مَنَاهِج **الأَمْن السِّيبْرَانِيّ** التَّعْلِيمِيَّة

Cyber Security Curricula Education

Trainer Guidebook

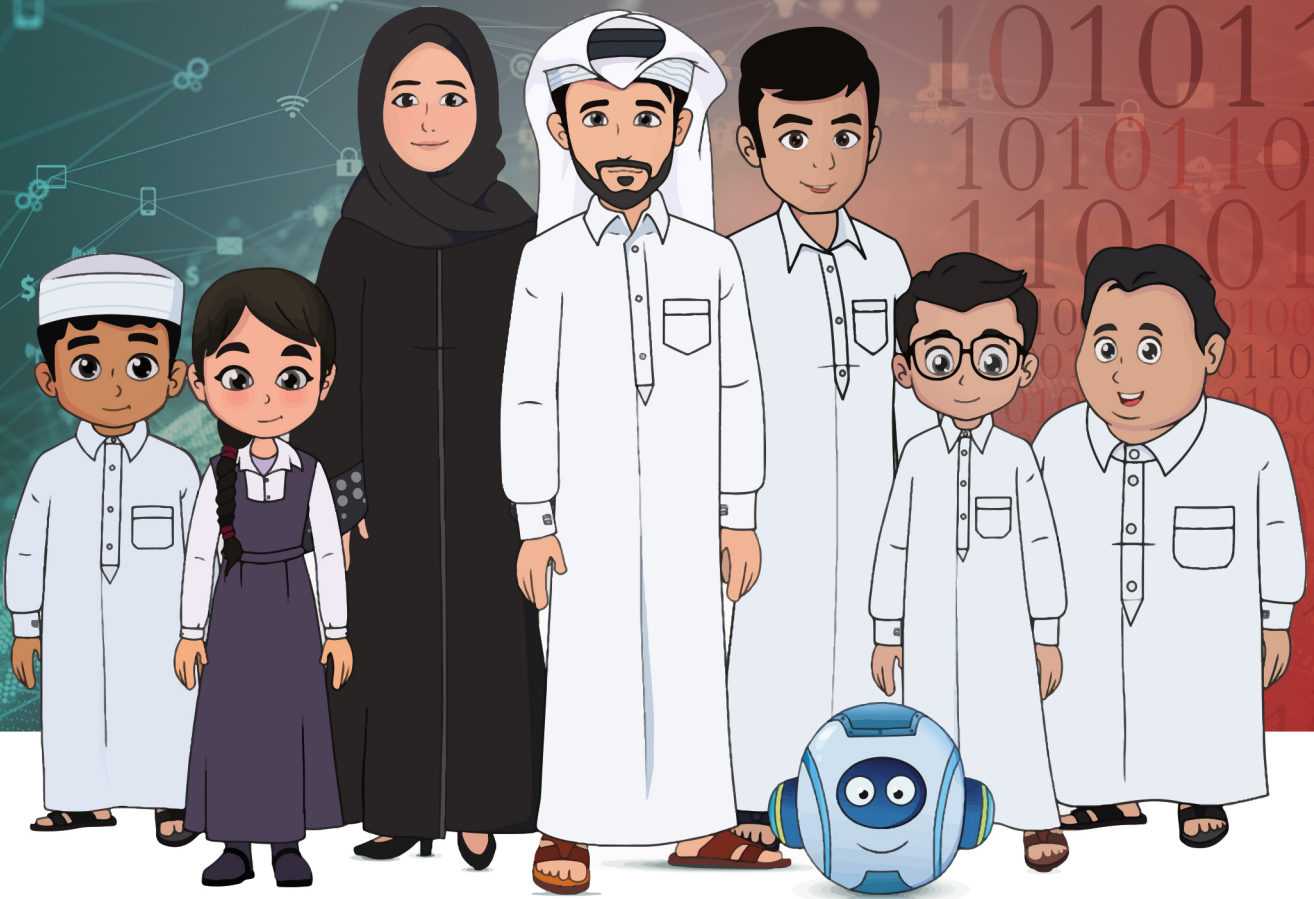**مَنَاهِج الأَمْن السِّيبْرانيّ التّعْليميّة**
Cyber Security Curricula Education

Cybersecurity experts at the National Agency for Cybersecurity, represented by the Department of National Cyber Excellence, Empowerment Affairs and National Cyber Excellence Sector, in partnership with a group of specialists in the Ministry of Education and Higher Education from the divisions concerned with this aspect, which is represented by the Department of E-Learning and Digital Solutions, the Department of Educational Guidance Department of Information Technology, Department of Curricula and Learning Resources, Department of School Affairs, Department of Programs and Activities, Department of Special Education and Inclusive Education.

To contact

الوكالة الوطنية للأمن السيبراني
National Cyber Security Agency

🌐 https://www.ncsa.gov.qa/
✉ cyberexcellence@ncsa.gov.qa

▯ 00974 404 663 79
▯ 00974 404 663 63

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The first axis

An introductory overview of
Cybersecurity Education Curriculum

Based on the endeavors of the National Agency for Cybersecurity in the State of Qatar to build a digitally secure and technologically empowered local community, and in light of the successive and rapid technological developments, and the entry of technology into various aspects of life, including different age groups, the technological security risks facing individuals in general and children and adolescents, in particular, are increasing. Therefore, based on the general objectives of the National Agency for Cybersecurity, facing these challenges is by addressing children and adolescents, within the framework of the school environment, with curricula that enhance awareness of digital safety and the concepts and foundations of Cybersecurity.

Based on this proposal, the goal of the "Educational Cybersecurity Curricula" project is to educate children and adolescents in the State of Qatar about the various concepts and foundations related to digital safety and Cybersecurity. It is based on the importance of protecting personal data and information and a desire to educate society about Cybersecurity. This project is sponsored by the National Agency for Cybersecurity in the State of Qatar, it is the first project of its kind in the region, a project that aims to raise digital awareness among all age groups, starting from the first grade of elementary school to the twelfth grade of high school, as well as university students, Adult Education programs, and the educational staff and parents. It also provides permanent interactive awareness content that can be accessed through the Qatar Education System.

The "Educational Cybersecurity Curricula" project, in collaboration with the Ministry of Education and Higher Education, aims to achieve several objectives, the most important of which is to educate society in general, and children and adolescents in particular, about the concept of Digital Citizenship. Digital Citizenship entails the responsible, moral, and safe use of information and communication technology by individuals as part of both their local and global communities.

In addition to educating society in general, and children and adolescents in particular, about the risks of the Internet, whilst training them on the basics of protecting personal data and maintaining the safety of electronic devices. In addition to raising their awareness of general concepts related to Cybersecurity and digital safety, and equip the young generation of Qatari youth with the ability to efficiently and safely deal with technological tools.

To accomplish its goals, the project employs a variety of educational tools, all within the framework of raising awareness about the importance of cybersecurity. This awareness contributes to achieving both the project's and the National Agency for Cybersecurity's goals of protecting society from internet risks, data security breaches, and privacy violations. The training tools include a guide for trainers, as well as educational visual products, posters, and infographic designs.

The millions of people who use the World Wide Web, including people of all ages and for a variety of purposes, have unprecedented opportunities for human communication and the exchange of information, ideas, and opinions thanks to the current digital revolution. Naturally, the rise in perilous opportunities for all human endeavors reflected this unprecedented advancement. Where a new threat to users emerged, with some of them able to hack into information networks and alter any kind of data. Cybercrime is the practice of causing harm to users in a variety of ways through personal, official, and financial harm.

Many developed nations tended to implement targeted initiatives to provide technological security for all Internet users, mainly to young school and university students, who use the Internet the most, in consideration of the seriousness of this matter and the material, economic, social, and mainly humanitarian losses caused by these crimes.

Among these efforts are The European framework for the safe use of mobile devices and the initiative by the European Union to establish guidelines for the secure use of information networks In 24 European nations, Cybersecurity concepts were incorporated into school curricula in 2009.

The National Alliance for Cybersecurity was established, and the Department of Homeland Security assumed responsibility for raising cybersecurity awareness in the United States. The Department of Homeland Security, the National Institute of Standards and Technology, and institutions working in the field of cybersecurity collaborated with the U.S. government to launch the National Initiative for Cybersecurity Education at the educational level.
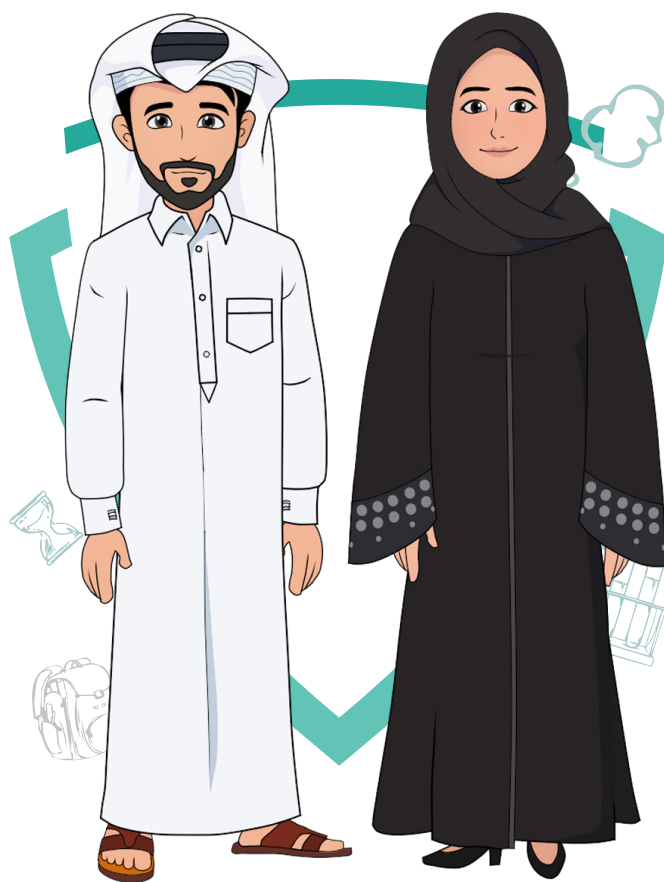
We acknowledge that similar cybersecurity measures exist in Arab nations. However, many of these nations face challenges stemming from the lack of a comprehensive initiative that encompasses all groups, including schoolchildren, university students, adult education programs, trainers, and parents. Furthermore, inadequate support and educational initiatives struggle to keep pace with the evolving landscape of communications and information technology. This has been reflected in declining cybersecurity awareness and increased rates of cyberattacks and related crimes against internet users in these countries compared to others.

Among the most significant and successful experiences in this field, the Ministry of Education and Higher Education in the State of Qatar's experience creating digital educational content that is "interactive"; Its goal is to make students, Trainers, and parents more aware of digital technology. And educating them about the most recent developments and challenges in Cybersecurity both locally and globally and making content permanently accessible through the Qatar Education System.

An overview of the project

To achieve the project's intended impact and the stated objectives effectively and efficiently; The "Cybersecurity Education Curriculum" project has a unique mix of educational curricula for each age group, so the educational content varies by age. As the desired effectiveness necessitates addressing each age stage with educational content that increases in level with age. Based on this principle, the curricula were divided into three main sections, according to the educational stages approved in the State of Qatar, which are the elementary, middle, and high school stages, and even at the level of one stage each class was addressed with different educational content.

This content incorporates the creation of interactive digital instructional educational curricula, instructive visual content, and an electronic procedural and informative aide for overseeing and utilizing the content. In addition to an infographic that provides a summary of the information, there is a guide for trainers and parents that covers all computing and information technology curricula at all school levels, as well as a table of evaluation questions for students. The following is an overview of the curricula according to the educational stages approved in the State of Qatar.

During the three elementary, middle, and high school stages of the "Cybersecurity Education Curricula" project, the educational content adopted is considered integrated, which applies to Adult Education programs. Because each stage is regarded as a knowledge entry point for the subsequent stage, it is a single curriculum with integrated content. This integration is an important tool in achieving the project's objectives and the desired impact at the community level.

The National Agency for Cybersecurity's Online Platform

Based on the previous objectives, and within the framework of the National Agency for Cybersecurity in the State of Qatar which aims to build a digitally safe local community and with the tremendous technological acceleration and the entry of technology into various aspects of the lives of citizens of all ages, the frequency of risks and threats arising from the use of the Internet has increased. As a result, the National Agency launched a national Cybersecurity strategy to protect Qatari citizens and educate them about the concept of "digital citizenship", which is the responsible, ethical, and safe use of information and communication technology by individuals as members of the local community and global citizens.

This is why the National Agency for Cybersecurity launched a digital platform with interactive content (videos, short animations, infographic designs, and banner posters) as part of its strategy to raise awareness of digital safety concepts, the severity of cyber threats, and how to deal with them. In order to increase the benefit and awareness of the platform among adults and children, it will be made available to the general public for use both within and outside of the State of Qatar.

In addition, as part of the country's Cybersecurity strategy, the National Agency for Cybersecurity is collaborating with the Ministry of Education and Higher Education to implement a project for computer and information technology-related educational Cybersecurity curricula.

