

Although the decline in cigarette use by teens continues, the emergence of e-cigarette use by teens needs to be monitored.

To facilitate the teaching of this topic in the classroom, this presentation is accompanied by a reference guide for teachers, which provides additional information.



It is recommended to start the presentation by assessing the knowledge and viewpoints of students by asking open questions, such as :

- “Why do some young people start vaping?”
- “What is attractive about it to them?”

Image source: Pexels



The presentation is divided into five modules. At the end of each module, there are knowledge-testing questions, followed by a discussion period.

Module 1

What is an e-cigarette?

Module 2

Harmful Effects of Nicotine

Module 3

History and Marketing

Module 4

Legislation and Policies

Module 5

Refusal Strategies

Image source: Pixabay



Module 1

What is an e-cigarette?



Many people wrongly believe that e-cigarettes are harmless.

<https://www.canada.ca/en/services/health/publications/healthy-living/talking-teen-vaping-tip-sheet-parents.html>

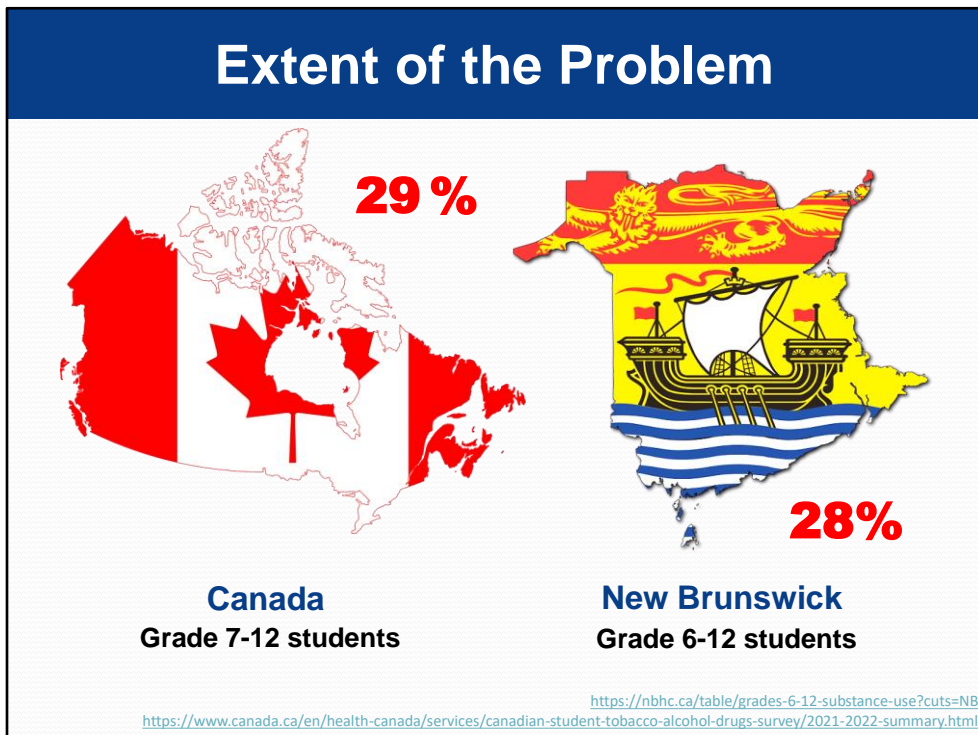
Important:

The purpose of vaping is to help smokers quit smoking. It is not intended for young people or non-smokers.

<https://www.canada.ca/en/health-canada/services/publications/healthy-living/talking-teens-vaping-tip-sheet.html>

Image source: Pixabay

Extent of the Problem



Vaping is not risk-free, but Canadian teens are starting to vape anyway.

According to a recent survey by Health Canada (2021-2022), 29% of Grade 7-12 students have already used e-cigarettes. Moreover, according to the New Brunswick Health Council (2021-2022), 28% of Grade 6-12 students have used e-cigarettes (“vapes”).

Health Canada (2021-2022)

<https://www.canada.ca/en/health-canada/services/canadian-student-tobacco-alcohol-drugs-survey/2021-2022-summary.html>

New Brunswick Health Council (2021-2022)

<https://nbhc.ca/table/grades-6-12-substance-use?cuts=NB>

The 2021-2022 edition of the Student Wellness Survey (SWS) was conducted during the COVID-19 pandemic. Some schools may have had lower participation from their students than previous years. Some students may have participated to the survey during periods of remote learning.

