# Be a Cyber-Safe Owl!

**Teaching primary and elementary school students about cybersecurity issues and better ways to protect themselves online**



**Level 2**

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# Introduction

Welcome to the second level of this collection of six cybersecurity lessons from Brilliant Labs. This guide is intended for kindergarten to 6th-grade teachers and offers six new lessons to help you teach about the dangers, pitfalls, and tips for learning how to protect oneself online. **No one is better positioned than you to decide when and how you will integrate these lessons into your curriculum and the time you can dedicate to them with your students according to their age and interests.**

The six lessons are visual aids you can use in class with your students. We will suggest discussion points and activity ideas to help supplement your presentation. There is no need to have received cybersecurity training or extensive knowledge in the field. Everything is ready for you! The most important thing is to take time in class with your students to discuss it, clarify certain concepts as needed, and learn easy tips to better protect oneself on the web. This second level in cybersecurity includes the following lessons:

- *Lesson # 7: Social engineering is another type of cybersecurity trap!*
- *Lesson # 8: Understanding the risks associated with the Internet of Things (IoT) is essential!*
- *Lesson # 9: Artificial intelligence (AI), one must be careful of hallucinations!*
- *Lesson # 10: Smart cities can offer benefits, but also risks.*
- *Lesson # 11: There are many careers to discover in cybersecurity!*
- *Lesson # 12: With cybersecurity, one must remain vigilant and continue learning!*

Level 1 includes the following lessons that we suggest doing first:

- *Lesson #1: It is essential to learn not to fall into the traps of cybersecurity!*
- *Lesson #2: Always use a strong password.*
- *Lesson # 3: Phishing, don't get caught like a fish!*
- *Lesson # 4: Malware, you need to learn what they are and what they do!*
- *Lesson # 5: Protect your privacy and not be an open book!*
- *Lesson # 6: Social networks: It is better to think to protect yourself!*

# Introduction

We suggest you integrate this content into your lessons and connect with students and their families' experiences. We also recommend following the established order for smoother class transitions. Along with tips for presentation delivery, this collection includes discussion questions, ideas for supplementary activities, and websites for further exploration that you can incorporate into the classroom.

Use visual aids from lessons, preferably on a large screen, one slide at a time, and take a moment to have frank discussions with your students. Here, quality over quantity will be favoured!

We often hear that cybersecurity is everyone's business. Schools and teachers also have a significant role in educating about cybersecurity. We hope you will be willing to venture into cybersecurity with your students and us! We are sure you will also learn many new things that will help you at work and in your everyday life. Even better, your students can learn essential things to protect themselves online and when using computer equipment or cell phones.

**17 Sustainable Development Goals (SDGs) of the United Nations**
In September 2015, the 193 Member States of the United Nations General Assembly unanimously adopted the resolution 'Transforming our world: The 2030 Agenda for Sustainable Development'. Also known as the '2030 Agenda', the resolution established the 17 Sustainable Development Goals (SDGs) to achieve global sustainable economic, social, and environmental development by 2030. The SDGs and the 169 related targets aim to eradicate poverty worldwide, achieve gender equality, promote economic growth, protect the environment, and create compelling, accountable, and transparent institutions. At Brilliant Labs, we have taken the responsibility to connect all our initiatives and the 17 SDGs. With this collection of

# Introduction

cybersecurity lessons, the covered SDGs are as follows: #4, 8, 9, 10, 11, 12, 16 & 17.



We encourage you to include the 17 SDGs in the planning of all your daily learning activities and to make them known to all your students and your educational community.

Exciting discoveries have been made in the world of cybersecurity! So here is an excellent topic to explore with your students!

Feel free to reach out to us, if needed, and share your discoveries and success stories as you learn new lessons.

# Be a Cyber-Safe Owl!

## Teaching elementary school students about cybersecurity issues and better ways to protect themselves online

### Be a Cyber-Safe Owl!

**Lesson # 1**

Learn about cybersecurity and how to protect yourself

It is essential to learn not to fall into the traps of cybersecurity.

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## Level 1

### Be a Cyber-Safe Owl!

**Lesson #2**

Learn to protect yourself for primary and elementary students

Always use a strong password.

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### Be Cyber-Safe Owl!

**Lesson #3**

Learn to protect yourself for primary and elementary students

Phishing, don't get caught like a fish.

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### Be a Cyber-Safe Owl!

**Lesson #4**

Learn to protect yourself for primary and elementary students

Malware, learn what they are and what they do.

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### Be a Cyber-Safe Owl!

**Lesson #5**

Learn to protect yourself for primary and elementary students

Protect your privacy; don't become an open book.

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### Be a Cyber-Safe Owl!

**Lesson #6**

Learn to protect yourself for primary and elementary students

Social networks: you need to protect yourself.

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Développer une posture d'innovation en Éducation et voir plus loin...

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# Be a Cyber-Safe Owl!

## Teaching elementary school students about cybersecurity issues and better ways to protect themselves online

**Level 2**

### Be a Cyber-Safe Owl!

**Lesson #7**

Learn to protect yourself for primary and elementary students

Social engineering is another type of cybersecurity trap.

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### Be a Cyber-Safe Owl!

**Lesson #8**

Learn to protect yourself for primary and elementary students

Understanding the risks associated with the Internet of Things (IoT) is essential.

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### Be a Cyber-Safe Owl!

**Lesson # 9**

Learn to protect yourself for primary and elementary students

Artificial intelligence (AI), we must be careful of hallucinations.

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### Be a Cyber-Safe Owl!

**Lesson # 10**

Learn to protect yourself for primary and elementary students

Smart cities can offer benefits but also risks.

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### Be a Cyber-Safe Owl!

**Lesson #11**

Learn to protect yourself for primary and elementary students

There are many careers to discover in cybersecurity.

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### Be a Cyber-Safe Owl!

**Lesson #12**

Learning to protect yourself for primary and elementary students

12 Cybersecurity tips to protect yourself better

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**Be a Cyber-Safe Owl!**

**Lesson #7**
Learn to protect yourself
for primary and
elementary students
Social engineering is another
type of cybersecurity trap.

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# Lesson # 7: Social engineering is another type of cybersecurity trap.

**Objective of this lesson**

In lesson #7, students will understand social engineering and learn ways to protect themselves better.

**Proposed approach**

Take a moment in the day to review the different slides of lesson #7 and discuss social engineering with your students. Extensive knowledge in the field is optional. Using the slides from lesson #7 of the '*Be a Cyber-Safe Owl!*' program as educational support, you can briefly introduce new concepts and essential words (jargon) from cybersecurity. The most important thing is to pause and have this unique and vital discussion with your students.

**Questions for discussion:** Here are some examples of questions that could be useful during or after watching the lesson. Please don't hesitate to modify them or add your questions as needed.

- *Students from kindergarten to 3rd grade:*
  - *What are some traps that cyber pirates can use when we use internet-connected devices?*
  - *Why do they do this?*

- *Students from 4th to 6th grade:*
  - *It is often said that the fox is a cunning animal. Why is that?*
  - *Can hackers also be cunning like foxes? Do you have any examples?*
  - *What is a sense of urgency? Do you have any examples?*
  - *How does not thinking before doing something give us trouble?*
  - *Do you have any tips for making the best possible decisions?*
  - *Did you learn something new today? Explain.*

# Lesson # 7: Social engineering is another type of cybersecurity trap.

**Be a Cyber-Safe Owl!**

**Lesson #7**
Learn to protect yourself for primary and elementary students

Social engineering is another type of cybersecurity trap.

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**Slide 1;**
The goal of lesson 7 is to understand social engineering, learn how to protect oneself well, and explain how not to fall into traps.

**What is social engineering?**

**Slide 2;**
Take a moment to have a discussion to see if some students have already heard of it and if they want to make assumptions about what it could be if they don't know.

**Social engineering is a bit like doing an investigation.**

**Slide 3;**
Social engineering is when a cybercriminal uses tactics to steal personal and sensitive information. Often, they use fear or the excitement of winning something to prompt a quick action.

**The issue is that hackers use tricks to learn about people. They try to trick them and take their information.**

**Slide 4;**
Social engineering, also known as psychological hacking, is a dishonest way to trick us into falling into cybersecurity traps. Hackers look for ways to make us react impulsively without overthinking.

**Be a Cyber-Safe Owl!**

**Lesson #7**
Learn to protect yourself
for primary and
elementary students

Social engineering is another
type of cybersecurity trap.