The project aims to educate schoolchildren, their parents, and trainers about Cybersecurity and digital safety concepts, as well as the most significant obstacles they might encounter in their daily use of technology. A copy of the agency's interactive content, which is available on its digital platform, will be uploaded to the Ministry's LMS platform as part of this project for viewing by the curriculum project's target audience (students, trainers, and parents).

Qatar education system

After the content was produced in its final form, revised, and reviewed, it was officially approved and uploaded to the (Qatar Education System) to be permanently available to the target audience.

- A brand-new system in use since the academic year 2021-2022

- It depends on numerous advanced systems and artificial intelligence.

- It helps to analyze the academic level of each student, their behavior, and their class activity.

- trainer's performance can be evaluated with the help of the system.

- The system makes it simple for parents and the school to communicate.

Elementary school

The educational curriculum at this stage considers the demographic and psychological characteristics of children, such as being very young and their lack of experience. In line with children's cognitive abilities for this stage, the design is made in a way that aligns with childhood standards, and it focuses on engaging videos and visual content that captivate their interest. The curricula address basic Cybersecurity topics such as ways to protect electronic devices, refraining from sharing personal information with strangers, and creating strong passwords. These topics become more expanded and comprehensive as the children's ages progress. In order to enhance the attractiveness of the materials offered, and their ability to effectively influence children, the curricula introduce lovely cartoon characters inspired by the Qatari environment, such as a cute robot character, to provide information to children through educational films, posters, and infographic designs, in a way that makes children take these characters as their friends, from whom they derive valuable information and knowledge that they are looking for in the field of Cybersecurity.

Middle school

In the curricula for middle school students, educational content was developed in line with the expansion of the child's perceptions, knowledge, and ability of absorption, analysis, and comprehension. The educational content at this stage is complementary to the content in the elementary stage and is based on information related to computing and information technology, how to deal with social networking sites, websites, and other relevant information.

In this stage of the curriculum, new, age-appropriate characters were introduced and created to give the films fun atmosphere and increase suspense and attraction in them.

High school

At this stage, the characters of children and adolescents are approaching maturity and developing the ability to engage in more sophisticated intellectual analysis and interpretation. This has been taken into account in the educational content. The information provided goes into greater depth and includes topics related to cloud computing, how to manage it securely, the fundamentals of file protection, information about electronic attacks, phishing, threats and mitigation strategies, and other relevant topics. All information is presented in an age-appropriate manner, considering the maturity and analytical capabilities of children and adolescents.

Adult Education

To maximize its impact on the project's target community, the National Cybersecurity Agency developed educational materials specifically for adult learners enrolled in education programs. This approach leverages the existing curriculum used across all stages, ensuring adult learners benefit from the same approved content as other groups.

Content for the psychically and mentally challenged

Content has been allocated for mentally and physically challenged people, proportionate to their cognitive abilities, to qualify them and enable them to safely use the Internet and modern electronic devices, taking into account the variety of special needs of these people. This is similar to the content that is intended for students of various age groups. In order to ensure the promotion of the concepts of digital citizenship and the consolidation of Cybersecurity, Cybersecurity Education Curriculum are directed to all groups and segments of society without exception. They also aim to raise a comprehensive level of awareness within the local community.

Educational staff

In light of the fact that achieving the objectives of the program necessitates the assistance of the educational staff, we have provided you, our revered trainers, with this guide, which contains tools to support your perseverance and sincere efforts as well as to enrich your work. As a result, this guide was produced, which contains directive training materials for educational staff in Qatar's governmental and private schools. Throughout the various educational stages, it is believed that the educational staff has a direct and intimate relationship with children and adolescents. Training and qualifying them helps in creating a teaching environment that can efficiently and effectively deliver educational content to students. As a result, a guide for the various educational stages for the teaching staff was developed on the basis of this proposition.

Student's parents

Qualifying and training parents on how to deal with modern technological tools and raising their level of awareness of the concepts of Cybersecurity and digital safety constitute direct support for the project's efforts in building a digitally secure society. The presence of qualified parents regarding the safe use of technology will reflect positively on their children's environment as a whole, and therefore on Qatari society in all its segments.
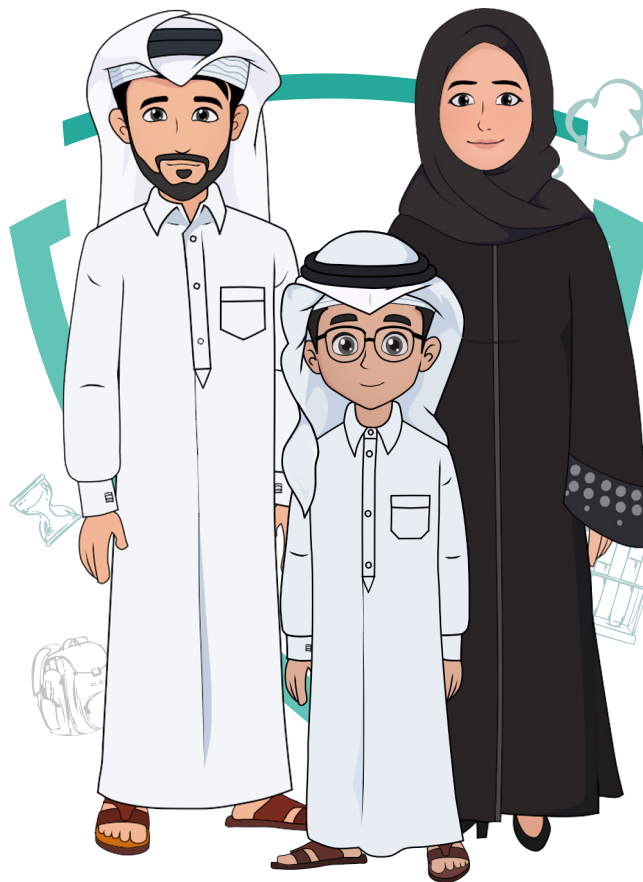
Project work team

The success of the project is linked to the availability of a qualified and experienced work team in preparing educational content, and expertise in concepts related to digital safety and Cybersecurity as well as the basics of e-learning. Therefore, the project relies on a group of consultants and experts in the field of Cybersecurity at the national agency for Cybersecurity.

The National Cyber Excellence Department's team of experts worked with a group of educational experts from the Ministry of Education and Higher Education's departments specializing in this area to prepare the curricula, which include:

- E-learning and digital solutions management.
- Educational guidance management, IT department.
- Management of learning resources and curricula.
- School Affairs Management, Program and Activities Section.
- Management of special education and talent care.

The philosophy of the project team is based on precise specialization, as each task within the framework of the project is assigned to a team of experts so that the foundations of the task intersect with the field of expertise of the work team, as one team specializes in preparing electronic educational content based on the concepts of Cybersecurity and digital safety, another team will specialize in how to deliver educational content to the target audience, while another is specialized with design.Through the integration of the expertise and competencies of the work team, the main objective of the project will be achieved, which is to design educational and teaching curricula capable of enhancing awareness of digital safety and Cybersecurity amongst the targeted community segments.

Starting points of the guide

- Qatar's 2030 vision

- Successful research and experiences in information technology and cyber curricula, both internationally and locally.

- Distinguished Cybersecurity experiences from Qatar.

Trainer Guidebook For
Cybersecurity Education Curriculum
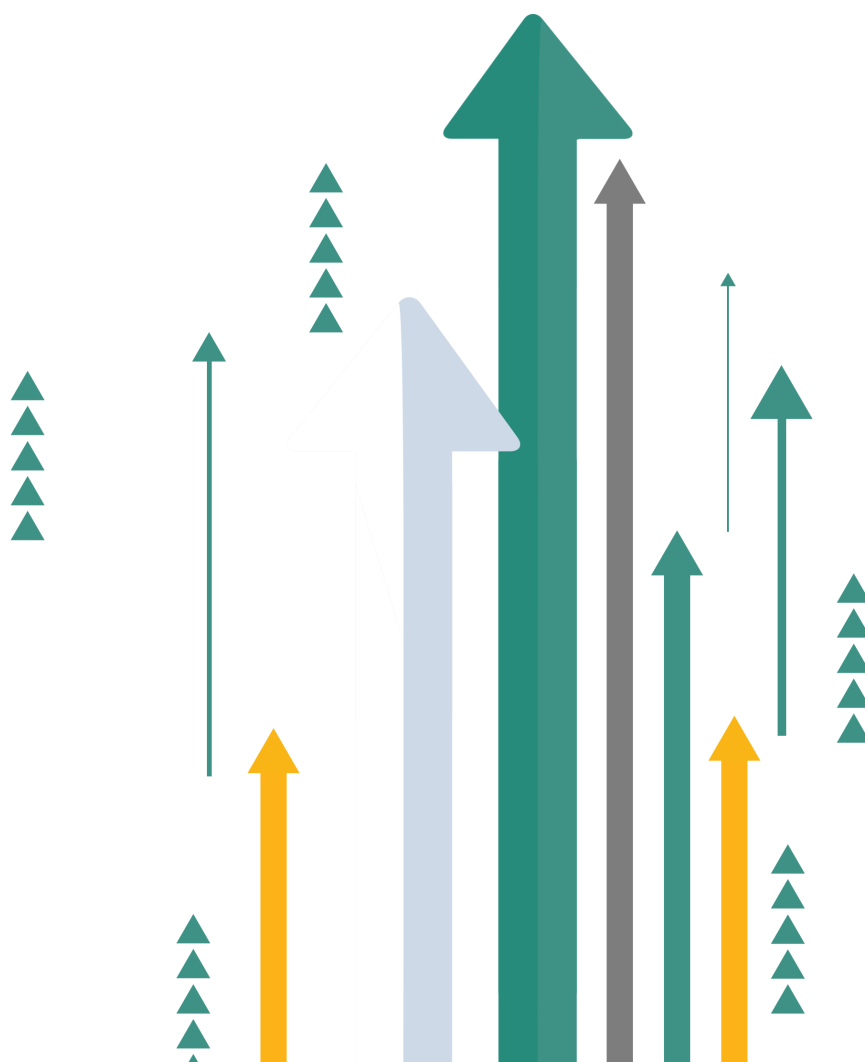
The contribution of the curriculum to the achievement of Qatar's Vision 2030

The Qatar National Vision 2030 is regarded as a road map to transform Qatar into an advanced society capable of sustainable development, with the goal of ensuring that all citizens have access to a high standard of living by 2030.

The aim of the vision is to:

- Identify the long-term outcomes and provide a framework for the development and implementation of national strategies.

- Directing government plans, policies, and strategies, as well as allocating funds and revenues for a common objective.

- Providing a goal and joint direction to private sector businesses and, to some extent, individuals.

Qatar's national vision deals with five major challenges, which are:

- Balance between modernity and preserving traditions

- Fulfilling current needs without jeopardizing future ones.

- Managing growth.

- Keeping the balance between Qataris and foreigners.

- Adequate environmental supervision.

The Qatar National Vision 2030 aspires to bridge the past and present, envisioning a vibrant society that prioritizes economic and social justice, maintains harmony between environment and people, and nurtures a foundation built on strong family ties and respect for core Islamic values.

In accordance with this pioneering concept; The "Cybersecurity Education Curriculum" project proves to be a useful and effective means of providing trainers who are in charge of the next generation with information and an understanding of the significance of Cybersecurity. This generation can receive the knowledge that will safeguard them and guarantee an understanding of the technological challenges and how to make the most benefits of technology without putting themselves in danger.

The State of Qatar is undergoing a complex transformation within the framework of its national vision and aspirations for the future, making Cybersecurity an essential component of its national project. Cybersecurity is one of the most important demands of the future, because of its significance in information technology and digital transformation, which are connected to all of life's aspects. Computer, biological, perception, and social aspects are all studied in communications and information technology, as is the impact of information technology on society.

The Cybersecurity Education Curriculum are linked to communications and information technology, the study and processing of information, exploring weaknesses in protecting data, and finding technological solutions to them, as well as the social and awareness component of the students in their dealings with electronic devices, and various websites.

The most important concepts are as follows:

- Information Lifecycle: Utilizing and discovering information with confidence, autonomy, and safety.

- Information tools: using digital tools creatively, and choosing technology for a specific purpose safely.

- Information Technologies: Purposeful and creative use of a wide range of digital technologies and mastery of work.

- Technological challenges: exploring the risks of the Internet, the challenges of Cybersecurity, and learning how to deal with them in a safe and correct way.

- Achieving harmony between the social and educational aspects, as well as the cognitive and educational aspects, so that students are instructed to preserve the nation's identity and social values, respect the privacy of others and consider social factors when interacting with social networks.
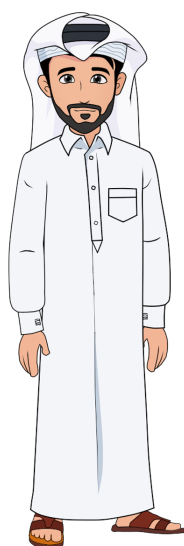
The anticipated outcomes for students of the Cybersecurity Education Curriculum:

- Choosing and using digital tools for their appropriate ends in everyday situations.

- Use digital tools creatively, respond to communication, produce, process, analyze, share, and display information depending on their level of knowledge.

