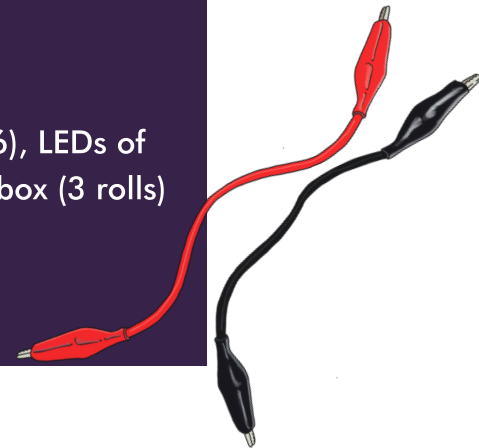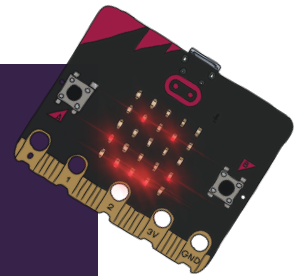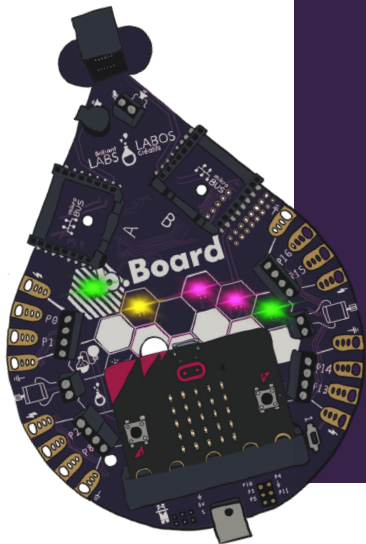
DESCRIPTION OF ACTIVITIES

The activities in this level introduce the teacher and student to coding with micro:bit and basic cybersecurity concepts.

Activity 1: How important is cybersecurity in our lives?

The objective of this activity is to introduce you to cybersecurity terminology and to introduce you to the use of micro:bit. Take the time to read the proposed article and ask the students to search the Web as needed to determine the meaning of the words highlighted in yellow. Be careful, some words may not be related to cybersecurity!

Activity 2: Creating a good password and managing it well

Understand why it is important to use a good password and know the basic rules for having a strong password.

Activity 3: Malware, how to protect yourself

The objective of this activity is to help you better understand the role of malware in cybersecurity and how to protect yourself.

Activity 4: Social engineering, don't fall into the trap

Understand what social engineering is, the pitfalls and how to protect yourself.

Activity 5: 2.4 Ghz Interconnection, the birth of an intelligent community

Understand the risks associated with the use of connected objects and find the best ways to protect yourself.

Activity 6: Our Smart Community 1.0

This activity is the last of the introductory level and will allow you to use all the concepts you learned with the first five activities. You will be asked to create a small classroom model of a smart community with the concepts learned using as many of the electronic and technological resources included in the kit as possible.