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# Lesson # 7: Social engineering is another type of cybersecurity trap.
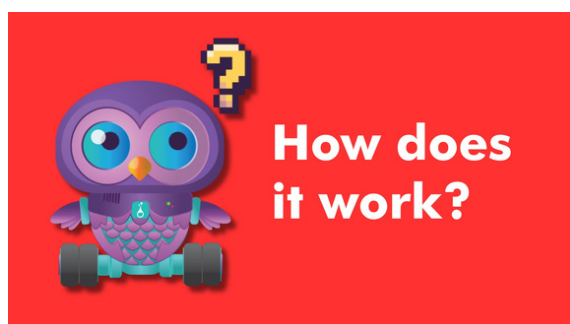
**How does it work?**

**Slide 5;**
In general, we receive a fraudulent email or a weird phone call. This can even escalate to someone knocking on our door asking for personal or sensitive information.

**Social engineering**
Hackers use several ways to carry out their investigations. We have already discussed in other lessons the following examples:

- Phishing
- Malware
- Exchange of personal and sensitive information

Source; Terranoca Security

**Slide 6;**
We have already learned about Phishing (lesson 3), Malware (lesson 4), and Personal and Sensitive Information (lesson 5). Take this opportunity to review these lessons with your students.

**Social engineering**
There are other more or less complicated traps as well, such as:

- Baiting
- Water-holing
- Spoofing
- Voice phishing or Pretexting
- Tailgating

Source; Terranoca Security

**Slide 7;**
Hackers can set complex traps. It is important for students to see several types of these traps. They don't have to remember everything. If they have doubts, discussing them with an adult is essential.

**Baiting attracts people to take action in exchange for a reward like a free movie.**

Source; Terranoca Security

**Slide 8;**
This kind of trap often offers contests, very enticing prizes, and privileges, such as access to higher levels of video games.

**Be a Cyber-Safe Owl!**

**Lesson #7**
Learn to protect yourself for primary and elementary students
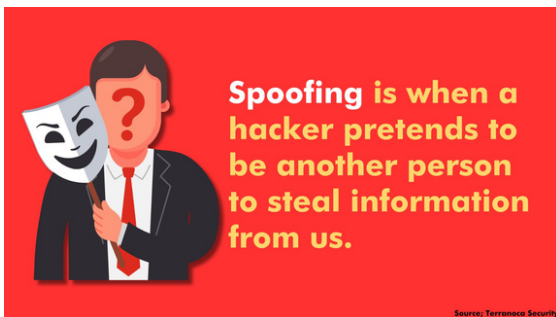Social engineering is another type of cybersecurity trap.

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# Lesson # 7: Social engineering is another type of cybersecurity trap.

**Water-holing** is a type of attack that tries to lure people to a vulnerable website they would usually visit.

Source; Terranoca Security

**Slide 9;**
Hackers try to lure you to an insecure website, a space where it's much easier to install vulnerabilities on your computer or mobile devices.

**Spoofing** is when a hacker pretends to be another person to steal information from us.

Source; Terranoca Security

**Slide 10;**
Some hackers may call you or send you a voicemail pretending to be someone from a bank or even the police. For example, they could say that your bank account is at risk, or you have been hacked. It's often an emergency!

**Voice phishing** and **pretexting** are messages we receive that trick us into exchanging confidential information.

Source; Terranoca Security

**Slide 11;**
Some hackers may assume a false identity to build trust and attempt to steal false information from you. Often, they claim they want to help you.

**Tailgating** is a tactic for physically gaining access to a secure location without permission to steal information.

Source; Terranoca Security

**Slide 12;**
Some hackers can even go to workplaces to access computer equipment, steal it, or install malware. For example, they can pose as repairers on a service call or perform computer equipment maintenance.
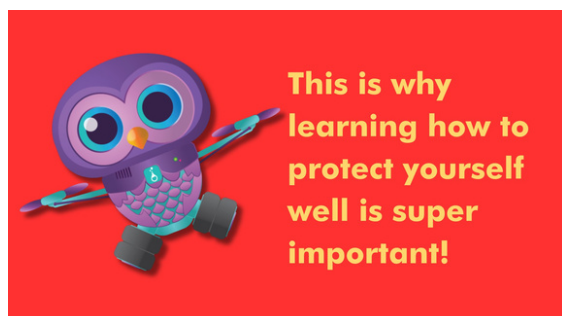
Be a Cyber-Safe Owl!

**Lesson #7**

Learn to protect yourself
for primary and
elementary students

Social engineering is another
type of cybersecurity trap.

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# Lesson # 7: Social engineering is another type of cybersecurity trap.

**This is why learning how to protect yourself well is super important!**

**Slide 13;**
You should emphasize here that it is essential to learn and continue learning about cybersecurity. As cybersecurity evolves, there will be new traps and issues with cybersecurity in the coming years.

**It is super important to learn to avoid the pitfalls of social engineering!**

**Slide 14;**
Hackers try to set all kinds of traps for us. We can protect ourselves from cybersecurity pitfalls by being aware of these traps and learning how to avoid them.

**Useful tricks...**
• You can continue to learn about cybersecurity.
• Don't hesitate to talk with adults and other trustworthy people around you if you are not sure.
• If it seems too good to be true, it is probably not true.
• Don't take unnecessary risks by entering competitions or sharing personal or sensitive information.

**Slide 15;**
The importance here is to use good judgment and ask an adult for help if we need clarification.

**Other useful tricks...**
• Never click on suspicious links from strange emails.
• Don't respond to requests of any kind.
• Don't visit shady websites or unknown advertising sites.
• Never agree with someone coming and meeting you.
• Don't hesitate to ask for help from a trustworthy adult at any time if you are unsure.

**Slide 16;**
It is essential to be careful about the Websites we visit on the Internet and when using Social networks.
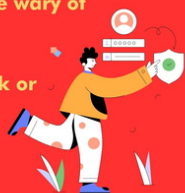
# Lesson # 7: Social engineering is another type of cybersecurity trap.

**Finally...**
- Trust your instincts if you're unsure or afraid.
- Be vigilant at all times and be wary of traps that promise you gifts, access to games or images in exchange for clicking on a link or giving your personal and sensitive information.

**Slide 17;**
In general, if you are scared or feel something is fishy, there is often a trap. Never hesitate to ask a trusted adult for help.

**Lesson #7**

Social engineering is another type of cybersecurity trap.

**Slide 18;**
This is the main point of lesson #7. It is important to remember that hackers use all sorts of traps, and social engineering tricks us by creating a fall sensation of fear and urgency. This usually leads us to make bad choices.

**Be a Cyber-Safe Owl!**

**Slide 19;**
"*Be a Cyber-Safe Owl!*" refers to owls, elegant birds with many qualities, including intuition, intelligence, and wisdom.

**Be a Cyber-Safe Owl!**

Next lesson:
**The Internet of Things (IoT)**

**Slide 20;**
Lesson # 8 will be about connected objects, also known as the Internet of Things (IoT).

**Be a Cyber-Safe Owl!**

**Lesson #7**
Learn to protect yourself
for primary and
elementary students

Social engineering is another
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# Lesson # 7: Social engineering is another type of cybersecurity trap.

**Slide 21;**
Brilliant Labs is a non-profit organization that helps schools develop creativity and innovation.

Their website is https://brilliantlabs.ca/

## Useful websites for lesson #7:

- | *Brilliant Labs* | *Official link of the organization* | *Website* ; https://www.brilliantlabs.ca/
- | *Brilliant Labs* | **Links for cybersecurity Education** | *Website* ; https://www.brilliantlabs.ca/cybersecurity-resources
- *MediaSmarts* | **The Cybersecurity section of MediaSmarts** | *Website* ; https://mediaskills.ca/digital-literacy-and-media-education/digital-issues/cybersecurity
- | *Government of Canada* | *Get Cyber Safe* | **Social engineering: how cyber scams trick us** | *Website;* https://www.getcybersafe.gc.ca/en/resources/social-engineering-how-cyber-scams-trick-us
- | *Fortra's TerraNova Security (Private company)* | **What is Social Engineering?** | *Infographic-PDF File;* https://terranovasecurity.com/wp-content/uploads/2021/09/What-Is-Social-Engineering-EN.pdf
- | *Fortra's TerraNova Security (Private company)* | **How to Protect Your Data from Social Engineering Attacks?** | *Infographic-PDF File;* https://terranovasecurity.com/wp-content/uploads/2021/09/How-to-Protect-Your-Data-from-Social-Engineering-Attacks-EN.pdf

Be a Cyber-Safe Owl!

Lesson #7

Learn to protect yourself
for primary and
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Social engineering is another
type of cybersecurity trap.

# Lesson # 7: Social engineering is another type of cybersecurity trap.

## Additional activities

These can be modified and adapted depending on your students' ages and interests. The important thing here is to reinforce things learned in the lesson.