- Install basic computer programs and applications appropriate to their age.

- Use digital tools in a safe and ethical manner.

- Understanding and realizing the challenges of Cybersecurity, and the risks of dealing with the Internet.

- Know how to deal with the problems and risks they might encounter when using the Internet and the various browsing sites.

- Enhancing their technological knowledge and social media management abilities without jeopardizing their social life or family values.
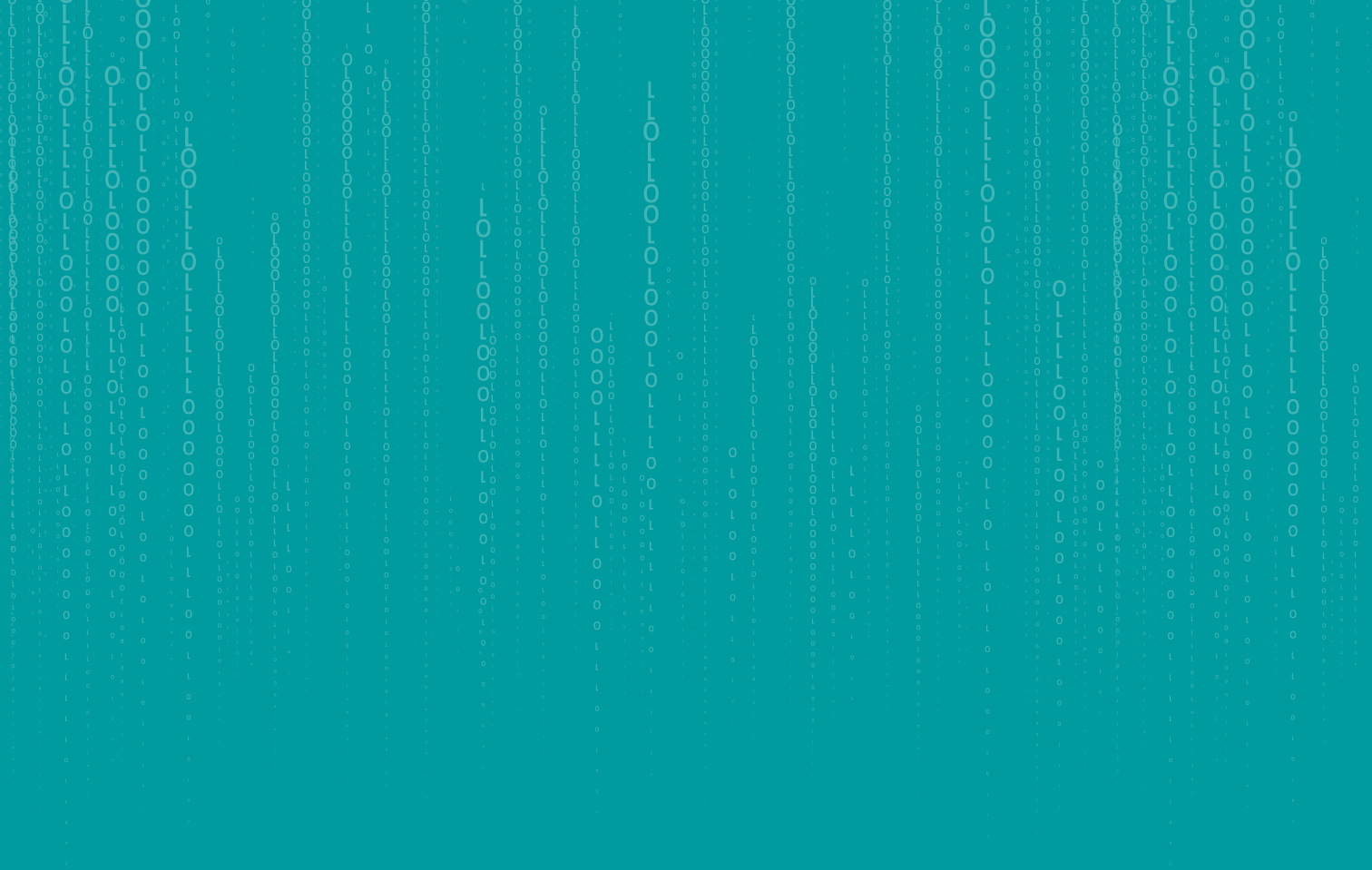
The second axis

Guide policy

The guide concept and importance

The "trainer Guide" provides trainers with a comprehensive set of steps, tips, and instructions to deepen their understanding of the strategy's nature and its role in successful implementation. It empowers them to achieve optimal performance and results from their students.

We also give you this guide to help trainers achieve the program's intended impact by enhancing their knowledge and providing support to the teaching staff. The trainer's guide is a book that goes with the trainer, helps them out, and helps them teach the course. It explains how to teach each lesson and what the student should know at the end of each one.

Dear trainer, you will be able to fulfill your educational responsibilities in accordance with the Ministry of Education and Higher Education's plan by following this guide.

The guide was created with the intention of providing the trainer with strategies as well as cognitive and educational information, making it an essential source of specialized and educational knowledge and data. With the intention of assisting him in the planning and execution of lessons in a distinctive and efficient manner, because the trainer guide places the student at the center of the learning process.

This guide aims to assist trainers in honing students' skills and producing them in accordance with what the educational system expects, which is for students to search for knowledge and then organize and use it effectively. Additionally,

the goal of this is to provide ongoing knowledge, and a variety of scenarios are used to practice problem-solving skills in an organized and complex manner. Additionally, it encourages the student to apply their critical and creative thinking skills to everything they encounters and communicate well with others, evaluate themselves, and hold the trainer in high regard.

In addition, the trainer's guide teaches the trainer how to use various educational tools and evaluation strategies.

The educational staff can use this guide as a storehouse of knowledge, skills, values, and attitudes to help them achieve the project's desired goals and provide students with the knowledge and culture they need to deal with the risks and challenges of Cybersecurity.
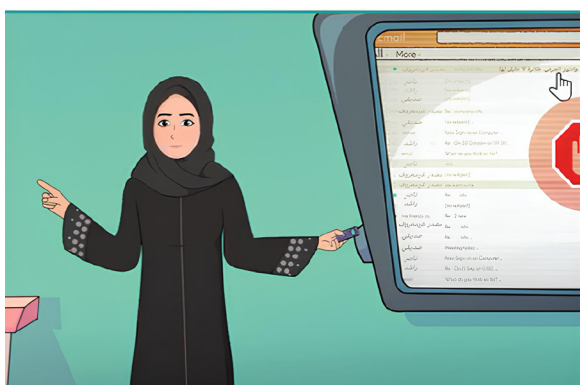
Guide goals

- Educating trainers about the most pressing Cybersecurity issues and the difficulties presented by the digital world.

- Assisting the trainer in giving a distinct and comprehensive presentation of each computing and information technology curriculum.

- Organizing the trainer's responsibilities in relation to their role in delivering interactive educational content to students.

- Creating a set of instructions for the trainer to help them understand the nature of the tasks assigned to them.

- Supplying the trainer with a set of procedures for handling educational visual materials and transferring them to the student.

Guide justification

- The requirement for a guide to assist the trainer in realizing and carrying out the responsibilities associated with managing digital content and directing students towards it.

- Determine the trainer's assigned processes and procedures that will assist them in completing the various tasks in a logical order and with great efficiency.

- Assisting the trainer in comprehending difficult technical issues so that they can communicate them to the students.

- The significance of improving the efficiency with which trainers explain computer and information technology curricula.

- Determining the trainer's responsibilities precisely so that he or she can achieve the highest possible standard of excellence in achieving the objectives set for him or her.

- Assisting the Ministry of Education and Higher Education in its efforts to raise trainer' awareness of Cybersecurity and educational curricula related to it.

Trainer Guidebook For
Cybersecurity Education Curriculum

Expected tasks of the Trainers

This guide defines what trainers should know and be able to do to explain cognitive content in an effective educational and scientific way, so they can keep students' attention and keep them focused while giving them the necessary information and making sure it sticks in their minds.

- Instead of treating the student as a recipient of knowledge, working to reproduce read and written ideas and working in isolation, the trainer needs to approach the student as an independent thinker and explorer who is able to express their point of view, construct proofs, ask questions for understanding, exchange ideas, and collaborate with others to solve problems.

- In the educational process, the trainer serves as a facilitator, supervisor, mentor, and participant. Through discussion and dialogue, they encourage the student to investigate, discover, and reach a conclusion while also assisting the student in comprehending and absorbing information.

- The Cybersecurity curriculum project's central idea, which is to shift from academic subject theory to a variety of contexts and a more enjoyable approach, is the focus of the trainer's efforts.

- The trainer works to transform the educational process from the repetition of information to exploring and searching for solutions, self-discovery, and encouragement of creative talents.

- A preliminary assessment of the student's knowledge, a constructive assessment during the lesson, and a final assessment to determine how the lesson affected the student's knowledge after the lesson

It is necessary to use all resources in a thoughtful and rational manner in order to accomplish this, ensuring that people are built and educated, focusing on the younger generation and providing it with the necessary knowledge tools that contribute to enhancing its awareness and culture and preparing it to be able to respond to the requirements of the future and keep up with the development and progress that the world is experiencing, while at the same time preserving the Qatari people's national identity's core values and principles.

By educating and qualifying the future generation to be ready to face the upcoming challenges and to keep pace with technological advancement without fear of any potential risks, this guide assists the educational staff in contributing to the realization of the national vision of the State of Qatar.

In accordance with this ground-breaking concept, the "Cybersecurity Education Curriculum" project proves to be a useful and efficient means of illustrative instruction for trainers who are in charge of the next generation. It aims to educate students about the significance of Cybersecurity and raise their awareness of it. It is possible to impart knowledge to this generation that will safeguard them, ensure that they comprehend the difficulties posed by technology, and teach them how to make the most of it without putting themselves in danger.