<https://nbhc.ca/table/grades-6-12-substance-use?cuts=NB#about>

Image source: PowerPoint Clipart

Extent of the Problem

New Brunswick

28%



Grade 6 to 8

11%

Grade 9 to 12

41%

<https://nbhc.ca/table/grades-6-12-substance-use?cuts=NB>
https://nbhc.ca/indicators/sh_vap01_1

In New-Brunswick, 28% of students in grades 6 to 12 report having ever used an e-cigarette (vape), even once or twice:

- Grades 6 to 8 - 11%
- Grades 9 to 12 - 41%

Source des images : Clipart PowerPoint

Smoking or Vaping Harmful Effects on Health

Smoking

Tobacco or other substances are burned (combustion) by inhaling the smoke through the mouth.

Vaping

The device heats the liquid (no combustion) and turns it into vapour, then into aerosol.



<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>

Image source: PowerPoint Clipart

Vaping Devices



- Mods
- Vapes
- Electronic cigarettes
- E-cigarettes
- Electronic nicotine delivery systems (ENDS)
- « JUUL »



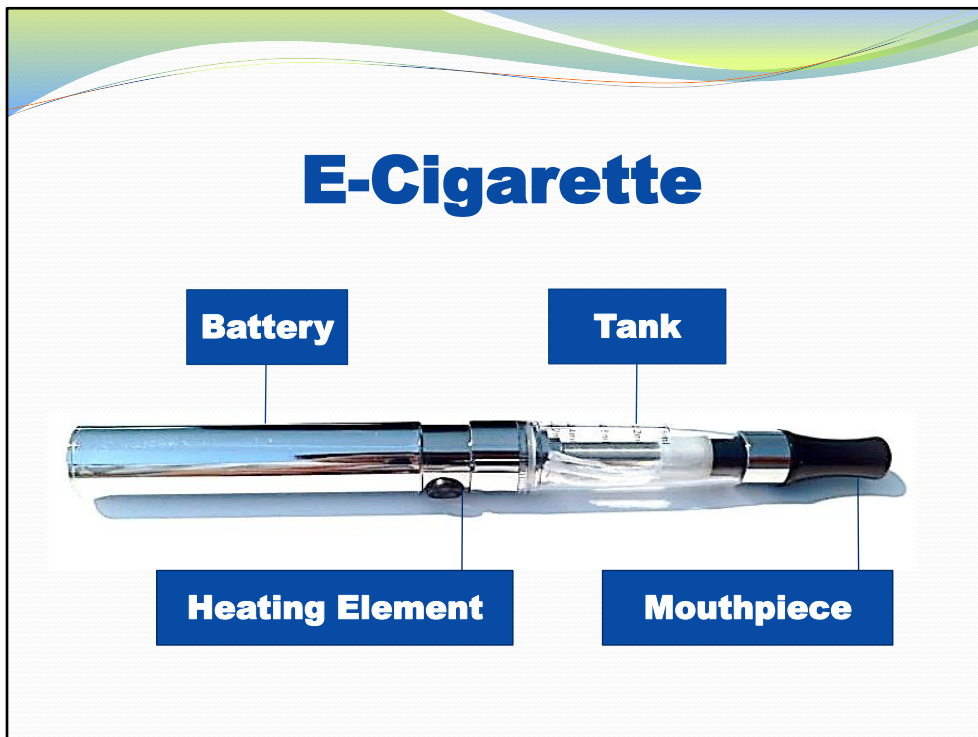
Vaping devices are available in many shapes and sizes. Some are small and look like USB drives (e.g., JUUL) or pens, while others are much larger.

There are two types of vaping devices:

- open, which means they can be refilled;
- closed, which means either the whole product, or the part that holds the vaping substances, cannot be refilled (single –use cartridge).

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>

Image source: PowerPoint Clipart



The vaping liquid, which contains chemicals, is heated to become an aerosol. The aerosol is inhaled through the mouth and lungs where it is absorbed into the bloodstream. The remaining aerosol is exhaled.

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>

Image source: PowerPoint Clipart

E-Cigarette

Most vaping substances:

- are liquids
- are flavoured
- contain nicotine



In vaping liquids, nicotine and/or flavouring ingredients are dissolved in a liquid mixture. This mixture is typically made up of propylene glycol and/or glycerol (vegetable glycerin) and other chemicals. Flavouring ingredients include chemicals and blends of chemicals used to make different flavours.

The number of chemical ingredients used in vaping liquids varies. Between 2017-2019, researchers at Health Canada detected an average of 22 chemicals and roughly nine flavouring chemicals in Canadian vaping products. Additional chemicals can also form when vaping liquids are heated (through the aerosolization process) or if liquids come into contact with parts of the vaping device (e.g., coil).