- *Prepare posters with tips on social engineering.*
- *You could create a list of essential words or create your cybersecurity glossary.*
- *Interview an expert in computer science and social engineering.*
- *You can find statistics about social engineering on reputable sites.*
- *Create a story with a cybersecurity adventure.*
- *Give a brief presentation to another class on what you have learned about the importance of learning to protect yourself and better understanding what social engineering is.*
- *You could create a cybersecurity quiz game.*
- *Create a short video to teach how to better protect yourself online.*
- *Propose to the school's management the creation of a cybersecurity brigade to help other students and teach them how to protect themselves in cybersecurity.*
- *You could create an awareness campaign by preparing posters and placing them around your school.*
- *Create a cybersecurity superhero for your class and develop stories you can write in booklets with your drawings.*
- *Research about owls and discover why these birds have a lot of intuition, intelligence, and wisdom.*
- *Research foxes and discover why these animals are very cunning and how they outsmart traps and chicken farmers.*
- *You could create a table with a list of examples of possible social engineering traps.*
- *You can find newspaper articles about social engineering and share an article you liked with your family.*

Be a Cyber-Safe Owl!
Lesson #8
Learn to protect yourself
for primary and
elementary students
Understanding the risks
associated with the Internet of
Things (IoT) is essential.
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# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

**Objective of this lesson;**
With lesson #8, students will be able to understand what the Internet of Things (IoT) is and ways to learn how to better protect themselves.

**Proposed approach;**
Take a moment to review the different slides of lesson #8 and discuss the Internet of Things (IoT) and connected devices with your students. Extensive knowledge in the field is optional. Using the slides from lesson #8 of the '*Be a Cyber-Safe Owl!*' program as educational support, you can briefly introduce new concepts and essential words (jargon) from cybersecurity. The most important thing is to pause and have this unique and vital discussion with your students.

**Questions for discussion;**
Here are some examples of questions that could be useful during or after watching the lesson. Please don't hesitate to modify them or add your questions as needed.

- *Students from kindergarten to 3rd grade:*
    - *Do you use connected objects at home?*
    - *How can connected objects be useful?*
    - *Are there risks in using connected objects?*

- *Students from 4th to 6th grade:*
    - *How can connected objects be useful? Do you have any examples?*
    - *Are there risks in using connected objects?*
    - *What would be the advantages and disadvantages of using connected objects?*
    - *What advice would you give to people who want to use connected objects?*
    - *Did you learn something new today? Explain.*

# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

**Slide 1;**
The goal of lesson # 8 is to understand social engineering and realize the importance of staying calm when faced with an important decision, even if it looks urgent.

**Slide 2;**
The Internet of Things (IoT) is when objects need to be connected to the Internet to function or provide a better user experience.

**Slide 3;**
IoT is often suggested to make our lives easier or to make our homes much safer.

**Slide 4;**
Students probably have several ideas of objects in their homes that use the Internet of Things. One could think of controlling lights and temperature, security systems, and remote control.

# Be a Cyber-Safe Owl!

## Lesson #8

Learn to protect yourself for primary and elementary students

Understanding the risks associated with the Internet of Things (IoT) is essential.

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# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

**Examples of connected objects could be:**

watches
household appliances
lighting
security systems
thermometers
smart cars

**Slide 5;**
We already have several devices at home that use the Internet of Things. There are more and more connected objects around the world. This number is constantly increasing.

**How does it work?**

**Slide 6;**
It is essential to be well aware of the dangers of using internet-connected devices, as they can become entry points for hackers if they are not properly secured.

**We like to have it easy, and connected objects can help us multitask around the house.**

**Slide 7;**
People often like life to be more accessible, and businesses understand this well. They offer us more and more devices to connect to the Internet. But are they necessary?

**For example, connected objects exist to turn on lights automatically or to change the temperature inside the house without even getting up.**

**Slide 8;**
Internet of Things devices are diverse, and with the development of robotics and smart cars, IoT is expected to become increasingly present in our lives. We will need to adapt and learn how to protect ourselves.

**Be a Cyber-Safe Owl!**

**Lesson #8**

Learn to protect yourself for primary and elementary students

Understanding the risks associated with the Internet of Things (IoT) is essential.

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# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

The problem is that these connected objects become entry points for hackers who could access other devices on our network.

**Slide 9;**
Connected devices not secured by a strong password, for example, can open the door to hackers and allow them to block them or access other devices we have at home.

And there are more and more connected objects all over the planet.

**Slide 10;**
According to some sources, there are currently more than 17 billion IoT devices worldwide, and this number is expected to reach nearly 30 billion by 2030.

Therefore, these connected objects must be reliable, secure, and well-protected by strong passwords.

**Slide 11;**
Before connecting a new Internet-connected device, one should ensure that it is reliable and secure and that the manufacturer's password (which is usually easy) is replaced with a strong password.

We also have to occasionally ask ourselves if they are necessary and if it would be safer to do without them.

**Slide 12;**
Is it essential to buy or install this in our home? Some IoT devices may send your personal information to a third party or even have an automatically activated microphone.

**Be a Cyber-Safe Owl!**

**Lesson #8**

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Understanding the risks
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# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

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**This is why learning how to protect yourself well is super important!**

**Slide 13;**
What is essential here is to ensure that students understand that these connected objects come with advantages and disadvantages. They should remember that.

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**Useful things to know...**
- Some connected objects collect personal information and can offer it to other people.
- Read the information about your connected objects carefully.
- Check if you can use your connected object without sharing your information.
- Turn off your device Wi-Fi and Bluetooth when not using them.

Source; Office of the Privacy Commissioner of Canada

**Slide 14;**
These things will probably be difficult for students to remember. The important thing here is to understand that there are things we can do to protect ourselves, and that we should always ask a trusted adult for help.

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**Useful things to know...**
- Change the device's default password (if there is one) since default passwords are often well-known to hackers and therefore easier to guess.
- When you register, only provide the necessary information: you can use a pseudonym instead of your name and never give your actual date of birth.

Source; Office of the Privacy Commissioner of Canada

**Slide 15;**
Using a strong password is essential when connecting connected objects to the Internet. This is an excellent opportunity to review lesson # 2 on strong passwords with students.

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**Useful things to know...**
- You must make sure to update your software and devices regularly.
- If possible, you should have a backup copy of your files separately from your network.
- If you want to install new connected objects on the network at home or elsewhere, you should always ask a trusted adult for help.

Source; Office of the Privacy Commissioner of Canada

**Slide 16;**
It is essential to install updates on equipment when using an object constantly connected to the Internet. This is also the case for all computers and cell phones at home. It is a simple and effective way to protect yourself.

Be a Cyber-Safe Owl!
Lesson #8
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# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

**Finally...**

Generally, the connected objects we use at home are installed by the adults who live with us.

It is important to remember that these connected objects can collect **personal and sensitive data**.

You must, therefore, be cautious!

**Slide 17;**
Here is an excellent opportunity to review Lesson # 5 on personal and sensitive data and to remind students to always check with a trusted adult if they have any questions.

**Lesson #8**

With the Internet of Things (IoT), it is important to know the risks.

**Slide 18;**
This is the lesson to remember: The Internet of Things (IoT) can pose serious risks if you are unaware of them, and you must always be careful when installing a new IoT device!

**Be a Cyber-Safe Owl!**

**Slide 19;**
"*Be a Cyber-Safe Owl!*" refers to owls, elegant birds with many qualities, including intuition, intelligence, and wisdom.

**Be a Cyber-Safe Owl!**

Next lesson:
**Artificial intelligence (AI)**

**Slide 20;**
Lesson # 9 will be about Artificial intelligence (AI).

**Be a Cyber-Safe Owl!**

**Lesson #8**

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Understanding the risks
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# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

**Slide 21;**
Brilliant Labs is a non-profit organization that helps schools develop creativity and innovation.

Their website is https://brilliantlabs.ca/

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## Useful websites for lesson number 8:

*Warning: We use hyperlinks from various sources on the internet. Some advertisements may be present. Before you use a hyperlink in class, you must take a moment to privately verify that it is good for classroom use with your students. We have checked it before suggesting it to you, but the content may have been redirected, modified, or removed over time. It is even possible that some advertisements have been altered and may make you uncomfortable. Ultimately, it is up to you to decide whether you want to use a hyperlink in the classroom with your students. We prefer to let you know.*

- | *Brilliant Labs* | *Official link of the organization* | *Website ;* https://www.brilliantlabs.ca/
- | *Brilliant Labs* | *Links for cybersecurity Education* | *Website ;* https://www.brilliantlabs.ca/cybersecurity-resources
- *MediaSmarts* | *The Cybersecurity section of MediaSmarts* | *Website ;* https://mediaskills.ca/digital-literacy-and-media-education/digital-issues/cybersecurity
- | Edureka | Internet of Things (IoT) | **What is IoT Explained** | YouTube Video; https://youtu.be/LlhmzVL5bm8
- | What You Need To Know | **The Internet of Things Security (for 2021)** | YouTube Video; https://youtu.be/IQkRscixagM
- | Government of Canada | Get Cyber Safe | **"OK, Smart Device: Let's Be Friends"** | Infographic; https://www.getcybersafe.gc.ca/en/resources/cyber-security-awareness-month-week-5-smart-device-week
- | CPA-Chartered Professional Accountants Canada | **The Internet of Things (IoT) is a booming business** | Infographic; https://www.cpacanada.ca/en/news/world/2019-02-13-internet-of-things-infographic

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Understanding the risks associated with the Internet of Things (IoT) is essential.
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# Lesson 8: Understanding the risks associated with the Internet of Things (IoT) is essential.