The digital transformation in Qatar is experiencing within the framework of its national vision and aspirations for the future makes Cybersecurity an essential component of its national project. Cybersecurity is one of the most important requirements for the future, because of the significance it brings to the field of information technology and the digital transformation that affects every aspect of life.
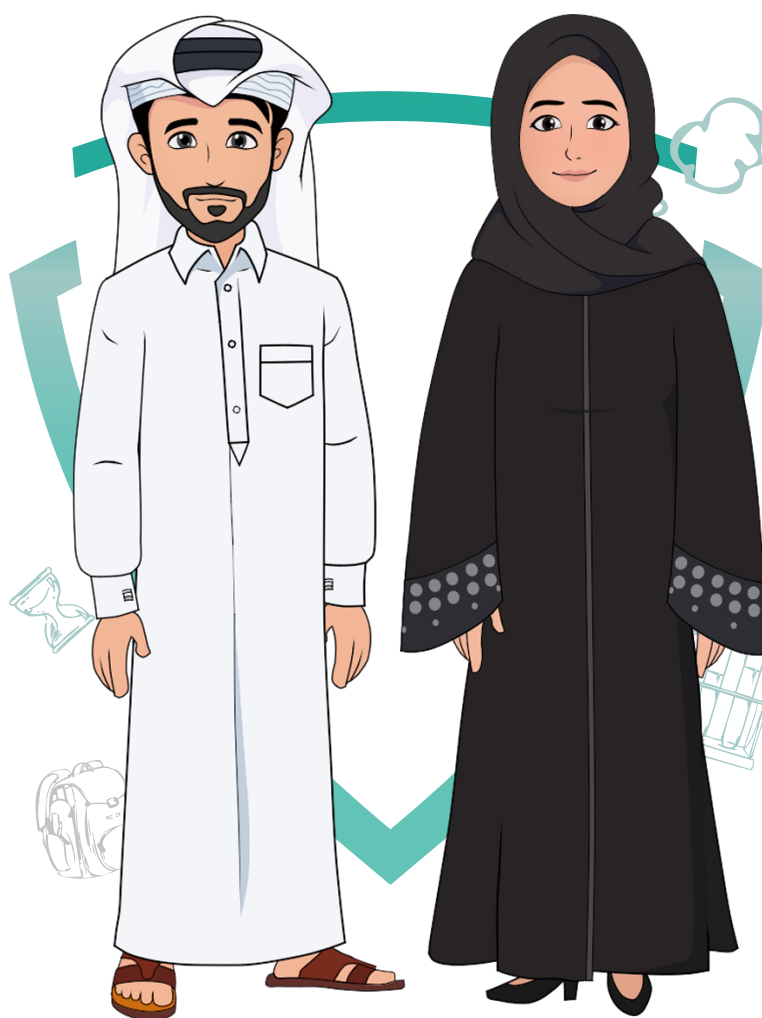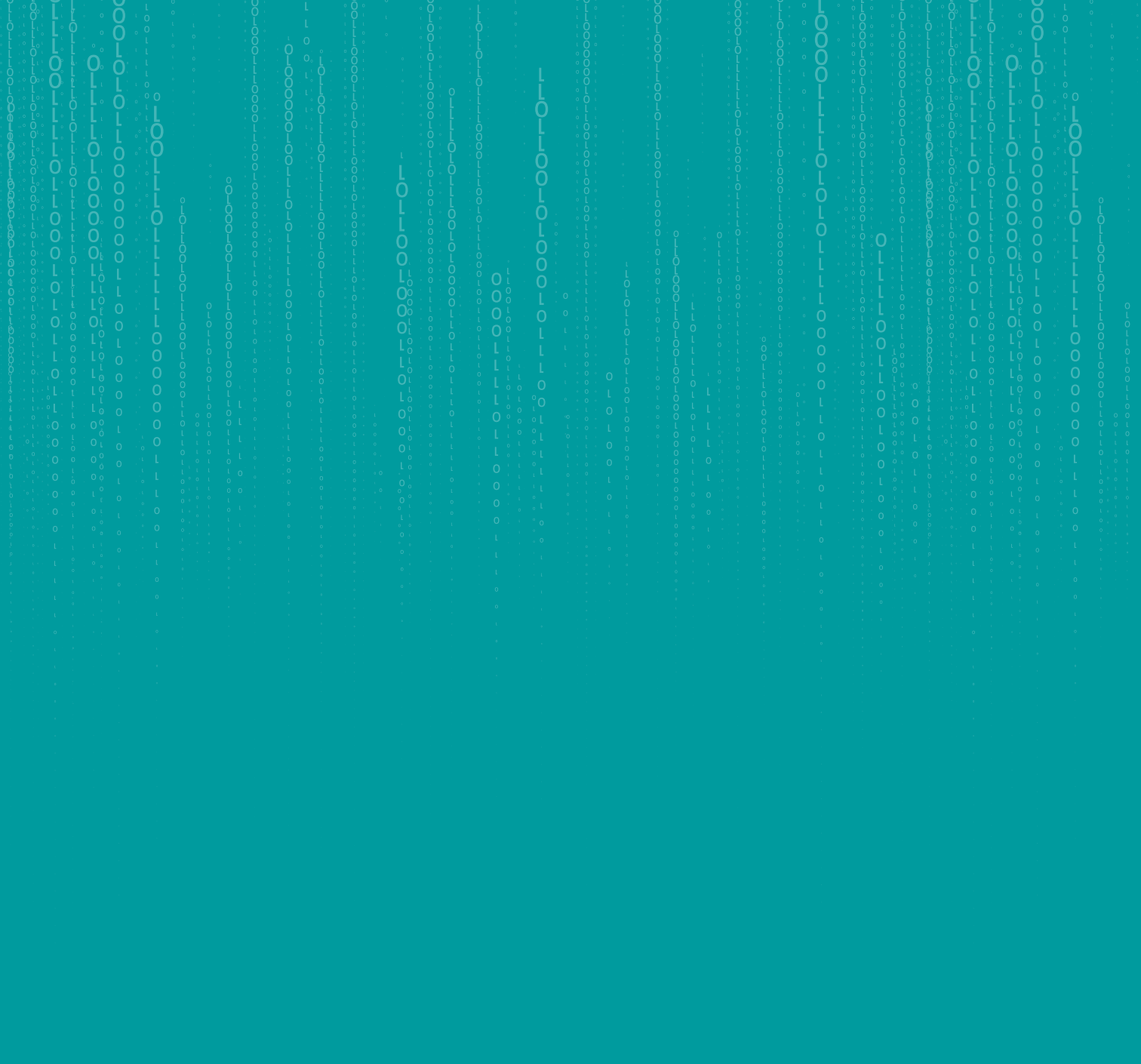
The third axis

The characters and topics of the Cybersecurity Education Curriculum

Firstly: The Characters of the Cybersecurity Education Curriculum

The trainer

The character importance in curricula

A main character who is well-versed in computer technology and delivers knowledge to his students with ease and amusement.

Character appearance setting

School

Stage

Elementary/Middle/ High school
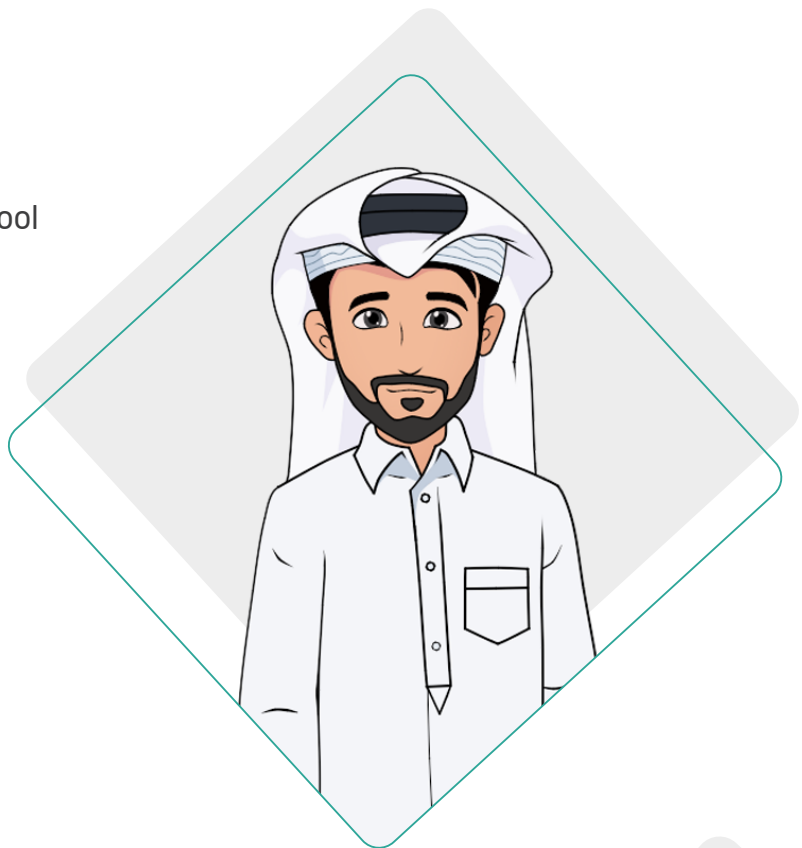
Female trainer

The character importance in curricula

The female trainer sometimes acts on behalf of the male trainer. She is a lovely young woman who loves her students and provides them with information in an easy and enjoyable manner.

Character appearance setting

School

Stage

Elementary/High school

Trainer Guidebook For
Cybersecurity Education Curriculum
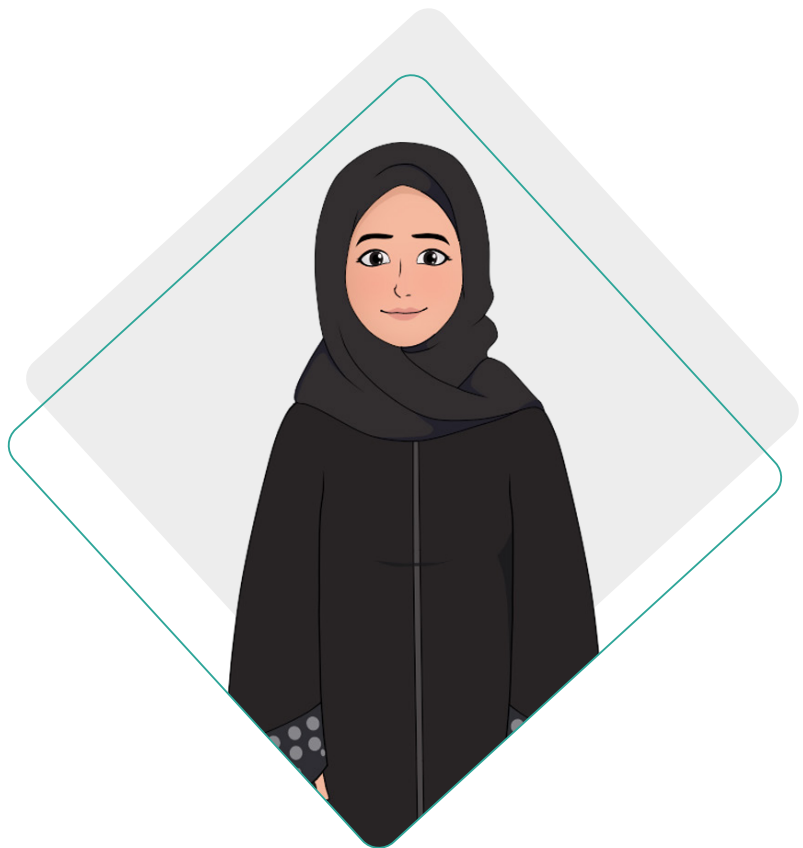
Nasser

The character importance in curricula

A main character who is a diligent, courteous, and serious student who always has a lot of information about lesson topics, and consistently participates.

Character appearance setting

School/ family home

Stage

Elementary/Middle/ High school
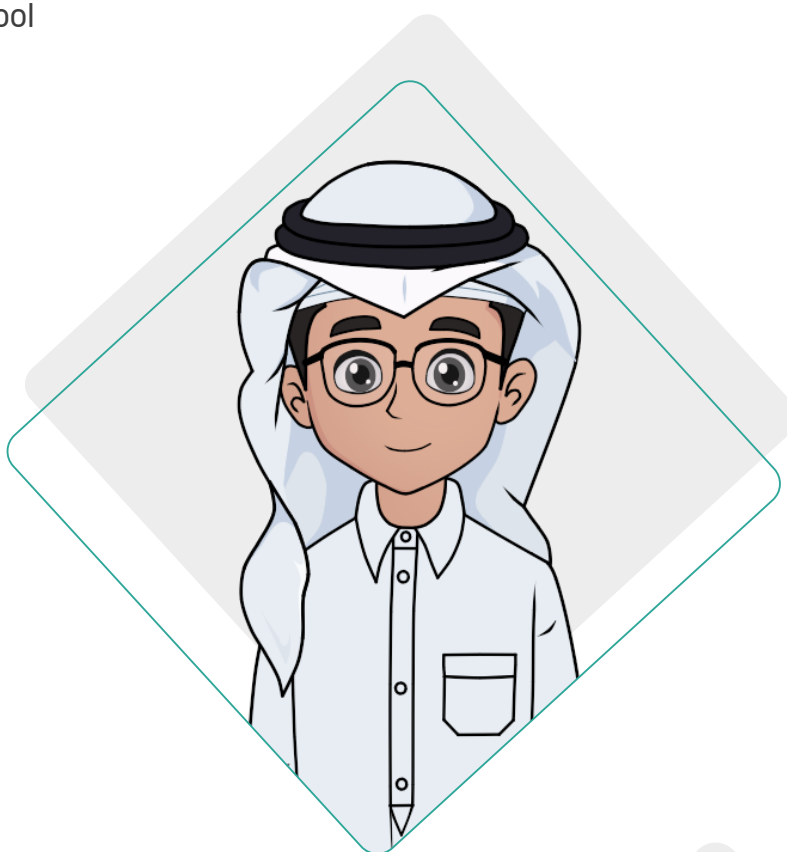
Rashed

The character importance in curricula

A nice and calm student who likes to ask questions and deduce information.

Character appearance setting

School

Stage

Elementary/Middle/ High school

Trainer Guidebook For
Cybersecurity Education Curriculum

Jassim

The character importance in curricula

A cheerful student who loves to create an atmosphere of fun, jokes with his classmates and his Trainer and he is friendly with everyone.

Character appearance setting

School

Stage

Elementary/Middle/ High school
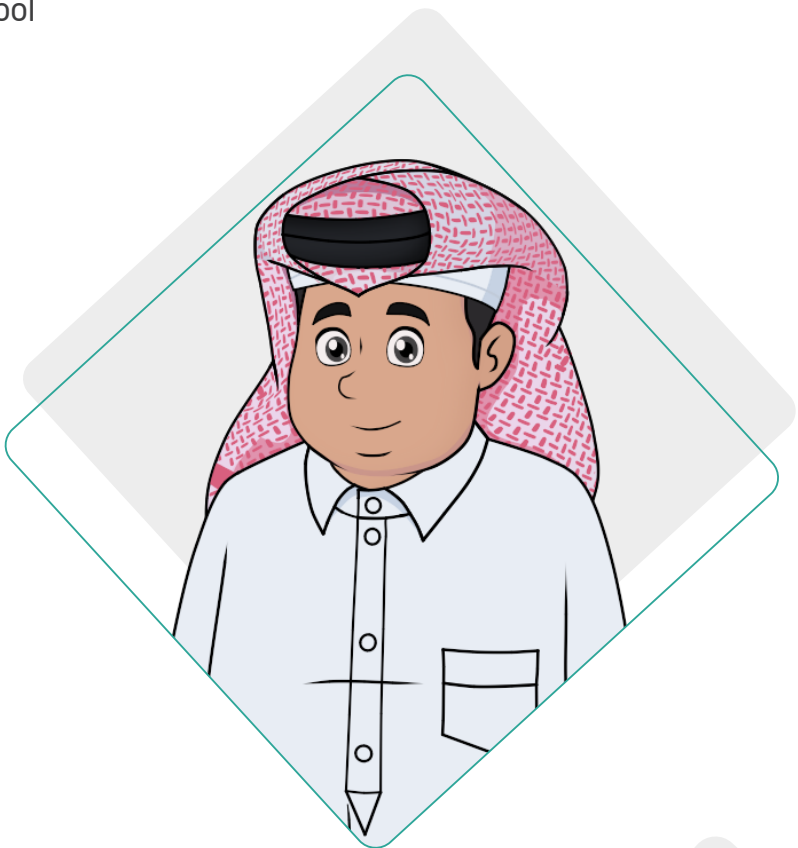
Khaled

The character importance in curricula

He is an intelligent older brother and is a polite, elegant young man who has extensive knowledge about information technology.

