Technology Education Key Learning Area: Information and Communication Technology
Curriculum Framework of National Security Education (2025)

Introduction

This Curriculum Framework[1] illustrates in tabular form how learning in Information and Communication Technology can be connected to related learning elements of national security education to facilitate the planning of the learning content of national security education in schools. Schools should integrate national security education into the curriculum planning and learning and teaching of this subject through "organic integration", "natural connection", "diversified strategies", "mutual coordination", "learning within and beyond the classroom" and "whole-school participation". In addition, schools should also refer to the *Curriculum Framework of National Security Education in Hong Kong (2025)* and other relevant curriculum documents to implement national security education more effectively.

1. Overall Teaching Foci

1.1 Information and Communication Technology (ICT) is the technology required for information processing, i.e. for the creation, manipulation, storage, retrieval and communication of information. They are of immense value in a world in which there is an "information explosion", and where knowledge is complex, ever-changing and cross-disciplinary in nature.

1.2 "Social Implications" and "Internet and its Applications" are compulsory parts of the senior secondary ICT curriculum. "Social Implications" provides students with an understanding and ethical analysis of various issues arising from the use of ICT. These issues have economic, legal, social, ethical and security consequences. "Internet and its Applications" encompasses the concepts of Internet access, services and applications of the Internet. Students are also required to critically analyse the reliability of the

[1] The content of this framework is set out in the form of examples. Schools should adopt or adapt the relevant suggestions based on students' learning needs and abilities.

information retrieved from the Internet and understand the impact of the Internet on various activities in society. This allows them to use ICT effectively and ethically and understand the importance of data security, cybersecurity, artificial intelligence security, and technology security from the perspective of a responsible Internet user.

1.3 Through the learning activities of this subject, students can gain a more comprehensive understanding of the importance of data security and cybersecurity. This includes learning to discern the authenticity of information and recognising the consequences of spreading false information. This will help them develop information literacy skills and become law-abiding and responsible citizens. In addition, teachers will raise students' awareness of data security and cybersecurity through discussions on online transactions.

2. Learning Foci

Technology Education Key Learning Area: Information and Communication Technology [Key Stage 4 (Senior Secondary)]		**Curriculum Framework of National Security Education in Hong Kong (2025)**
Learning Areas (Examples)	**Learning Elements (Examples)**	**Related Learning Elements / Major Fields of National Security (Examples)**
Module C: Internet and its Applications Threats and Security on the Internet	• Describe the potential risks caused by the common network security threats ➢ Students should propose effective measures to improve cybersecurity, discuss potential privacy threats online and suggest ways to protect privacy • Be aware of information encryption technologies so as to prevent eavesdropping and interception ➢ Students should understand how to use authentication and authorisation procedures to control access to online data, understand the security measures used in electronic transactions and recognise the latest developments in security	• 4.9 Have a deeper understanding of the importance of the science and innovation and technology industries in our country and Hong Kong in safeguarding national security and promoting sustainable development • Related major fields of national security: Data Security, Cybersecurity

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Learning Areas (Examples)	**Learning Elements (Examples)**	**Related Learning Elements / Major Fields of National Security (Examples)**
	measures	
Module E: Social Implications Technological Innovations	• Understand the basic concepts of technological innovations and its applications ➢ Study pattern recognition through artificial intelligence (AI) and data science, 3D printing technologies, augmented reality (AR) and virtual reality (VR) and understand the developments and achievements in AI (including generative AI) of our country	• 4.5 Further understand and care about the achievements of our country in various aspects (e.g. society, economy, national defence, environment, diplomacy, technology, healthcare, transportation and infrastructure), and have pride in our country's achievements • Related major field of national security: Artificial Intelligence Security