**Additional activities;**

These can be modified and adapted depending on your students' ages and interests. The important thing here is to reinforce things learned in the lesson.

- *Conduct a small survey on the use of connected objects at home.*
- *Prepare posters with tips on using connected objects.*
- *You could create a list of essential words or create your cybersecurity glossary.*
- *Interview with a computer expert about the use of connected objects.*
- *You can find statistics about the IoT on reputable websites.*
- *Create a story with a cybersecurity adventure.*
- *You could create a cybersecurity quiz game.*
- *Create a short video to teach how to better protect yourself online.*
- *You can visit a class in your school and explain what you have learned from this lesson.*
- *Propose to the school's management the creation of a cybersecurity brigade to help other students and teach them how to protect themselves in cybersecurity.*
- *You could create an awareness campaign by preparing posters and placing them around your school.*
- *Create a cybersecurity superhero for your class and develop stories you can write in booklets with your drawings.*
- *Research owls and discover why these birds have a lot of intuition, intelligence, and wisdom.*
- *Make a possible list of all devices that can use the Internet of Things (IoT).*
- *Could you take an inventory of connected objects in your home or school?*
- *Create a 2-column table listing the benefits of using connected objects on one side and the disadvantages on the other.*
- *Could you invite someone to show you how to use a connected object?*

Be a Cyber-Safe Owl!

Lesson # 9
Learn to protect yourself
for primary and elementary students

Artificial intelligence (AI), we
must be careful of hallucinations.

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# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

**Objective of this lesson**

In lesson #9, students will understand what artificial intelligence (AI) is and what it means to understand it.

**Proposed approach:** We suggest taking a moment in the day to review the different slides of lesson #9 and talk about cybersecurity pitfalls with your students. It is optional to have extensive knowledge in the field. Using the slides from lesson #9 of the '*Be a Cyber-Safe Owl!*' program as educational support, you can briefly introduce new concepts and essential words (jargon) from cybersecurity. The most important thing is to pause and have this unique and vital discussion with your students.

**Questions for discussion**

Here are some examples of questions that could be useful during or after watching the lesson. Please don't hesitate to modify them or add your questions as needed.

- *Students from kindergarten to 3rd grade:*
  - *What does it mean to be intelligent, in your opinion?*
  - *Are computers intelligent? Why?*
  - *Can computers help us do good things?*
  - *After this lesson, what do you think of Artificial Intelligence (AI)? Is it absolutely necessary?*

- *4th to 6th grade students:*
  - *Have you already heard of Artificial Intelligence (AI)? What do you think it is? Is it indispensable?*
  - *What do you know now about AI that you didn't know before this lesson?*
  - *What more would you like to know about AI?*
  - *Are you aware of the positive use of AI to help people?*
  - *Where will AI be in five years, ten years, fifty years, or even 100 years?*

# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

**Slide 1;**
The goal of lesson # 9 is to understand what artificial intelligence (AI) is and what it is.

**Be a Cyber-Safe Owl!**
**Lesson # 9**
Learn to protect yourself for primary and elementary students
Artificial intelligence (AI), we must be careful of hallucinations.
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**Slide 2;**
Please take a moment to discuss and list possible answers mentioned by students on the board.

**What is artificial intelligence?**

**Slide 3;**
Artificial intelligence, often referred to as 'AI,' is the ability of computers to learn and perform certain tasks to assist us. This capability is expected to improve over time.

**Artificial intelligence (AI) is when a computer can learn to do intelligent things like us.**
Source ; ChatGPT

**Slide 4;**
Examples of artificial intelligence include image recognition by connected cameras, interactive websites for online advice, and even autonomous car driving.

**For example, when a computer can recognize images, give online advice or even drive a car!**
Source ; ChatGPT

Be a Cyber-Safe Owl!

Lesson # 9
Learn to protect yourself
for primary and elementary students

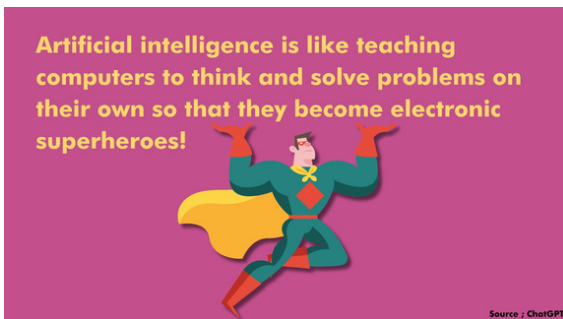Artificial intelligence (AI), we
must be careful of hallucinations.

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# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

**How does it work?**
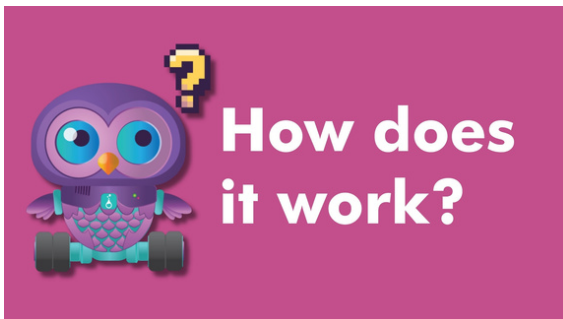
**Slide 5;**
Please take a moment to ask the students about some of their hypotheses.

Artificial intelligence is like teaching computers to think and solve problems on their own so that they become electronic superheroes!
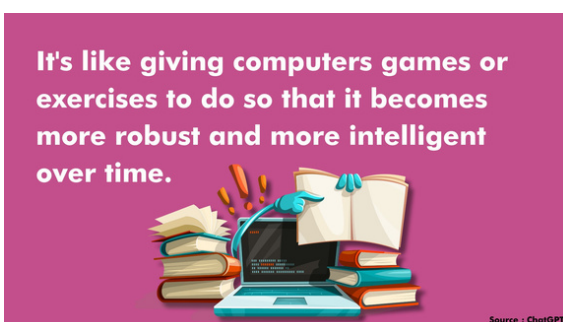
Source ; ChatGPT

**Slide 6;**
AI is about enabling computers to store an incredible amount of data to analyze, classify, and successfully link them together to share them better again.

**Computers can train themselves to think using "learning algorithms."**

Source ; ChatGPT

**Slide 7;**
Algorithms are computer programs that contain a series of steps to follow to solve a problem or do something special with the help of a computer.

It's like giving computers games or exercises to do so that it becomes more robust and more intelligent over time.

Source ; ChatGPT

**Slide 8;**
To develop good algorithms in artificial intelligence, one must understand the data and mathematical models and test them several times to ensure they make good decisions.

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Artificial intelligence (AI), we
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# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

AI can be useful when it helps us solve problems, but you have to be nice and teach it good things for it to benefit people.
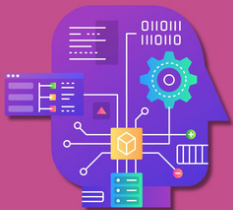
Source ; ChatGPT

**Slide 9;**
AI is effective when humans build good algorithms, and computers are trained to make good connections with the information they share. AI will continue to evolve in the coming years.

AI can present certain risks. For example, it may **make significant mistakes** or **not respect people's privacy.**

Source ; ChatGPT

**Slide 10;**
AI can make mistakes and errors. It is just as dangerous for personal and sensitive data to end up in its data. Stay vigilant at all times!

These are what we call **AI Hallucinations,** which are false information on important topics

**Slide 11;**
The term 'AI hallucinations' is increasingly used to name the distortions and errors generated by AI in significant topics such as health or history.

To protect yourself from AI, you need to **be aware of what you share online, not give personal information** to sites or people you don't know, and **talk to a trusted adult** if you have doubts.

Source ; ChatGPT

**Slide 12;**
As we have seen in the other lessons, we must refrain from sharing our personal information and always talk about it with a trusted adult if we are unsure of what is happening.

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# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

We often hear about ChatGPT with AI, but it could also be **robots that help clean the house, video games** that adapt to you or **translators** that understand and speak different languages!

Source ; ChatGPT

**The future of AI?**
The future of AI is exciting because it could help us solve significant challenges and improve everyone's lives.