Character appearance setting

family home

Stage

Elementary/Middle/ High school
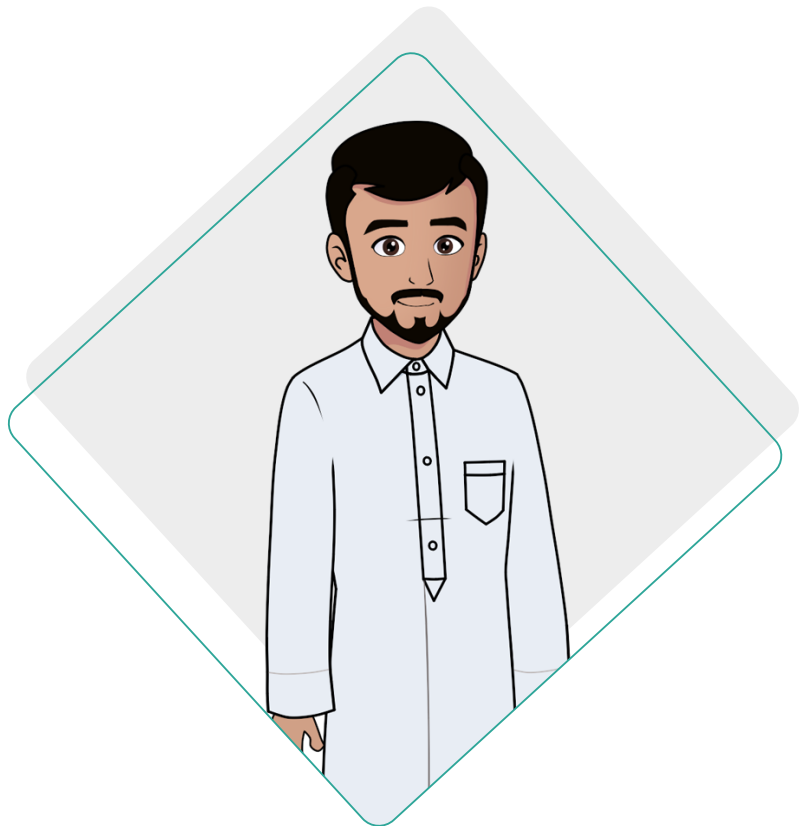
Fatima

The character importance in curricula

A main character who is nice and helpful and a hardworking student who knows a lot about data and network security.

Character appearance setting

family home

Stage

Elementary/Middle/ High school
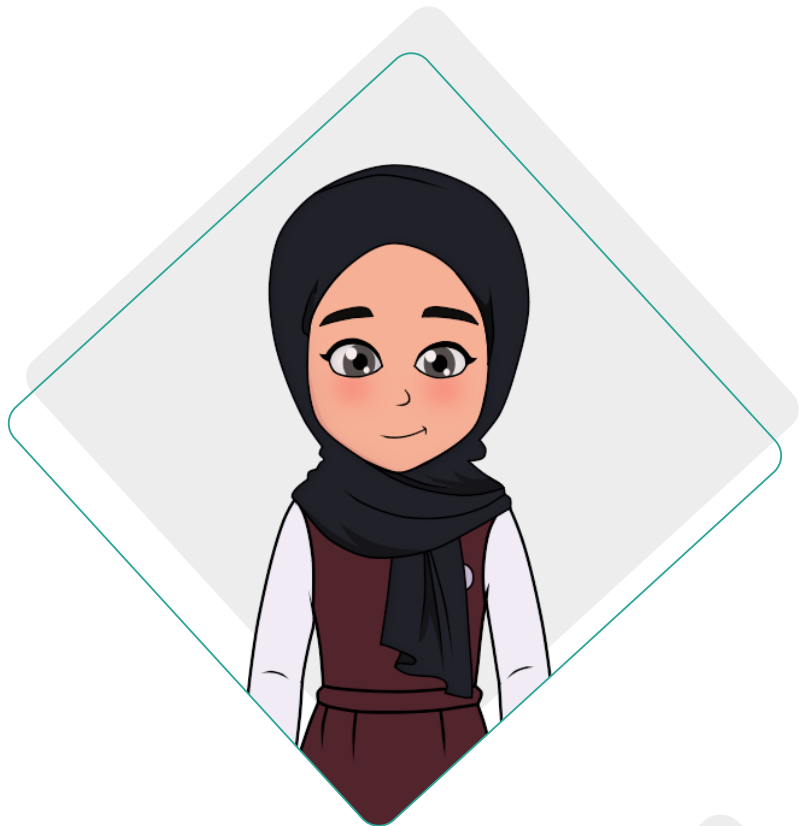
Mohamed

The character importance in curricula

A cheerful child who is interested in learning and asks a lot of questions. He occasionally gets into trouble, but his siblings always help him and correct his mistakes.

Character appearance setting

family home

Stage

Middle/ High school
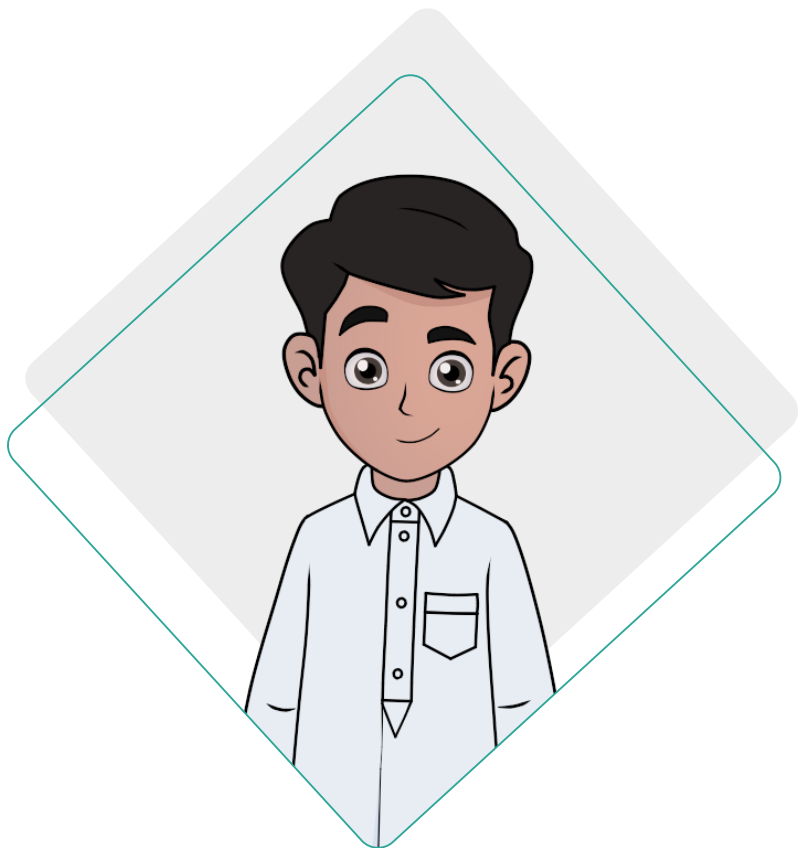
Mariam

The character importance in curricula

A nice and friendly person, diligent in school, and serious.

Character appearance setting

Girl's school
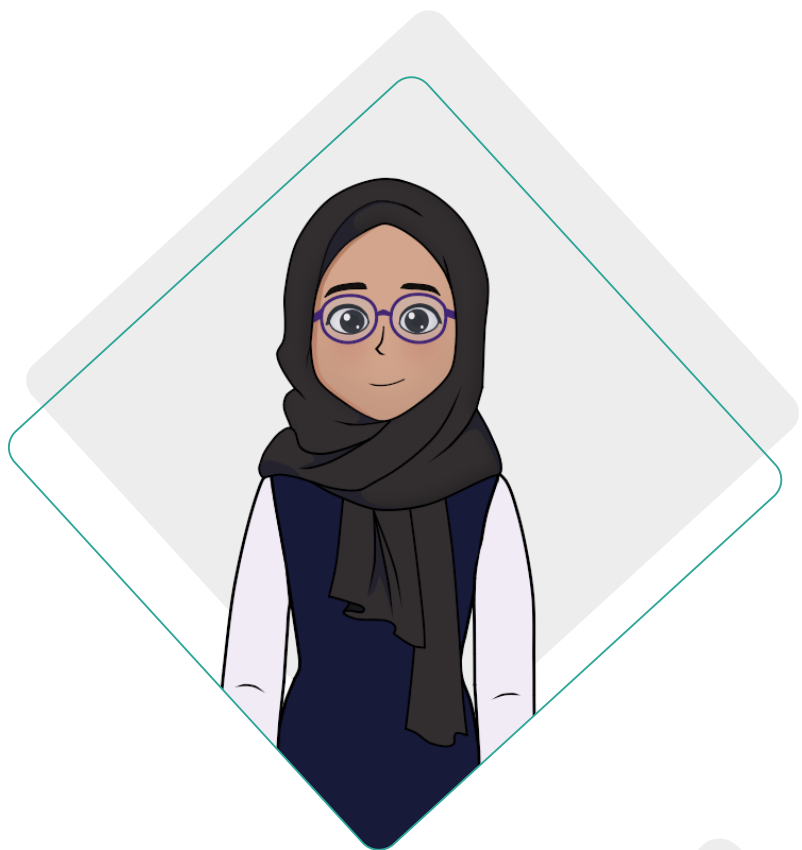
Stage

High school

Aisha

The character importance in curricula

A Merry and playful student who is less diligent than her two friends but who is always looking for information and asking questions.

Character appearance setting

Girl's school

Stage

High school
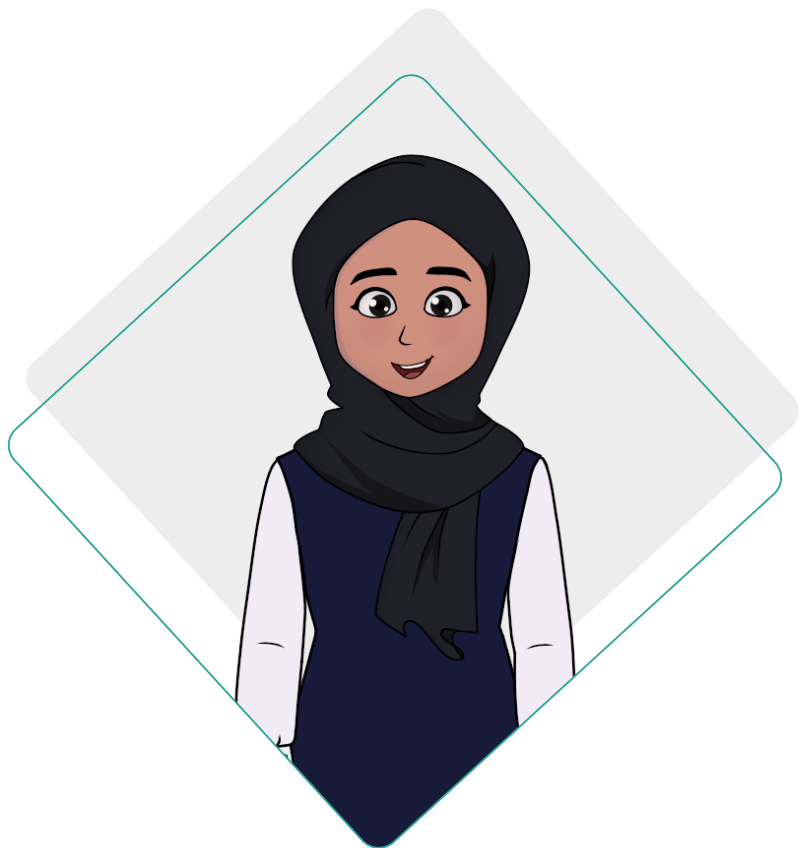
Saleh the Robot

The character importance in curricula

A main character in all stages, its appearance remains unchanged, and it appears at the end of each visual content to summarize the lesson.

Character appearance setting

School/ family home

Stage

Elementary/Middle/ High school

Secondly: Topic of the Cybersecurity Education Curriculum

A- Visual content topics for elementary school:

First grade	• Safe use of the Internet
Second grade	• Internet Safe Browsing Rules.
Third grade	• Safe use of e-mail. • Reliable information on the Internet. • Copyright.
Fourth grade	• Your health and the computer. • Social isolation. • Computer protection. • Software licenses.
Fifth grade	• Intellectual property. • Digital piracy.
Sixth grade	• Online publishing and social media. • Cyberbullying.

B- Visual content topics for middle school:

Seventh grade	• Malicious programs. • Protecting networks from malicious programs. • Social networks. • The challenges of social media networks. • Computer security measures. • Network communication protocols.
Eighth grade	• Data privacy. • Children's personal information.
Ninth grade	• Backup and protecting databases. • Backup and protecting databases with passwords. • Online meetings. • Best practices for working online.