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html>

Image source: PowerPoint Clipart



There are health risks linked to other chemicals found in vaping products.

The vaping process needs the liquid to be heated. This can create new **chemicals**, such as formaldehyde (a colorless gas found in paints, detergents and glues). Some contaminants (e.g. **heavy metals** such as nickel, tin and aluminum) might also get into the vaping products and then into the vapour.

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html>

Diacetyl is a flavouring chemical used to give butter-like and other flavours to food products as well as vaping products.

The chemicals used to flavour vaping products have not been tested for safety when inhaled.

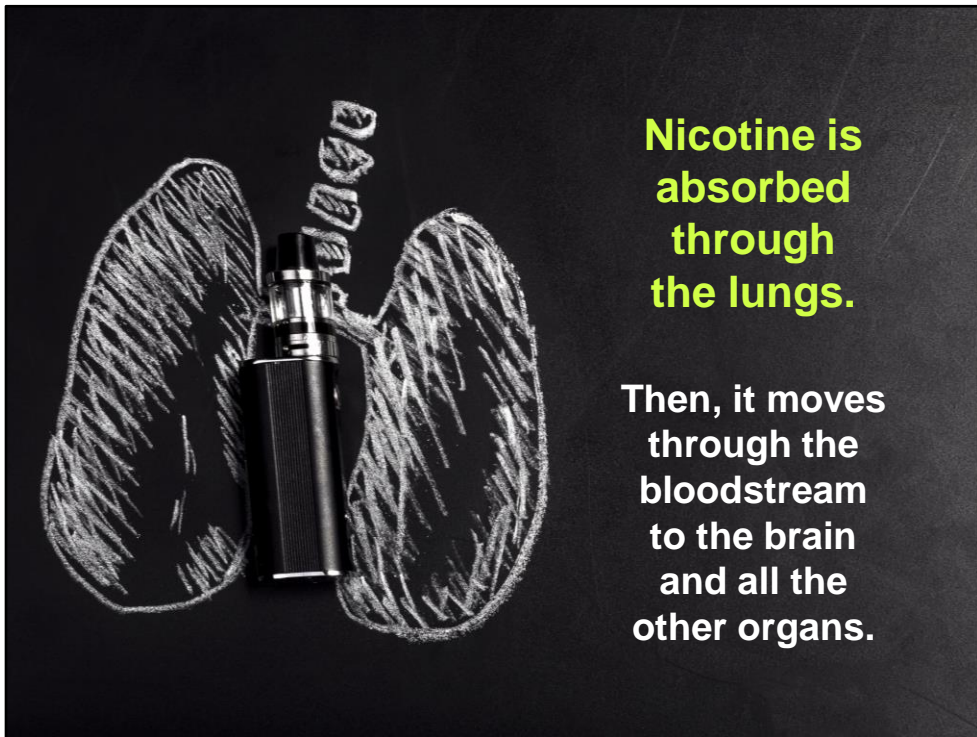
<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html>

<https://www.cdc.gov/tobacco/infographics/youth/pdfs/e-cigarettes-usb-flash-508.pdf>

It is hard to know what is contained in e-cigarette products. For example, it was discovered that some e-cigarettes that claim 0% **nicotine** still contain it.

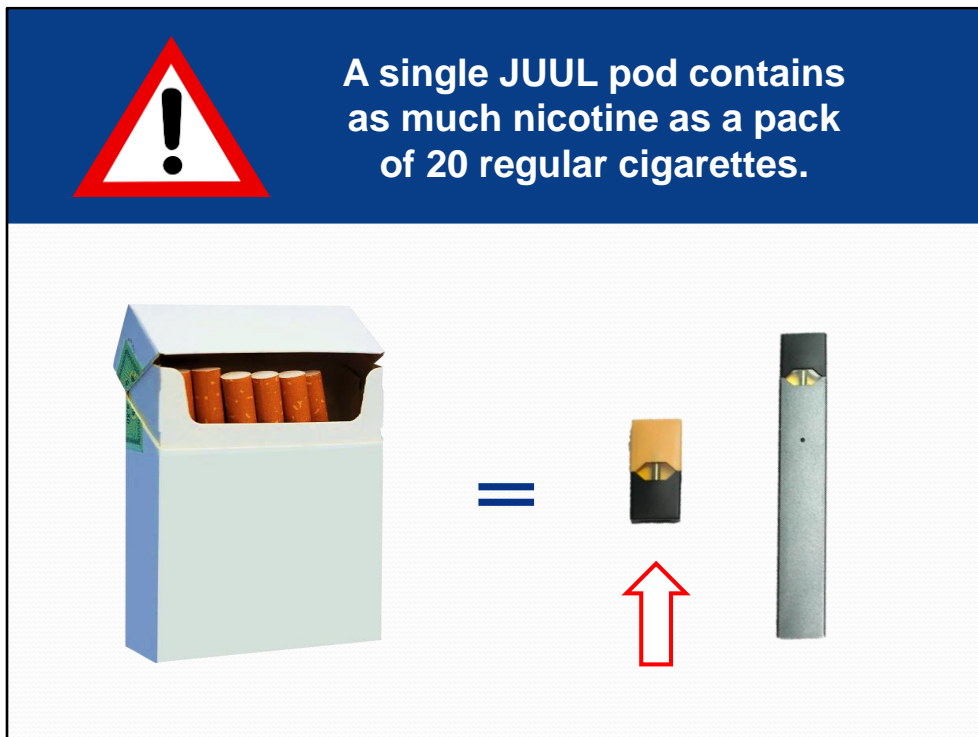
https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html#two