Source ; ChatGPT

**The future of AI...**
Some people fear AI will become too powerful or make decisions without always understanding the consequences, like in science fiction movies.

Source ; ChatGPT

This is why it is super important to learn about AI and know how to protect yourself well!

**Slide 13;**
AI continues to evolve and will be increasingly present in our daily lives. More and more companies are offering AI services on the internet. It is essential to be careful with the tools we use.
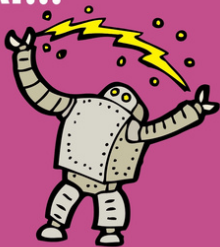
**Slide 14;**
The future of AI is difficult to predict, but it will undoubtedly evolve, and these changes will be increasingly rapid. There are positives to this, but there can also be adverse effects.

**Slide 15;**
Some people are very pessimistic about AI taking up an increasingly more prominent space in the world. What is certain is that the development of AI has begun, and it seems impossible to stop.

**Slide 16;**
Our best defence against AI is to remain vigilant and not share our personal and sensitive information. Choosing our AI tools carefully is also essential, as is using good judgment.

# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

**Slide 17;**

This presentation was prepared by a human who used ChatGPT to find most of the information used on the slides of lesson 9. This human also validated the information using other sources before using it.

**Did you notice it?**

The information sources in this presentation were almost entirely made by using AI!

Source ; ChatGPT

**Slide 18;**

This is the lesson to remember;
It is necessary always to remain vigilant with artificial intelligence (AI) and "AI Hallucinations."

**Lesson #9**

Artificial intelligence (AI), we must be careful of hallucinations.

**Slide 19;**

"*Be a Cyber-Safe Owl!*" refers to owls, elegant birds with many qualities, including intuition, intelligence, and wisdom.

**Be a Cyber-Safe Owl!**

**Slide 20;**

Lesson number 10 will be about smart cities and cybersecurity.

**Be a Cyber-Safe Owl!**

Next lesson:
**Smart Cities**

Be a Cyber-Safe Owl!

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# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

**Slide 21;**
Brilliant Labs is a non-profit organization that helps schools develop creativity and innovation.

Their website is https://brilliantlabs.ca/

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# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

## Useful Websites for Lesson #9;

*Warning: We use hyperlinks from various sources on the internet. Some advertisements may be present. Before you use a hyperlink in class, you must take a moment to privately verify that it is good for classroom use with your students. We have checked it before suggesting it to you, but the content may have been redirected, modified, or removed over time. It is even possible that some advertisements have been altered and may make you uncomfortable. Ultimately, it is up to you to decide whether you want to use a hyperlink in the classroom with your students. We prefer to let you know.*

- | *Brilliant Labs* | Official link of the organization | Website ; https://www.brilliantlabs.ca/

- | Brilliant Labs | **Links for cybersecurity Education** | Website ; https://www.brilliantlabs.ca/cybersecurity-resources

- **|** *MediaSmarts* | **The Cybersecurity section of MediaSmarts** | Website ; https://mediaskills.ca/digital-literacy-and-media-education/digital-issues/cybersecurity

- | LearningMole | **What is Artificial Intelligence for Kids** | YouTube Video; https://www.youtube.com/watch?v=PBJ9_G8d6mo

- | Hey! Guess What | **What is AI ?-Artificial Intelligence Facts for Kids?** | YouTube Video; https://www.youtube.com/watch?v=XUac2v2oVBA

- | Inspirit AI| **What is AI for Kids? An Introduction to Artificial Intelligence for Kids?** | YouTube Video; https://www.youtube.com/watch?v=bpbt2jIpwPs

- | CBC Kids News | **What cake can teach us about artificial intelligence** | YouTube Video; https://www.youtube.com/watch?v=5DK4LHkpp4E

- | CBC Kids News | **How AI tools like ChatGPT are changing homework** | YouTube video; https://www.youtube.com/watch?v=HGaO-s4AtGY

- | CBC Kids News | **Will AI outsmart humanity? Explaining the Singularity** | YouTube video; https://www.cbc.ca/kidsnews/post/watch-will-ai-outsmart-humanity-explaining-the-singularity

- | Kiddle | **Artificial intelligence facts for kids** | Website ; https://kids.kiddle.co/Artificial_intelligence

- | Government of Canada | Canadian Center for Cyber Security | **Artificial Intelligence** | Website; https://www.youtube.com/watch?v=HGaO-s4AtGY&t=1s

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# Lesson #9: Artificial intelligence (AI), we must be careful of hallucinations.

**Additional activities**

These can be modified and adapted depending on your students' ages and interests. The important thing here is to reinforce things learned in the lesson.

- *Conduct a small survey on cybersecurity in general and measure whether people know what Artificial Intelligence (AI) is or not. We can also measure their perceptions.*
- *Prepare posters with information to present AI, the positives, and the dangers.*
- *You could create a list of essential words or create your cybersecurity glossary.*
- *Interview with a computer expert about AI.*
- *Find statistics on the development of AI from reputable sites.*
- *Create a story with a cybersecurity adventure.*
- *Present to another class about what you have learned about AI.*
- *Create a cybersecurity and AI quiz game.*
- *Create a short video to teach what AI is and explain why it is becoming increasingly essential.*
- *Propose to the school's management the creation of a cybersecurity brigade to help other students and teach them how to protect themselves in cybersecurity.*
- *Could you create an awareness campaign by preparing posters and placing them around your school?*
- *Create a cybersecurity superhero for your class and develop stories you can write in booklets with your drawings.*
- *Create a small play and perform it with a puppet theatre.*
- *Use the "Be a Cyber-Safe Owl's mascot" to create and solve math problems or write detective stories on a mission.*
- *Could you write a letter to your parents or family members explaining the best ways to protect yourself in cybersecurity and introducing what AI is?*
- *Could you organize a contest with cybersecurity protection slogans?*

**Be a Cyber-Safe Owl!**

**Lesson # 10**
Learn to protect yourself
for primary and elementary students

Smart cities can offer
benefits but also risks.

LABS LABOS

# Lesson # 10: Smart cities can offer benefits but also risks.

**Objective of this lesson:**
In lesson #10, students will understand what smart cities are and better understand their benefits and dangers of them.

**Proposed approach;**
Take a moment to review the different slides of lesson #10 and discuss cybersecurity pitfalls with your students. It is optional to have extensive knowledge in the field. Using the slides from lesson #10 of the '*Be Cyber-Safe Owl!*' program as educational support, you can briefly introduce new concepts and essential words (jargon) from cybersecurity. The most important thing is to pause and have this unique and vital discussion with your students.

**Questions for discussion:** Here are some examples of questions that could be useful during or after watching the lesson. Please don't hesitate to modify them or add your questions as needed.

- *Students from kindergarten to 3rd grade*:
    - *What do you think a smart city is? Do you have any examples?*
    - *What are the benefits of a smart city?*

- *Students from 4th to 6th grade*:
    - *What do you think a smart city is? Do you have any examples?*
    - *What are the benefits of a smart city?*
    - *Are there any disadvantages?*
    - *Is cybersecurity critical for smart cities? Why?*
    - *How can intelligent cities protect themselves?*
    - *What could future intelligent cities look like?*
    - *What could be some differences between ancient cities and cities of the future?*

# Lesson # 10: Smart cities can offer benefits but also risks.



**Slide 1;**

The goal of lesson # 10 is to understand better what smart cities are, their benefits, and the risks that we need to keep in mind to remain vigilant at all times. Smart cities and intelligent cities are the same.



**Slide 2;**

Ask students to say what they know about smart cities.



A smart city is a community where homes, roads and parks can interact to make people's lives easier and safer.

**Slide 3;**

Smart cities have computer systems that can communicate with each other. For example, to know the temperature of a building without having to go there by using a website and a sensor installed in it.



Smart cities are significant because they help make our homes safer, our travel easier and help the Earth by using less energy and producing less waste!

Source ; ChatGPT

**Slide 4;**

In smart cities, multiple systems communicate with each other (not just the temperature) to ensure the city is safe, efficient, and better for the environment.

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Lesson # 10

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Smart cities can offer
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# Lesson # 10: Smart cities can offer benefits but also risks.

## How does it work?

**Slide 5;**

Ask students if they remember lesson # 9 on connected objects and the Internet of Things (IoT). A smart city has many systems of connected objects working together to ensure the well-being and security of its citizens.

---

Usually, connected objects use data, temperature probes and even cameras to start or stop certain devices in homes or buildings.

**Slide 6;**

In a smart city, many connected objects use the Internet of Things (IoT) to interact with each other. This can easily become complex!

---

In smart cities, computers make homes more comfortable, streets safer and finding information more accessible for everyone!

Source ; ChatGPT

**Slide 7;**

There are benefits, such as making our homes comfortable, streets safe, and finding important information when we need it.