Trainer Guidebook For
Cybersecurity Education Curriculum

C-Visual content topics for high school:

Tenth grade	• Evaluating information sources on the Internet. • Tracking and privacy. • Network security protocols. • Security and usability. • Surveillance systems. • Sensors. • Information security in commercial institutions.
Eleventh grade	• Research and verify the quality of the information. • Data collection and verification. • Data encryption. • System Design - Security issues related to systems. • Cloud computing - information security. • Are my files safe on cloud storage? • Raspberry PI-based projects - Security surveillance systems. • Research and verify the quality of information (market study).

Twelfth grade	• Online payment methods. • Safe financial transactions over the Internet. • Internet scams. • Trust signs and safe connections. • Digital security. • The importance of information security and the triangle of protection. • Cybercrime. • Personal security precautions. • Malware detection and removal. • Ransomware attack. • Firewall. • File and folder permissions. • Digital footprint. • Digital tracking effects. • Browsing social networks safely. • Cybersecurity and information security.

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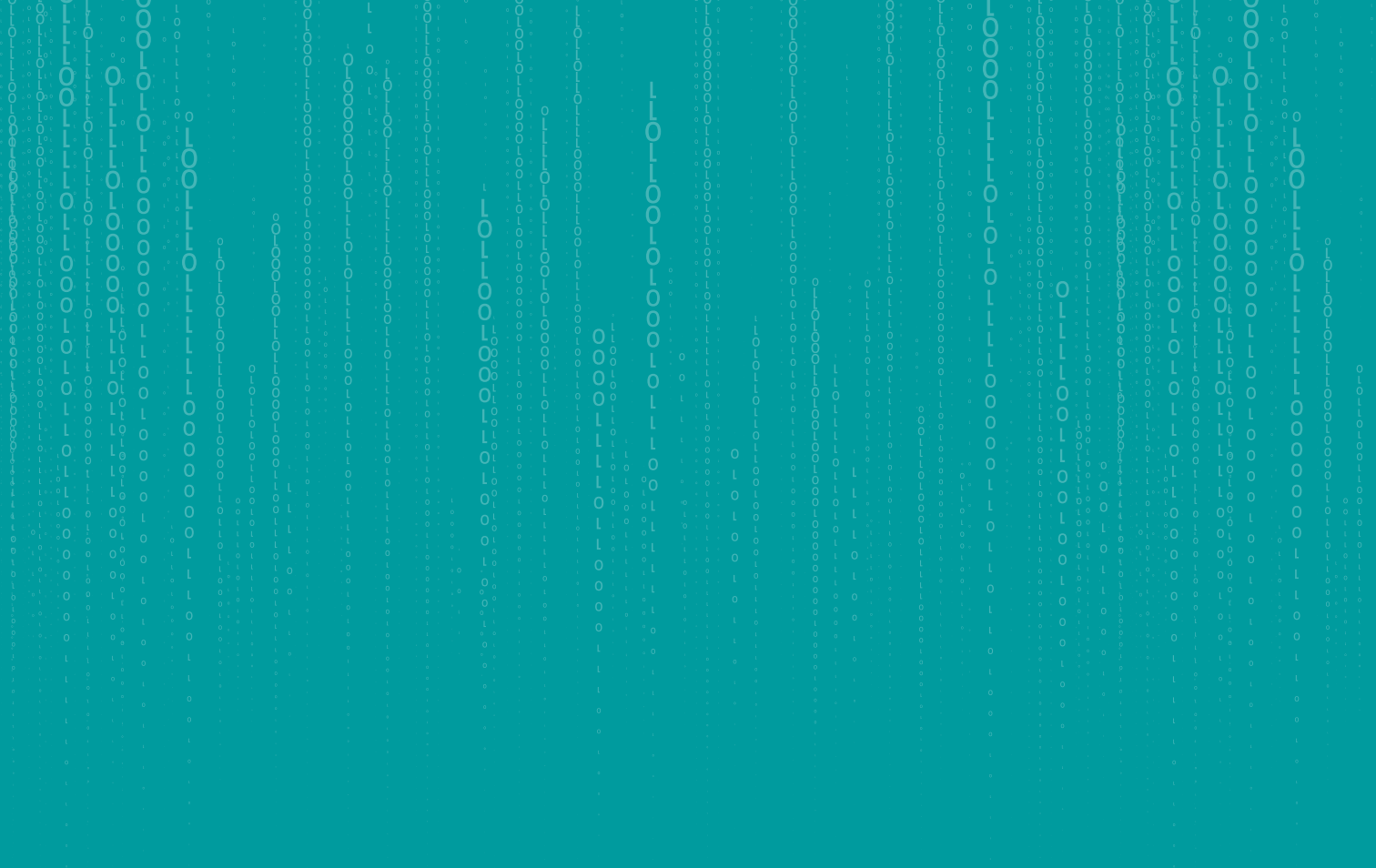
Episode terminology table

Elementary School

Episode	Episode title	Term in Arabic	Term in English
1	**Safe use of the Internet**	الإنترنت	Internet
		شبكة الإنترنت	World Wide Web
		المعلومات	The information
		كلمات المرور	Passwords
		البيانات الشّخصيّة	Personal information
		تصفُّح الإنترنت	Browse the internet
		استخدام الإنترنت	Using the Internet
		الفيروسات	Viruses

Episode	Episode title	Term in Arabic	Term in English
2	**Internet Safe Browsing Rules**	التّصفُّح الآمن للإنترنت	Safe browsing of the Internet
		قواعد تصفُّح الإنترنت	Internet browsing rules
		مخاطر تصفُّح الإنترنت	Internet browsing risks
		برامج الحماية من الفيروسات	Antivirus software
		سرقة البيانات	Data theft
		حماية المستخدم	User protection
		الأجهزة الإلكترونيّة	Electronic devices
		الرّوابط الإعلانيّة	Advertising links

Episode	Episode title	Term in Arabic	Term in English
3	Safe use of e-mail	البريد الإلكترونيّ	E-mail
		استخدام البريد الإلكترونيّ	Use Email
		الاستخْدَام الآمِن للبَريد الإلكترونيّ	Safe use of Email
		إنشاء كلمة مرور	Create a password
		كلمة مرور قويّة	Strong password
		كلمة مرور صعبة التّخمين	A hard-to-guess password
		كلمة مرور عاديّة	Normal password
		كلمة مرور ضعيفة	Weak password
		رسائل بريد إلكترونيّ	Emails
		رسائل بريد إلكترونيّ مجهولة المصدر	Anonymous Emails
		اختراق البريد الإلكترونيّ	Email hack
		القرصنة الإلكترونيّة	Hacking
		القراصنة الإلكترونيّون	Hackers

Episode	Episode title	Term in Arabic	Term in English
4	**Reliable information on the Internet**	المعلومات الموثوقة	Reliable information
		مصادر المعلومات	Information sources
		البحث على الإنترنت	Online search
		المواقع الرّسميّة	Official websites
		المواقع الإلكترونيّة المعتمدة	Approved websites
		مواقع المدارس	School websites
		مواقع الجامعات	Universities websites
		مواقع الوزارات	Ministries websites
		المواقع العادية	Regular websites

5	**Copyright**	النّشر	Publishing
		الطّباعة	Printing
		حقوق النّشر والطّباعة	Copyright
		الأفكار	Thoughts
		الإنجازات	Achievements
		المحتوى الأصلي	Original content
		ادّعاء الملكيّة	Claim ownership
		القوانين	Laws

Episode	Episode title	Term in Arabic	Term in English
6	Your health and the computer	الحاسوب	Computer
		المحافظة على الصّحّة	Maintaining health
		المشكلات الصّحيّة	Health Issues
		ضعف النظر	Poor Eyesight
		إجهاد العينين	Eyestrain
		آلام الظهر	Back pain
		تقوس العمود الفقريّ	Curvature of the spine

Episode	Episode title	Term in Arabic	Term in English
7	Social isolation	العزلة الاجتماعيّة	Social isolation
		العلاقات الإنسانيّة	Human relationships
		العلاقات الاجتماعيّة	Social relations
		الأضرار النّفسيّة	Psychological damage
		القلق	anxiety
		التّوتّر	Stress
		السلوك العدوانيّ	Agressive behavior
		تنظيم وإدارة الوقت	Organizing and managing time
		الاستخدام المفرط للحاسوب	Excessive computer use
		المخاطر النّفسيّة	Psychological risks

Episode	Episode title	Term in Arabic	Term in English
8	Computer security	حماية الحاسوب	Computer security
		مشاركة كلمات المرور	Share passwords
		الكلمات الشّائعة	Common words
		اختيار كلمة المرور	Choose a password
		مخاطر الفيروسات	Virus risks
		البرمجيّات الضّارّة	Malware
		الاختراق والفيروسات	Hacks and Viruses

Episode	Episode title	Term in Arabic	Term in English
9	Software licenses	تراخيص البرامج	Software licenses
		بدون ترخيص	Without a license
		مصادر غير موثوقة	Unreliable sources
		مشاكل قانونيّة	Legal troubles
		تحميل البرامج	Software download
		استخدام البرامج دون ترخيص	Unauthorized use of software
		تبعات قانونيّة	legal consequences
		مساءلة قانونيّة	Legal accountability
		مخالفات قانونيّة	Legal violations

Episode	Episode title	Term in Arabic	Term in English
10	Intellectual property	المِلْكِيّة الفِكْريّة	Intellectual property
		حقوق المِلْكِيّة الفِكْريّة	Intellectual property rights
		قوانين المِلْكِيّة الفِكْريّة	Intellectual property laws
		المُؤَلّف	Author
		انتهاك حقوق المِلْكِيّة الفِكْريّة	Violation of intellectual property

المصطلح باللُّغة بالإنجليزيّة	المصطلح باللُّغة العربيّة	عنوان الحلقة	الحلقة
Digital piracy	القَرصَنَة الرّقميّة		
Copyright	حقوق النّشر		
Information hacking	قرصنة المعلومات		
Intellectual property owners	أصحاب المِلْكِيّة الفِكُريّة	**Digital piracy**	11
Copyright violation	انتهاك حقوق النّشر		
Illegal use of content	استخدام غير قانونيّ للمحتوى		

Online publishing and Social Media	النّشر الرّقميّ ووسائل التّواصل الاجْتِمَاعيّ		
Social media	وسائل التّواصُل الاجْتِمَاعيّ		
Security rules	قواعد الأمان	**Online publishing and social media**	12
Fraud	النّصب والاحتيال		
Advantages of social networking websites	إيجابيات مواقع التّواصُل الاجْتِمَاعيّ		
Disadvantages of social networking websites	سلبيات مواقع التّواصُل الاجْتِمَاعيّ		

Cyberbullying	التنمُّر الإلكترونيّ		
The dangers of cyberbullying	مَخَاطِر التّنمُّر الإلكترونيّ		
Offending others	الإساءة للآخرين	**Cyberbullying**	13
Psychological harm	الأذى النّفسيّ		
Inappropriate posts	منشورات غير لائقة		
Types of cyberbullying	أنواع التّنمُّر الإلكترونيّ		

Middle school			
Episode	**Episode title**	**Term in Arabic**	**Term in English**
1	**Malware**	البَرامج الخَبيثَة	Malware
		مَخاطِر البرمجيّات الخَبيثَة	Malware risks
		آثار البرمجيّات الخَبيثَة	The effects of malware
		إتلاف البيانات	Data destruction
		برمجيّات التّجسُّس	Spyware
		البرمجيّات الدّعائيّة	Adware
		البرامج النّافعة	Useful programs
		الأجهزة الإلكترونيّة	Electronic devices

2	**Protecting networks from Malware**	حماية الشّبكَات من البرامج الخَبيثَة	Protecting networks from Malware
		مشاركة كلمات المرور	Share passwords
		المواقع الإلكترونيّة المَشبُوهة	Suspicious websites
		برامج مُكافَحَة الفيروسات	Antivirus programs

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الحلقة	عنوان الحلقة	المصطلح باللُّغَة العربيّة	المصطلح باللُّغَة بالإنجليزيّة
3	**Benefits of social media**	فوائد وسائل التّواصُل الاجْتِمَاعيّ	Benefits of social media
		وسائل التّواصُل الاجْتِمَاعيّ	Social media
		إيجابيات مواقع التّواصُل الاجْتِمَاعيّ	Advantages of social networking websites
		سلبيات مواقع التّواصُل الاجْتِمَاعيّ	Disadvantages of social networking websites
		تبادُل الأفكار	Exchange ideas
		التّسويق الإلكترونيّ	E-Marketing
		الأعمال التّجاريّة	Commercial Business
4	**Challenges of social networking**	تحدّيات شبكات التّواصُل الاجْتِمَاعيّ	Challenges of social networking
		تضييع الوقت	waste time
		نَشر الشّائعات	Spread rumours
		الابتزاز	Blackmail
		الحذر	Caution
		التنمُّر الإلكترونيّ	Cyberbullying
		انتهاك الخصوصيّة	Privacy violation