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Learning Areas (Examples)	**Learning Elements (Examples)**	**Related Learning Elements / Major Fields of National Security (Examples)**
Module E: Social Implications Health and Ethical Issues	• Realise the importance of equity of access • Discuss the ethical considerations on the use of ICT ➢ Students should state the pros and cons of freedom of information on the Internet. They should also know equity issues in terms of the digital divide, gender equity and access for the disabled from local and global perspectives	• 4.8 Further understand the challenges and opportunities faced by our country in the process of development, thereby strengthening the sense of vigilance against potential danger in times of peace • Related major fields of national security: Data Security, Cybersecurity
Module E: Social Implications Intellectual Property	• Understand the basic ideas of intellectual property and copyright ➢ Understand the benefits and risks of different licensing schemes such as freeware, shareware,	• 4.8 Further understand the challenges and opportunities faced by our country in the process of development, thereby strengthening

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Learning Areas (Examples)	**Learning Elements (Examples)**	**Related Learning Elements / Major Fields of National Security (Examples)**
	open source software and copyrighted software from the perspectives of users and software developers • Relate acts of possible infringement of copyright in software and Internet piracy ➢ Students should recognise ways to reduce intellectual property theft on digital property and understand the legal consequences, especially in education, related to the infringement of copyright in Hong Kong ➢ Students should value information literacy and the effective use of ICT, be able to share knowledge and understand how they influence people's decisions and shape our society. This will foster society. They should develop responsible and proper attitudes	the sense of vigilance against potential danger in times of peace • 4.19 Learn about the potential security risks that people in our country and even the world may face in the fields of society, morality, economy, environment, science and technology, etc.; and be able to make wise decisions and judgments on relevant issues that are in line with the national interests • Related major fields of national security: Science and Technology Security, Cybersecurity

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Learning Areas (Examples)	**Learning Elements (Examples)**	**Related Learning Elements / Major Fields of National Security (Examples)**
	towards the use of ICT • In recent years, AI has developed rapidly, and competition is fierce. Students should understand the development of AI tools in our country and understand the importance of safeguarding our country's technological development achievements. This protects national development interests and also prevents our country's technological development from being controlled by others	

3. Suggested Learning and Teaching Activities (Examples) (Senior Secondary)

The following are merely examples. Teachers can design appropriate activities based on their school context and subject characteristics to promote national security education.

✧ **Classroom learning**

- [Information authenticity] In groups, students will research online information assigned by the teacher, discuss different methods for verifying and demonstrating the authenticity of the information and assess the impact of the miscommunication of the information on society
- [Online transaction security] In groups, students will research how to safeguard security and identity authentication when users conduct transactions using online banking accounts, as well as the roles of various stakeholders (e.g., users, the government, banks, and Internet service providers) in safeguarding cybersecurity
  - ➢ Design appropriate self-learning activities that are aligned with the curriculum objectives to help students understand our country's focus and emphasis on science and technology security issues
  - ➢ Observe the information displayed by the browser to determine the security of the webpage and its information
  - ➢ For example, after entering the URL www.aaa.bbb.ccc in a browser, we can observe the browser:
    1. The URL starts with https, i.e., https://www.aaa.bbb.ccc... This indicates that this webpage is secure
    2. We can observe the symbols to the left or right of the URL to determine the website's security status:
       - Secure
       - Info may not be secure
       - Not secure or dangerous

- If the bbb part of the URL is gov, this indicates that the website is a government website and the information on the page is reliable

- [Intellectual property topic] Students will work together in groups to debate the benefits and risks of different licensing schemes such as freeware, shareware, open source software and copyrighted software from the perspectives of users and software developers. This will deepen their understanding of the topic, help them develop proper values and attitudes towards intellectual property and copyright, so as to prevent intellectual property theft and infringement involving digital property

✧ **Extended learning activities**

- [Consequences of spreading false information] Teachers and students will read and analyse real-life cases of spreading false information in newspapers to help students understand that those who spread false information online may be held criminally liable. Students should exercise caution in their online behaviour and be responsible netizens
- [Understanding Innovation and Technology Enterprises] Arrange for students to visit technology parks and enterprises in Hong Kong and the Mainland to learn about various innovative technology industries and our country's achievements in technological development

Disclaimer:

- *In case of any discrepancy in the meaning of wording between the English text and the Chinese text, the Chinese text shall prevail.*