---

Cybersecurity is **like a magic shield** in smart cities that keeps computers and information safe, so everything works perfectly!

Source ; ChatGPT

**Slide 8;**

Cybersecurity is critical in smart cities to ensure that everything runs smoothly at all times. Unfortunately, cities can fall victim to hackers, who often use ransomware to disrupt the operation of certain services.

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**Lesson # 10**
Learn to protect yourself
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# Lesson # 10: Smart cities can offer benefits but also risks.

**An example...**
When traffic lights adapt to car traffic in real-time, allowing cars to move more smoothly.

**Slide 9;**
Traffic lights that adapt in real-time are a great example of an intelligent city using connected objects. This reduces the number of cars waiting unnecessarily, thus reducing $CO_2$ emissions.

**Another example...**
Connected bins that signal when they are full, allowing collection services to pick them up more quickly.

Source ; ChatGPT

**Slide 10;**
Imagine a trash can that signals or alerts the responsible workers to empty them. This eliminates the risk of overflow and unnecessary trips.

**One last example...**
Cameras equipped with video analysis software to detect security or traffic incidents.

Source ; ChatGPT

**Slide 11;**
Some cameras can help detect traffic incidents and alert security services more quickly, which can then better inform other drivers.

**Smart cities require vigilant guardians to safeguard all information and devices from hackers.**

Source ; ChatGPT

**Slide 12;**
Cybersecurity is critical in intelligent cities. Fortunately, cities have people capable of installing and securing Internet of Things (IoT) devices.

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**Lesson # 10**

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# Lesson # 10: Smart cities can offer benefits but also risks.

To protect themselves in smart cities, citizens must be like digital detectives, and use **strong passwords** and **never share their personal and sensitive information**!

Source ; ChatGPT

**Slide 13;**
Citizens and individuals responsible for smart cities must remain vigilant, avoid unnecessary risks, and follow basic cybersecurity rules.

**The future of smart cities?**
The future of smart cities will surely change a lot, but we hope that in the future, computers and robots will be able to work together to make our lives easier, safer and greener.
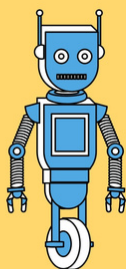
**Slide 14;**
Smart cities are increasingly using connected systems because they can reduce certain costs and better manage municipal facilities. Over time, cities will become smarter and smarter!

**Dangers...**
In smart cities, we must be careful that computers and robots don't become evil and do foolish things!

Source ; ChatGPT

**Slide 15;**
Some people are a little afraid of intelligent cities. It is essential to ensure that the right decisions are made and that connected systems are installed securely according to cybersecurity rules.

**Fortunately, many people** are working in the field of cybersecurity and are **ensuring that we stay protected at all times**!

**Slide 16;**
Several new jobs in the field of cybersecurity have been created to ensure that all these systems remain cyber-secure.

# Lesson # 10: Smart cities can offer benefits but also risks.

**Slide 17;**
This is the lesson to remember; It is vital to remain vigilant in developing smart cities for both citizens and those responsible for municipalities.

**Slide 18;**
"*Be a Cyber-Safe Owl!*" refers to owls, elegant birds with many qualities, including intuition, intelligence, and wisdom.

**Slide 19;**
Lesson #11 will focus on the types of jobs and opportunities for those who want to work in cybersecurity.

**Slide 20;**
Brilliant Labs is a non-profit organization that helps schools develop creativity and innovation.

Their website is https://brilliantlabs.ca/

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Lesson # 10
Learn to protect yourself
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Smart cities can offer
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# Lesson # 10: Smart cities can offer benefits but also risks.

## Useful websites for lesson #10:

- | **Brilliant Labs** | Official link of the organization | Website ; https://www.brilliantlabs.ca/

- | Brilliant Labs | **Links for cybersecurity Education** | Website ;
  https://www.brilliantlabs.ca/cybersecurity-resources

- | MediaSmarts | **The Cybersecurity section of MediaSmarts** | Website ;
  https://mediaskills.ca/digital-literacy-and-media-education/digital-issues/cybersecurity

- | CNBC International | CNBC Explains | **What is a smart city?** | YouTube Video;
  https://youtu.be/bANfnYDTzxE

- | NBC News | **The Smart Cities Of Tomorrow Are Already Here** | Mach | YouTube Video;
  https://youtu.be/THiQtn9hVB8

- | CNBC International | **What is a smart city? - CNBC Explain** | YouTube Video;
  https://youtu.be/bANfnYDTzxE

- | National Geographic | **City of the Future: Singapore-Full Episode** | YouTube Video;
  https://youtu.be/xi6r3hZe5Tg

- | TEDx Talks | **How we design and build a smart city and nation** | Cheong Koon Hean | TEDx
  Singapore | YouTube Video; https://youtu.be/m45SshJqOP4

- | TED | **7 principle for building better cities** | Peter Calthorpe | YouTube Video;
  https://youtu.be/IFjD3NMv6Kw

- | CBC News Corporation | **"This is big money"; New cities promise a smarter, greener future,
  but will reality match the pitch?** | News Article; https://www.cbc.ca/news/world/new-cities-
  1.5034441

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benefits but also risks.

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# Lesson # 10: Smart cities can offer benefits but also risks.

**Additional activities**

These can be modified and adapted depending on your students' ages and interests. The important thing here is to reinforce things learned in the lesson.

- *Create a model of an intelligent city with objects resembling houses, streets, cars, or others demonstrating the operation of an innovative and cyber-secure city. Be creative.*
- *Prepare posters with tips on how to stay vigilant in intelligent cities.*
- *You could create a list of essential words or create your cybersecurity glossary.*
- *Have an interview with a computer expert or a representative from your municipality about the connected objects used by the city.*
- *Find statistics on intelligent cities from reputable websites.*
- *Propose to the school's administration the creation of a cybersecurity brigade to help other students and teach them how to protect themselves in cybersecurity.*
- *Create a story with a cybersecurity adventure.*
- *Could you briefly present what you have learned about smart cities and ways to protect yourself to another class?*
- *Create a quiz game about smart cities.*
- *Create a short video to teach how intelligent cities work.*
- *Could you create an awareness campaign by preparing posters and placing them around your school?*
- *Create a cybersecurity superhero for your class and develop stories you can write in booklets with your drawings.*
- *Create a small play and perform it with a puppet theatre.*
- *Use 'Super-Cool' to create and solve math problems or write detective stories on a mission.*
- *Could you organize a contest with cybersecurity protection slogans?*

# Lesson # 11: There are many careers to discover in cybersecurity.

**Objective of this lesson;**

In lesson #11, students will learn that there are several types of cybersecurity-related jobs and that it is a high-demand field with good salaries and great opportunities.

**Proposed approach;**

We suggest taking a moment in the day to talk about cybersecurity pitfalls with your students. Extensive knowledge in the field is optional. Using the slides from the '**Be a Cyber-Safe Owl!**' program, you can easily present new concepts and essential words (jargon) from cybersecurity. The most important thing is to pause and have this unique discussion with your students.

**Questions for discussion;**

Here are some examples of questions that could be useful during or after watching the lesson. Please don't hesitate to modify them or add your questions as needed.

- *Students from kindergarten to 3rd grade*:
    - *Do you know people who work with computers?*
    - *Can you give examples of jobs that help protect people on the Internet?*
    - *Are these jobs important? Why?*

- *Students from 4th to 6th grade*:
    - *Do you know anyone who works in the field of cybersecurity?*
    - *What are some examples of essential jobs that protect us on the Internet or when using computer devices?*
    - *Are these jobs critical? Why?*
    - *Are these jobs numerous and diverse? Why?*
    - *Is this a job that could interest you? Why?*

# Lesson # 11: There are many careers to discover in cybersecurity.

**Be a Cyber-Safe Owl!**

**Lesson #11**
Learn to protect yourself
for primary and elementary students

There are many careers to
discover in cybersecurity.

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**Slide 1;**
The goal of lesson # 11 is to understand that there are several types of cybersecurity-related jobs, that they are in high demand, have good salaries, and offer great employment opportunities.

? **What are examples of cybersecurity careers?**

**Slide 2;**
You can start with an open question and see what the students already know about it.

**People who work in cybersecurity are like heroes who protect computers and information from hackers trying to harm the Internet.**

Source ; ChatGPT

**Slide 3;**
Often, when there are computer issues, the people who work in this field are called in for help, which gives a serious boost to several individuals.

**Those who work in cybersecurity do things like detect and stop hackers, secure websites to avoid attacks, and protect our personal information.**

Source ; ChatGPT

**Slide 4;**
Generally, cybersecurity professionals ensure that websites are secure and protect our personal and sensitive information. They set up systems to detect and stop hackers.

Be a Cyber-Safe Owl!