Episode	Episode title	Term in Arabic	Term in English
5	**Computer security measures**	إجرَاءَات لحمايَة الحاسُوب	Computer security measures
		إغلاق جدار الحماية	Shuting firewall
		مخاطر الفيروسَات	Virus risks
		سرقة البيانات	Data theft
		برامج الحماية من الفيروسات	Antivirus software
		الاختراق والفيروسات	Hacks and Viruses

Episode	Episode title	Term in Arabic	Term in English
6	**Network communication protocols**	بروتوكولات الاتّصال في الشّبكَات	Network communication protocols
		نظام رقميّ	Digital system
		قواعد تبادُل الرّسائل	Message exchange rules
		تقسيم المعلومات	Information division
		حُزَم	Packets
		المُرسِل والمُستقبِل	The sender and the receiver
		أجزَاء حُزْمة الخدمة في الشّبكَات	Service pack parts in networks
		الشّبكَات	Networks
		الاتّصال بين الشّبكَات	Communication between networks

Episode	Episode title	Term in Arabic	Term in English
7	**Data privacy**	خصوصيّة البيانات	Data privacy
		شبكة الإنترنت	World Wide Web
		مَخَاطِر مُشارَكة المعلومات الشّخصيّة	Risks of Sharing Personal Information
		حماية الخصوصيّة	Privacy protection
		المواقع الإلكترونيّة	Websites
		البيانات الشّخصيّة	Personal data

Episode	Episode title	Term in Arabic	Term in English
8	**Children's personal information**	معلومات الأطفال الشّخصيّة	Children's personal information
		البيانات الخاصّة بالأطفال	Children's data
		نوع المعلومات	Information type
		بيان الخصوصيّة	Privacy statement
		طلب المعلومات	Request information

Episode	Episode title	Term in Arabic	Term in English
9	**Backup and protecting databases**	النّسخ الاحتياطيّ	Backup
		حماية قواعد البيانات	Database protection
		نظام آمِن محميّ	Protected secure system
		حساب التّخزين	Storage account
		أنواع البيانات	Data types
		تلف البيانات	Data corruption
		ضياع البيانات	Data loss

Episode	Episode title	Term in Arabic	Term in English
10	Backup and protecting databases with passwords	كلمة مرور	Password
		تعيين كلمة المرور	Set password
		قواعد البيانات والمِلفّات	Databases and files

11	Online meetings	الاجتماعات عبر الإنترنت	Online meetings
		الاجتماع عن بُعْد	Remote meeting
		تطبيقات حديثة	Recent applications

12	Best practices for working online	أفضل المُمارَسات للعمل عبر شبكة الإنترنت	Best practices for working online
		إجراءات آمنة	Safe procedures
		الإجراءات السّليمة	Proper procedures
		صعوبات محتملة	Potential difficulties
		الغرباء	Strangers

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High school

Episode	Episode title	Term in Arabic	Term in English
1	**Evaluating information sources on the Internet**	تقييم مصادر المعلومات على الإنترنت	Evaluate information sources on the Internet
		مصادر	Sources
		معايير أساسيّة	Basic criteria
		المصادر الإلكترونيّة	Electronic sources
		الجهة المسؤولة	Responsible party
		الغرض	The purpose
		التّغطية	Coverage
		الدّقّة والصلاحيّة	Accuracy and validity
		الموضوعيّة	Objectivity
		المصداقيّة	Credibility
		مصادر موثوقة	Trusted sources

Episode	Episode title	Term in Arabic	Term in English
2	**Tracking and privacy**	التّعقّب والخُصوصيّة	Tracking and privacy
		تعقُّب البيانات عبر الإنترنت	Online data tracking
		حماية البيانات الشّخصيّة	Personal data protection
		إجراءات الحماية	protection measures
		المُتعقّبون	trackers
		تصفُّح الإنترنت	Internet browsing

Episode	Episode title	Term in Arabic	Term in English
3	Network security protocols	بروتوكولات أمن الشبكة	Network security protocols
		أمن الشَّبَكَات	Network security
		صيانة الشبكات	Network maintenance
		جدار الحماية	Firewall
		أمن وسلامة البيانات	Data security and integrity
		نَقْل البيانات	Data transfer
		سرقة البيانات	Data theft
		الاختراق والفيروسات	Hacks and Viruses

Episode	Episode title	Term in Arabic	Term in English
4	Security and usability	الأَمْن وقابليّة الاستخدام	Security and usability
		آليّات تأمين البيانات	Data security mechanisms
		رسائل البريد العشوائيّ	Spam messages
		رسالة إلكترونيّة مجهولة المصدر	Anonymous Emails
		كلمة مرور قويّة	Strong password
		كلمة مرور صعبة التّخمين	A hard-to-guess password
		كلمة مرور عاديّة	Normal password
		كلمة مرور ضعيفة	Weak password
		اختراق البريد الإلكترونيّ	Email hack
		الاحتيال الإلكترونيّ	Email fraud
		القرصنة الإلكترونيّة	Hacking
		برامج مُكافَحَة الفيروسات	Antivirus programs
		برامج الحماية من الفيروسات	Antivirus software

Episode	Episode title	Term in Arabic	Term in English
5	**Surveillance systems**	أنظمة المُراقَبة	Surveillance systems
		خوادم	Servers
		أنظمة الإنذار ضد السرقة	Anti-theft alarm system
		أنظمة التّحكُّم	Control systems
		أنظمة الإنذار	Security alarm system
		الحياة الافتراضيّة	Virtual life

Episode	Episode title	Term in Arabic	Term in English
6	**Sensors**	المُسْتَشْعِرَات	Sensors
		أجهزة الاستشعار	Sensors
		إشارة	Signal
		أنواع المُسْتَشْعِرات	Sensor types
		مُسْتَشِعرات الحرارة	temperature sensors
		مُسْتَشِعرات الدخان	Smoke sensors
		مُسْتَشِعرات اللّمس	Touch sensors
		مُسْتَشِعرات الحركة	motion sensors
		مُسْتَشِعرات الضّوء	light sensors
		مُسْتَشِعرات الضّغط	pressure sensors

Episode	Episode title	Term in Arabic	Term in English
7	**Information Security in commercial institutions**	أمن المعلومات	Information Security
		المؤسَّسَات التّجاريّة	Commercial institutions
		التّحديث الآليّ	Auto update
		أنظمة التّشغيل والتّطْبِيقات	Operating systems and applications
		تثبيت برامج الحماية	Install security software
		المخاطر الرّقميّة	Digital risks

Episode	Episode title	Term in Arabic	Term in English
8	**Research and verify the quality of the information**	البحث والتّحقُّق من جَوْدَة المعلومات	Research and verify the quality of the information
		شبكة الإنترنت	World Wide Web
		معايير جودة المعلومات	Information quality standards
		الدّقّة	Accuracy
		الملاءمة	Relevance
		التّوقيت	Timing
		مستوى التفاصيل	level of detail
		الكفاية	Sufficiency
		المصادر الموثوقة للمعلومات	Reliable sources of information
		معلومات غير صحيحة	Incorrect information

Episode	Episode title	Term in Arabic	Term in English
9	**Data collection and verification**	جَمْع البيانات والتّحقُّق منها	Data collection and verification
		أدوات البحث المُتميّز	Premium search tools
		مصادر جَمْع البيانات	Data collection sources
		أدوات جَمْع البيانات	Data collection tools
		البيانات الرّئيسَة	Primary data
		البيانات الثّانويّة	Secondary data
10	**Data Encryption**	تشفير البيانات	Data Encryption
		مفتاح فكّ التّشْفير	Decryption key
		التّشْفير المتماثل	Symmetric Encryption
		التّشْفير غير المتماثل	Asymmetric Encryption
		أنواع تشفير البيانات	Types of data encryption
11	**System design- Security issues related to the system**	تصميم النّظام	System design
		المسائل الأمنيّة المُتعلّقة بالنّظَام	Security issues related to the system
		هيكليّة النّظام	System structure
		المُكوّنات المادّيّة	physical components
		أنظمة التّشغيل	Operating systems
		البرمجة	programming
		النُّظُم	systems

Episode	Episode title	Term in Arabic	Term in English
12	**Cloud Computing- Cloud Computing**	الحَوْسَبَة السّحابيّة	Cloud Computing
		الأمن المعلوماتيّ	Information security
		الدّعْم الفنيّ	Technical support
		أخصائيّ تكنولوجيا المعلومات	IT specialist
		الحَوْسَبَة السّحابيّة العامّة	Public cloud computing
		الحَوْسَبَة السّحابيّة الخاصّة	Private cloud computing

Episode	Episode title	Term in Arabic	Term in English
13	**Are my files safe on cloud storage ?**	التخزين السّحابيّ	Cloud storage
		تخزين البيانات	Data storage
		طرق الحَوْسَبَة التّقليديّة	Traditional computing methods
		سياسات الأمن القوميّ	National security policies
		تأهيل المُوظّفين	Rehabilitation of employees
		آليّة عمل التّخزين السّحابيّ	Cloud storage mechanism
		حِفْظ البيانات	Saving data
		الأمن السّيبرَانيّ	Cybersecurity

Episode	Episode title	Term in Arabic	Term in English
14	**technological track Raspberry Pi based projects - digital surveillance systems**	المشاريع القائمة على Raspberry Pi	Raspberry Pi based projects
		أنظمة المُرَاقَبَة الرّقميّة	Digital surveillance Systems
		المنزل الذّكيّ	Smart home
		أنظمة المُرَاقَبَة عن بُعْد	Remote monitoring systems

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Episode	Episode title	Term in Arabic	Term in English
15	Research and verifying the quality of information (market study)	دراسة السُّوق	Market study
		تحليل البيانات	Data analysis
		جودة المعلومات	Information quality
		سوق مُعيّن	specific market
		عادات المستهلكين	consumer habits
		احتياجات المستهلكين	consumer needs

Episode	Episode title	Term in Arabic	Term in English
16	Electronic payment methods	طرق الدَّفْع الإلكترونيّ	Electronic payment methods
		التّسوُّق عبر الإنترنت	Online shopping
		الأجهزة اللّوحيّة	Tablets
		الهواتف الذّكيّة	Smart phones
		بطاقة الائتمان	Credit card
		بطاقة الخَصْم	Discount card
		تحويل بنكيّ	Bank transfer

Episode	Episode title	Term in Arabic	Term in English
17	Safe financial transactions on the Internet	معاملات ماليّة آمنة	Safe financial transactions
		إشارات الثّقة	Signs of trust
		الشّهادات الرّقميّة	Digital certificates
		اتفاقيّة الخصوصيّة	Privacy agreement
		سجِلّات المعاملات	Transaction records
		التَّحقُّق من البريد الإلكترونيّ	Email verification

Episode	Episode title	Term in Arabic	Term in English
18	Internet scams	عمليّات الاحتيال عبر الإنترنت	Internet scams
		الاحتيال الإلكتروني	Email fraud
		البرمجيات الضّارّة	Malware
		القَرْصَنَة الرّقميّة	Digital piracy
		إتلاف البيانات	Data destruction
		برمجيّات التّجسُّس	Spyware
		البرمجيّات الدعائيّة	Adware
		المواقع الإلكترونيّة المَشْبُوهة	Suspicious websites
		الابتزاز	Blackmail
		الحذر	Caution
		المواقع الزّائفة	Fake websites

Episode	Episode title	Term in Arabic	Term in English
19	Signs of trust and safe connection	إشارات الثّقة والاتّصال الآمن	Signs of trust and safe communication
		شعارات الأمان	Security logos
		رموز حماية المعاملات	Transaction security codes

Episode	Episode title	Term in Arabic	Term in English
20	Digital security	الأمن الرّقميّ	Digital security
		حماية الأجهزة والشّبكَات والبيانات	Protect devices, networks, and data
		اختصاصات الأمن الرّقميّ	Digital security specialties

Episode	Episode title	Term in Arabic	Term in English
21	**The importance of information security and the triangle of protection**	مثلث الحماية	Triangle of protection
		السِّرِّيَّة	Confidentiality
		التّكامُل	Integrity
		التّوافر	Availability
		الاختراقات الأمنيّة	Security breaches

22	**Cybercrime**	الجرائم الإلكترونيّة	Cybercrime
		غايات غير قانونيّة	Illegal purposes
		التوزيع غير القانوني	Illegal distribution
		حقوق الطّبع والنّشر	Copyright
		المِلْكِيّة الفِكْرِيّة	Intellectual property
		سرقة الهُويّة	Identity theft
		انتهاك الخصوصيّة	Privacy violation
		المُضايَقات عبر الإنترنت	Online harassment
		التّسلُّل الإلكترونيّ	Cyber infiltration

23	**Personal security precautions**	احتياطات الأمن الشّخصيّ	Personal security precautions
		برامج مضادّ الفيروسات	Antivirus software
		مفهوم التّحقُّق الثّنائيّ أو المُتعدّد	The concept of double or multiple verification
		التّهديدات الإلكترونيّة	Electronic threats

Episode	Episode title	Term in Arabic	Term in English
24	**Malware detection and removal**	الفيروسات وبرامج التّجسُّس	Viruses and spyware
		مُؤشِّرات الكشف عن البرامج الضّارّة	Malware detection indicators