Image sources: Pixabay and PowerPoint Clipart



<https://www.canada.ca/en/health-canada/services/smoking-tobacco/effects-smoking/smoking-your-body/nicotine-addiction.html>

Image source: Adobe Stock (purchase)



In vaping substances that contain nicotine, the level of nicotine can vary widely.

Some mixtures with very low levels of nicotine can contain more nicotine than a regular cigarette (e.g., the JUUL).

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>

<https://www.cdc.gov/tobacco/infographics/youth/pdfs/e-cigarettes-usb-flash-508.pdf>

Image sources: Clipart PowerPoint, Adobe Stock (purchase) and Pixabay

Nicotine Salts



Causes less irritation in the throat, which allows larger amounts of nicotine to be inhaled

DANGER

Inhalation of high concentrations of nicotine

Nicotine salts in JUUL e-cigarettes

Nicotine salt formulations are a relatively recent innovation.

<https://www.canada.ca/content/dam/hc-sc/documents/programs/consultation-reducing-youth-access-appeal-vaping-products-potential-regulatory-measures/consultation-reducing-youth-access-appeal-vaping-products-potential-regulatory-measures-eng.pdf>

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>

Image source: PowerPoint Clipart



Image source: Pixabay

Some people use the e-cigarettes to inhale active ingredients other than nicotine, including tetrahydrocannabinol (THC), hashish oils, amphetamines, and synthetic cannabinoids.

<https://www.merckmanuals.com/en-ca/professional/special-subjects/illicit-drugs-and-intoxicants/vaping>
<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html>



**Test your
Knowledge!**

True or false?

**E-cigarette use is on the rise
among young people.**

True



Answer:

True

Vaping is not risk-free, but teens are starting to vape anyway. It is a major issue given the significant rise in teen use in recent years.

<https://avoidthetrap.ca/>

Image source: Pixabay

True or false?

The addition of flavouring
to e-cigarette liquid
is harmless.



Image source: Pixabay



False

**The chemicals used to
flavour vaping products
pose health risks.**

**The liquid used may contain
nicotine, regardless of the flavour.**

Answer:

False

The chemicals used to flavour vaping products pose health risks.

The liquid used may contain nicotine, regardless of the flavour.

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html>

Image source: Pixabay

True or false?

**E-cigarettes only
produce water vapour.**



Image source: Pixabay



False

In general, e-cigarettes contain propylene glycol, glycerol, concentrated flavours, nicotine and many other chemical compounds.

Answer:

False

In general, e-cigarettes contain propylene glycol, glycerol, concentrated flavours and nicotine. There are also many other chemical compounds in the cartridges, in the solution and in the aerosol.

<https://avoidthetrap.ca/>

Image source: Pixabay

Multiple choice

What chemical substances can be found in vaping products ?

- a. Formaldehyde (colourless gas found in paints, detergents and glues)
- b. Heavy metals (nickel, tin and aluminum)
- c. Diacetyl (chemical flavouring)
- d. All of the above



Answer:

d. All of the above

Vaping products contain chemicals that are harmful to your health.

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping/risks.html>

Image source: Pixabay

True or false?

An e-cigarette may contain more nicotine than a regular cigarette.

True



Answer:

True

For example, in the JUUL, the nicotine content can be equivalent to 20 regular cigarettes. This carries risks, so you need to be **careful!**

<https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>

Image source: Pixabay



We suggest that you engage in a dialogue on the topics covered in this module and to encourage students to actively participate in group discussions.

Image source: Pixabay