Lesson #11

Learn to protect yourself
for primary and elementary students

There are many careers to
discover in cybersecurity.

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# Lesson # 11: There are many careers to discover in cybersecurity.

**Is working in cybersecurity a good idea?**

**Slide 5;**
Before moving on to the next slide, ask the students to answer this question? Are there any of them who want to do this kind of work? What is their motivation?

**There are all kinds of possible jobs in the field of cybersecurity.**

**Slide 6;**
There are several types of cybersecurity career opportunities. These careers are changing over time, and others are added according to new developments in computer science and the growing need for cybersecurity.

**Working in cybersecurity can be challenging.**

**Slide 7;**
Working in cybersecurity is not always easy. You need to complete your studies according to the type of job you want to take on. You must also continue to stay informed and learn about new ways of doing things.

**You have to know how to solve problems, but it's a domain with many great possibilities.**

**Slide 8;**
The most difficult challenge for those working in this field is understanding and solving problems. Furthermore, many careers in cybersecurity can be very lucrative.

# Be a Cyber-Safe Owl!

## Lesson #11

Learn to protect yourself
for primary and elementary students

There are many careers to
discover in cybersecurity.

Brilliant LABS LABOS

# Lesson # 11: There are many careers to discover in cybersecurity.

In cybersecurity, you have black hats and white hats.
Black hats are the **hackers** and the **criminals** of computer networks.

**Slide 9;**
In cybersecurity jargon, "*Black hats*" refer to hackers and cybercriminals.

**White Hats,** on the other hand, **protect computer networks** and **help people** avoid traps. They can also be called **Ethical Hackers.**

**Slide 10;**
In cybersecurity jargon, "*White Hats*" are those who do good, and help people protect themselves. In the cybersecurity field, white hats are sought after to work. They can also be referred to as "*Ethical Hackers*".

**There are several types of cybersecurity jobs.**

Cybersecurity Manager
Engineer
Network Architect
Network tester
Security consultant
Analyst

Source ; ChatGPT

**Slide 11;**
There are dozens of jobs and roles in cybersecurity, and this number changes yearly. Here are some examples.

**Remembering that it is possible to work in cybersecurity is essential.**

**Slide 12;**
The important thing here is not to remember all this information by heart. We just want you to realize that there are several types of jobs for boys and girls who are interested in cybersecurity.

Be a Cyber-Safe Owl!

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# Lesson # 11: There are many careers to discover in cybersecurity.

**Cybersecurity is a rapidly growing field with a need for more qualified workers.**

Source ; ChatGPT

**Slide 13;**
Cybersecurity is constantly changing, and there is a high demand for people working in this field all over the planet.

**The future of cybersecurity**

**Cybersecurity is an important field that continues to change and can be very exciting.**

**Slide 14;**
Numerous computer science and cybersecurity advances have resulted in many available and highly paid jobs.

**Become a Ethical Hacker!**

**Slide 15;**
We encourage young people to do good using the internet, social networks, or cybersecurity tools. We all have a role to play!

**Learning to work in cybersecurity is possible, and the jobs can be numerous and rewarding.**

**Slide 16;**
Some cybersecurity training programs are available in colleges and universities in the province or elsewhere.

# Lesson # 11: There are many careers to discover in cybersecurity.

**Slide 17;**
This is the lesson to remember: There are many and possible careers in cybersecurity.

**Slide 18;**
"*Be a Cyber-Safe Owl!*" refers to owls, elegant birds with many qualities, including intuition, intelligence, and wisdom.

**Slide 19;**
Lesson number 12 will cover cybersecurity as a whole and will be a summary of lessons # 1 to 11.

**Slide 20;**
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# Lesson # 11: There are many careers to discover in cybersecurity.



## Useful websites for lesson #11;

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- | MediaSmarts | **The Cybersecurity section of MediaSmarts** | Website ; https://mediaskills.ca/digital-literacy-and-media-education/digital-issues/cybersecurity
- | Government of New Brunswick | **Cyber Security Career Opportunities in New Brunswick** | YouTube Video; https://youtu.be/N971nTERz1k
- | Infosec (Private training company) | **An Introduction to Cybersecurity Careers** | YouTube Video; https://youtu.be/-AkuKKJ8dN0
- | Simplilearn (Private company) | **Cybersecurity Security Career Roadmap** | Cyber Security Career - Salary, Jobs, and Skills | YouTube Video; https://youtu.be/BlsW9jp9NJM
- | Simplilearn (Private company) | **Top 10 Highest Paying Cyber Security Jobs in 2022** | YouTube Video; https://youtu.be/Jz6jogA29ps
- | Eye on Tech | **What is a SOC (Security Operations Center)?** | YouTube Video; https://youtu.be/S5bIhaZOSys
- | IBM Security (Private company) | **Cybersecurity Trends for 2023 and beyond** | YouTube Video; https://youtu.be/uAHFNuDlcRw
- | CyberNews | **Ethical Hacking: White Hat Hackers Explained** | YouTube Video; https://youtu.be/wt51RP8fsvw
- | HiHo Kids | **Kids Meet a Hacker** | YouTube Video; https://youtu.be/rPlxvo3c_Zk
- | Government of Canada | **Welcome to the Government of Canada Occupational Skills Information System, National Occupational Classification, Cybersecurity Specialists** | Website; https://noc.esdc.gc.ca/OccupationalClassificationSearchResult?ver=28&val65=cyber&val66=security

**Be a Cyber-Safe Owl!**

**Lesson #11**
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There are many careers
to discover in cybersecurity.

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# Lesson # 11: There are many careers to discover in cybersecurity.

**Additional activities;**

These can be modified and adapted depending on your students' ages and interests. The important thing here is to reinforce things learned in the lesson.

- *Conduct a small survey on cybersecurity professions, in general, to find out if people already know them.*
- *Prepare posters with job descriptions in the field of cybersecurity.*
- *You could create a list of essential words or create your cybersecurity glossary.*
- *Interview with a person working in the field of cybersecurity.*
- *Find statistics on various cybersecurity professions across the country or the planet.*
- *Create a story with a cybersecurity adventure.*
- *Make a brief presentation to another class about what you have learned about possible careers in cybersecurity.*
- *Create a cybersecurity quiz game about the different careers in the field of cybersecurity.*
- *Create a short video to explain various professions in the field of cybersecurity.*
- *Propose to your school's administration the creation of a cybersecurity brigade to help other students and teach them how to protect themselves in cybersecurity better.*
- *Create an awareness campaign by preparing posters and placing them around your school.*
- *Create a cybersecurity superhero for your class and develop stories you can write in booklets with your drawings.*
- *Create a small play and perform it with a puppet theatre.*
- *Use the "Be a Cyber-Safe Owl's Mascot" to create and solve math problems or write detective stories on a mission.*
- *Write a letter to your parents or family explaining the best ways to protect the elements of their private life.*

Be a Cyber-Safe Owl!

Lesson #12
Learning to protect yourself
for primary and elementary students

12 Cybersecurity tips to
protect yourself better

Brilliant LABS / LABOS Créatifs

# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.

**Objective of this lesson;**

Lesson #12 will be an opportunity to review and summarize all the other lessons from the beginning. We will transform the 12 lessons into 12 tips to remember to become a "*Cyber-Safe Owl!*"

**Proposed approach;**

We suggest you take a moment to present the slides from lesson # 12 with your students. The slides show the "**12 tips to remember to become a Cyber-Safe Owl!**" We recommend you take a moment with your students to review the 12 tips and reflect on lessons #1 to #12. Ask the students if they remember what they have learned, if they can give examples, and explain the importance of learning to protect themselves in Cybersecurity.

Please consider that your students might be interested in doing some additional activities proposed during the last lessons and become a sort of "Cybersecurity Brigade", helping other students in your school practice what they have learned.

**Questions for discussion:** Here are some examples of questions that could be useful during or after watching lesson # 12. Please don't hesitate to modify them or add your questions as needed ;

- *Did you enjoy these lessons on cybersecurity? Why?*
- *Is Cybersecurity important? Is it more essential for you now after going through the lessons?*
- Is there anything else you would like to learn or do about cybersecurity?
- Is there anything we could do to help other students or people in our community?
- Do you have things you would like to know more about in detail?
- Which advice is the most critical one? Why?
- Would you work in the field of cybersecurity later?
- What seems to be the most significant lesson?
- Is there something you will change from now on when you use the Internet?

# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.

**Slide 1;**
The goal of lesson 12 is to summarize all the lessons learned from the beginning and present a list of 12 tips to remember for becoming a "*Cyber-Safe Owl.*"

**Slide 2;**
The lesson will allow you to review the concepts presented throughout the lessons from the beginning.

**Slide 3;**
It will be essential to adjust the timing of the discussions according to the students' ages and interests. There is much material here to discuss and review! You can do this lesson in several steps if you want.

**Slide 4;**
The lessons have magically transformed into 12 tips for becoming a "*Cyber-Safe Owl.*"

**Be a Cyber-Safe Owl!**

**Lesson #12**
Learning to protect yourself
for primary and elementary students

**12 Cybersecurity tips to
protect yourself better**

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# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.

**Tip # 1**

It is essential to learn not to fall into the traps of cybersecurity.

**Slide 5;**

The first tip is to understand that it is essential not to fall into traps and vulnerabilities that could trap us. Ask students to explain why this is important.

**Tip # 2**

Always use a strong password.

**Slide 6;**

Review with students the difference between a weak password and a strong password. Ask them why this is important.

**Tip #3**

Phishing, don't get caught like a fish.

**Slide 7;**

This is an excellent opportunity to review phishing techniques and definitions. Ask students why it is crucial.

**Tip #4**

Malware, learn what they are and what they do.

**Slide 8;**

Malware is often installed following a phishing attack. Ask students what malware is and what it does.

**Be a Cyber-Safe Owl!**

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# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.

**Tip #5**

Protect your privacy, don't become an open book.

**Slide 9;**
It is important to remember not to share our personal or sensitive information. Ask students to explain the difference and why it is crucial.

**Tip #6**

Social networks: you need to protect yourself.

**Slide 10;**
Social media platforms are places where individuals can post personal or sensitive information. It is essential to think before deciding what to share. Ask students why this is important.

**Tip #7**

Social engineering is another type of cybersecurity trap.

**Slide 11;**
Social engineering is another trap in cybersecurity where hackers try to make us make bad decisions, often quickly and without really taking a moment to think.

**Tip #8**

Understanding the risks associated with the Internet of Things (IoT) is essential.

**Slide 12;**
The Internet of Things can simplify our lives, but connected objects are entry points for hackers. Therefore, connected objects must be secure and reliable.

**Be a Cyber-Safe Owl!**

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# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.



**Slide 13;**
Artificial Intelligence (AI) can make our lives easier, but sometimes we may experience AI hallucinations that are errors or false information. It is essential to keep an eye out and verify our information when necessary.

**Slide 14;**
Smart cities can enable a better quality of life and security and help us protect the environment. However, it is vital to ensure that smart cities are secure regarding cybersecurity.

**Slide 15;**
Several new jobs exist in cybersecurity, and there is currently a strong demand for qualified individuals interested in this field.

**Slide 16;**
To conclude, here is a final tip for this lesson...

Be a Cyber-Safe Owl!

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# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.

**Tip #12**

With cybersecurity, we must remain vigilant and continue learning.

**Slide 17;**
This is the lesson to remember: It is essential to remain vigilant and remember that technologies will change over time. It will be necessary to continue learning and staying up to date with the evolution of cybersecurity

These 12 tips are super important to better protect yourself!

**Slide 18;**
We have created two posters at the end of this document that you can place around your classroom or school. These tips will help students remember what they must do to protect themselves better.

Congratulations, you are a Cyber-Safe Owl!

**Slide 19;**
Congratulations on your perseverance, confidence, and taking the time to educate your students on cybersecurity. Brilliant Labs offers additional cybersecurity resources. Please feel free to contact us if you need to.

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**Slide 20;**
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# Be a Cyber-Safe Owl!

**Lesson #12**
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# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.

**Useful websites for lesson #12;**

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- | Government of Canada | **Canadian Center for Cyber Security** | Website; https://www.cyber.gc.ca/en
- | Government of Canada | **Office of the Privacy Commissioner of Canada** | Website; https://www.priv.gc.ca/en/
- | Royal Canadian Mounted Police | **Centre for Youth Crime Prevention** | Website; https://www.rcmp-grc.gc.ca/en/youth-safety/centre-for-youth-crime-prevention
- | **Kids in the know** | Website; https://www.kidsintheknow.ca/app/en/about
- | **NeedHelpNow.ca** | Website; https://needhelpnow.ca/app/en/index
- | **Zoe & Molly Online** | Website; https://zoeandmolly.ca/app/en/
- | **Canadian Centre for Child Protection** | Website: https://protectchildren.ca/en/
- | Canadian Centre for Child Protection | **Be Smart, Strong & Safe** | Website; https://www.intelligence-assurance-prudence.ca/app/en/home
- | Canadian Centre for Child Protection | **Project Arachnid** | Website; https://www.projectarachnid.ca/en/
- | **Don't get sextorted.** Send a naked mole rat | Website: https://dontgetsextorted.ca/
- | **ProtectKidsOnline.ca** | Website; https://protectkidsonline.ca/app/en/
- | YMCA Canada | Project Shift | **Creating a safer digital world for young women** | Website; http://projectshift.ca/

**Be a Cyber-Safe Owl!**

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# Lesson # 12: With cybersecurity, we must remain vigilant and continue learning.

**Additional activities;**

These can be modified and adapted depending on your students' ages and interests. The important thing here is to reinforce things learned in the lesson.

- *Conduct a small survey on general cybersecurity and students' or adults' use of social networks at school.*
- *You could prepare posters on best practices when using social networks.*
- *You could create a list of essential words or create your cybersecurity glossary.*
- *Interviewing with a computer expert or a "White Hat."*
- *Finding statistics on cybersecurity issues in general.*
- *Create a story with a cybersecurity adventure.*
- *Give a brief presentation to another class about what you have learned about using social networks and ways to protect yourself.*
- *Create a cybersecurity quiz game on the use of social networks.*
- *Create a short video to teach about the risks of using social networks and provide tips for protection.*
- *You could propose to the school's administration the creation of a cybersecurity brigade to help other students and teach them how to protect themselves in cybersecurity.*
- *You could create an awareness campaign by preparing posters and placing them around your school.*
- *Create a cybersecurity superhero for your class and develop stories you can write in booklets with your drawings.*
- *Create a small play and perform it with a puppet theatre.*
- *Use "Be a Cyber-Safe Owl's Mascot" to create and solve math problems or write detective stories on a mission.*
- *You could write a letter to your parents or family members explaining the best ways to protect themselves using social media.*
- *You could organize a contest with cybersecurity protection slogans or tips.*

# Conclusion and acknowledgements

Thank you for taking a moment to use our collection of activities for primary school students.

Brilliant Labs is a non-profit organization located in Atlantic Canada. We encourage hands-on, experiential learning that allows young people to expand their knowledge through creativity, innovation, and today's technology, integrating the United Nations Sustainable Development Goals (SDGs).

In closing, we would also like to invite you to develop the entrepreneurial spirit in your classrooms and in your community. Do not hesitate to contact us if you have questions, and thank you for making a difference in educational programs in Canada or elsewhere.

https://www.brilliantlabs.ca/

**About de author;**

*Roberto Gauvin is an Education Consultant for Édunovis. He is also a lecturer at the Université de Moncton. Roberto has been retired as a professional educator since June 2020. He has worked for over 36 years in education as a teacher, principal, and consultant.  He was the principal of the Centre d'apprentissage of Haut-Madawaska (CAHM), a K to 8 francophone school located at Clair in New Brunswick, Canada, for almost 20 years. Roberto was also an Education Specialist for two years before retirement with CyberNB, a former operating agency of OpportunityNB.*

https://edunovis.com/

Visual aid # 1

# Be a Cyber-Safe Owl!

## 12 cybersecurity tips to remember and become a Cyber-Safe Owl!

1. It is essential to learn not to fall into the traps of cybersecurity.
2. Always use a strong password.
3. Phishing, don't get caught like a fish.
4. Malware, learn what they are and what they do.
5. Protect your privacy; don't become an open book.
6. Social networks: you need to protect yourself!
7. Social engineering is another type of cybersecurity trap.
8. Understanding the risks associated with the Internet of Things (IoT) is essential.
9. With artificial intelligence (AI), we must be careful about hallucinations.
10. Smart cities can offer benefits but also risks.
11. There are many careers to discover in cybersecurity.
12. With cybersecurity, we must remain vigilant and continue learning.

Visual aid # 2

# Be a Cyber-Safe Owl!

## 12 cybersecurity tips to remember and become a Cyber-Safe Owl!

Always use a strong password.

It is essential to learn not to fall into the traps of cybersecurity.

Protect your privacy; don't become an open book.

Malware, learn what they are and what they do.

Phishing, don't get caught like a fish.

Social networks: you need to protect yourself.

Social engineering is another type of cybersecurity trap.

With cybersecurity, we must remain vigilant and continue learning.

With Artificial Intelligence (AI), we must be careful of hallucinations.

Understanding the risks associated with the Internet of Things (IoT) is essential.

There are many careers to discover in cybersecurity.

Smart cities can offer benefits but also risks.