25	**Ransomware attack**	هجوم الفِدْيَة	Ransomware attack
		جهاز التّوجيه	Router
		الهجمات الإلكترونيّة	Cyber attacks

26	**Firewall**	جدار الحماية	Firewall
		حُزَم البيانات	Data packets
		الاتّصالات المشبوهة	Suspicious contacts
		الإعلانات	Ads
		البريد المزعج	Spam

27	**File and folder permissions**	أذونات الملفّات والمجلّدات	File and folder permissions
		التّحكُّم الكامل	Full Control
		التّعديل	Modify
		القراءة والتّنفيذ	Reading and implementation
		محتويات المجلد	folder contents

Trainer Guidebook For
Cybersecurity Education Curriculum

الحلقة	عنوان الحلقة	المصطلح باللُّغة العربيّة	المصطلح باللُّغة بالإنجليزيّة
28	Digital footprint	البَصْمَة الرّقميّة	Digital footprint
		القوائم الإلكترونيّة	Electronic lists
		البصمات الرّقميّة المجهولة	Anonymous fingerprints
		البَصْمَة الرّقميّة النّشِطة	Active fingerprints
29	The effects of digital tracking	آثار التَّعقُّب الرّقميّ	The effects of digital tracking
		ذاكرة التّخزين	Storage memory
		مِلفّات تعريف الارتباط	Cookies
		تاريخ التّصفُّح	Browsing history
30	Browsing social networks safely	تصفُّح الشّبكَات الاجتماعيّة بأمان	Browse social networks safely
		الشّبكَات الاجتماعيّة	Social networks
		ضبط إعدادات الخصوصيّة	Adjust privacy settings
		المحتوى	Content
		المُتَنَمِّرُون	Bullies
		شبكات التّواصُل الاجتماعيّ	Social networks
31	Cybersecurity	الأمن السّيبرَانيّ	Cybersecurity
		هجمات إلكترونيّة	Cyber attacks
		فقدان البيانات المُهمّة	Loss of important data
		قواعد الأمن السّيبرَانيّ	Cybersecurity rules
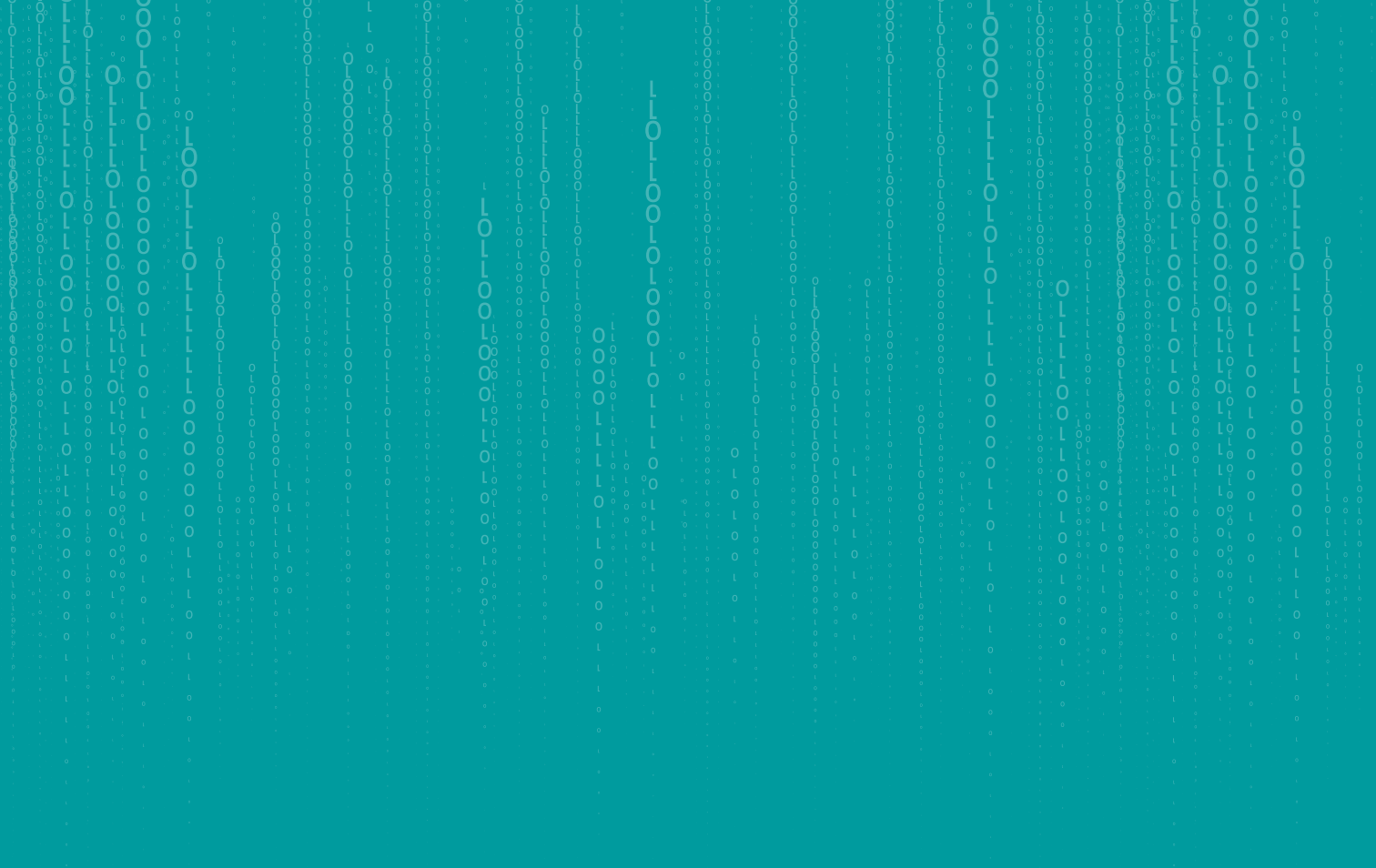
The fourth axis

The Trainer's tasks according to the guidebook

How the trainer interacts with the visual content of the Cybersecurity eductaional curricula

The educational Cybersecurity curricula's visual content is a cutting-edge model for engaging and appealingly presenting information and ideas to students. It is part of the plan to help trainers make outstanding efforts to educate students about the significance of technology, its uses, and how to avoid its dangers.

The trainer's interaction with the visual contents is divided into several stages. So that these stages are integrated to achieve the final goal of the curriculum, and the **following is an explanation of these stages in detail:**

First stage: pre-digital content:

This stage includes the following tools and procedures:

Watching the episode:

The trainer watches the visual content, determines the time points at which it is supposed to stop - in case there is a need to stop - and determines the interactive questions that will be asked to the students during the visual content.

Read the information attached:

This is the first step in preparing for the lesson and aims to fully comprehend and

absorb the cognitive content that goes along with the visual content. This helps the trainer prepare themselves cognitively to present the material to the students.

Getting ready for the enrichment learning activity's tools:

They are the tools that encourage interaction on multiple levels—interaction among

the students, and interaction between the students and the trainer, and distance the lesson from indoctrination. The enrichment learning tools that are appropriate to the nature of the cognitive content that is included in the visual content are then identified and chosen by the trainer.

Preparing evaluation tools:

The trainer is expected to conduct an evaluation with the students following each lesson to determine the cognitive benefit of the visual content to them. This can be done with observation or direct questions, and the evaluation here **uses two points which are:**

Pre-assessment: This evaluation expects to figure out the understudies' load of information on the subject of visual content prior to introducing it, and to decide their underlying information. This is accomplished through a number of enriching questions, and the trainer may, if deemed necessary, add additional enriching questions.

Summative evaluation: or post-assessment, which compares students' prior and post-lesson knowledge after the visual content has been presented.

Second stage: presenting the visual content to the students:

The trainer then presents the visual content to the students, either all at once or in batches, after asking the students enriching questions and taking notes. The trainer makes their observations based on the students' harmonious interaction with the visual material.

Third stage: Post presentation:

Following the presentation of the visual content to the students at this point, the trainer engages the students in a variety of activities aimed at consolidating the new information among them and assessing their cognitive interaction with it. An in-depth explanation of each of these activities can be found below:

General enrichment questions:

These questions are meant to get students' first impressions of the visual content. Some examples of these questions are listed below; the trainer can choose any other questions they think are appropriate.

- Was the visual content interesting?

- Which character did you like? And why?

- What are your observations about the visual content?

- Would you like to see more of this visual content?

- How can you protect yourself from making the same mistake as Jassim?

Interactive questions:

The purpose of these questions is to help students retain useful information and encourage interactive learning. The trainer can choose any other questions they think are appropriate, and examples of these questions are provided below.

- If you were in Nasser's place and the same thing happened to you, how would you act?

- Did you know this information about protecting personal data?

- I think some of you will run to your computer as soon as you get home and change your password.. Which of you will do that?

- Khaled appears to be an educated young man with extensive experience in computer science. Do you know someone who is like him in real life?

Evaluation questions:

This comparison is the most important evaluation tool that the trainer is supposed

to rely on. These questions aim to determine the value of students' knowledge gained after watching the visual content. and compares it with the students' initial knowledge before watching the visual content, which was determined through enrichment questions.

The trainer's notes during the presentation of the visual content.

The trainer is expected to take notes on the note cards both during and after the presentation of the visual content. On the card, they should write any notes they have about the students or the lesson as a whole. The trainer can monitor the students' interactions with the lesson by using these notes and they are highly important for the end. **The following is an illustration of what the trainer's feedback card looks like.**

trainer notes card							
Grade:	**Lesson title:**			**Trainer name:**		**Date:**	
Notes during presentation				Post-presentation notes			
Series	Student name	Student 's harmony with visual content	Student's questions during presentation	Responses to the Trainer's questions	Understanding visual content	Questions about visual content	Answering the Trainer's questions	General notes
1							
2							
3							
4							
5							

The trainer's notes card makes it possible to keep tabs on the various activities that students engage in throughout the lesson. Each student is guided cognitively and behaviorally in a manner that positively reflects on the objectives of the lesson, and it invests these observations in the trainer's knowledge of the cognitive and behavioral differences between the students.

Characteristics and details of the trainer's note card, and instructions on how to deal with it

Keeping an eye on indicators of student's compatibility with visual content:

The trainer can use this indicator to keep track of indicators related to the student's compatibility with the visual material, take notes on each student, such as their distraction due to busyness, or lack of enthusiasm in following up on the visual material, are among the behavioral observations crucial for trainers. Considering that, from a practical standpoint, the trainer cannot separate the behavioral aspects from the cognitive aspects.

Monitoring the level of motivation towards learning among students:

By measuring the questioning indicator during the presentation of visual content, trainers can identify students who are especially curious about the material and its information. This curiosity often correlates with a higher level of cognitive curiosity, which can be a positive indicator of learning potential. By referencing their notes, trainers can monitor this indicator and gain valuable insights into student engagement and understanding.

Monitoring the level of student interaction with the trainer:

This is accomplished by the student's response to the trainer's questions; the trainer is expected to ask the students questions both during the visual content presentation and afterward. These questions accomplish a number of objectives. They include test questions that assess students' comprehension of visual content information and other supporting questions that help students retain information. The trainer's notes card keeps track of the variation in the level of student interaction with the questions as it varies from a student to another.

Understanding Visual Content:

There is a wide range of abilities among students to comprehend the visual content's cognitive content. Some students are able to comprehend and absorb the cognitive material quickly with little assistance from the trainer; on the other hand, others are able to comprehend and absorb the cognitive material more slowly and require extensive assistance from the trainer. As a result, the trainer is expected to take notes on this topic. These notes are very important to the trainer for the upcoming lessons and visual content. Based on the notes from the previous lesson, the trainer can concentrate on students who require high-level cognitive support and require a longer period of time to comprehend the cognitive material.

General notes

The trainer can use the note card to record any additional observations related to the student's learning, regardless of whether they fall under the cognitive or behavioral domain.

Scientific approaches in this field emphasize the correlation between the number of points on the evaluation scale and the number of evaluation criteria. This ensures a precise assessment cycle, mirroring real-world practices, as the card utilizes a four-step scale.

The process by which students are evaluated for each aspect of the card:

Indicator	The indicator's significance	Indicator symbol	The indicator's significance	Indicator symbol	The indicator's significance	Indicator symbol	The indicator's significance	Indicator symbol
The student's engagement with the visual content	Not engaged at all	(-)	Minimally engaged	(+)	Moderately engaged	(+ +)	very engaged	(+ + +)
Student question during presentation	Doesn't question at all	(-)	Questions moderately	(+)	Questions always	(+ +)		
Responding to Trainer's questions	unresponsive to the Trainer	(-)	slightly responds to the Trainer	(+)	moderately responds to the Trainer	(+ +)	excellent response to the Trainer	(+ + +)
Understanding visual content	Very slow understanding of visual content	(- -)	slowly understands visual content	(-)	understands visual content fast	(+)	understands visual content very fast	(+ +)

The trainer puts a sign (+ +) in the table above when he notices that one of the students is acting in a moderately engaging manner. As a result, the rest of the assessments were set in exchange for each one.

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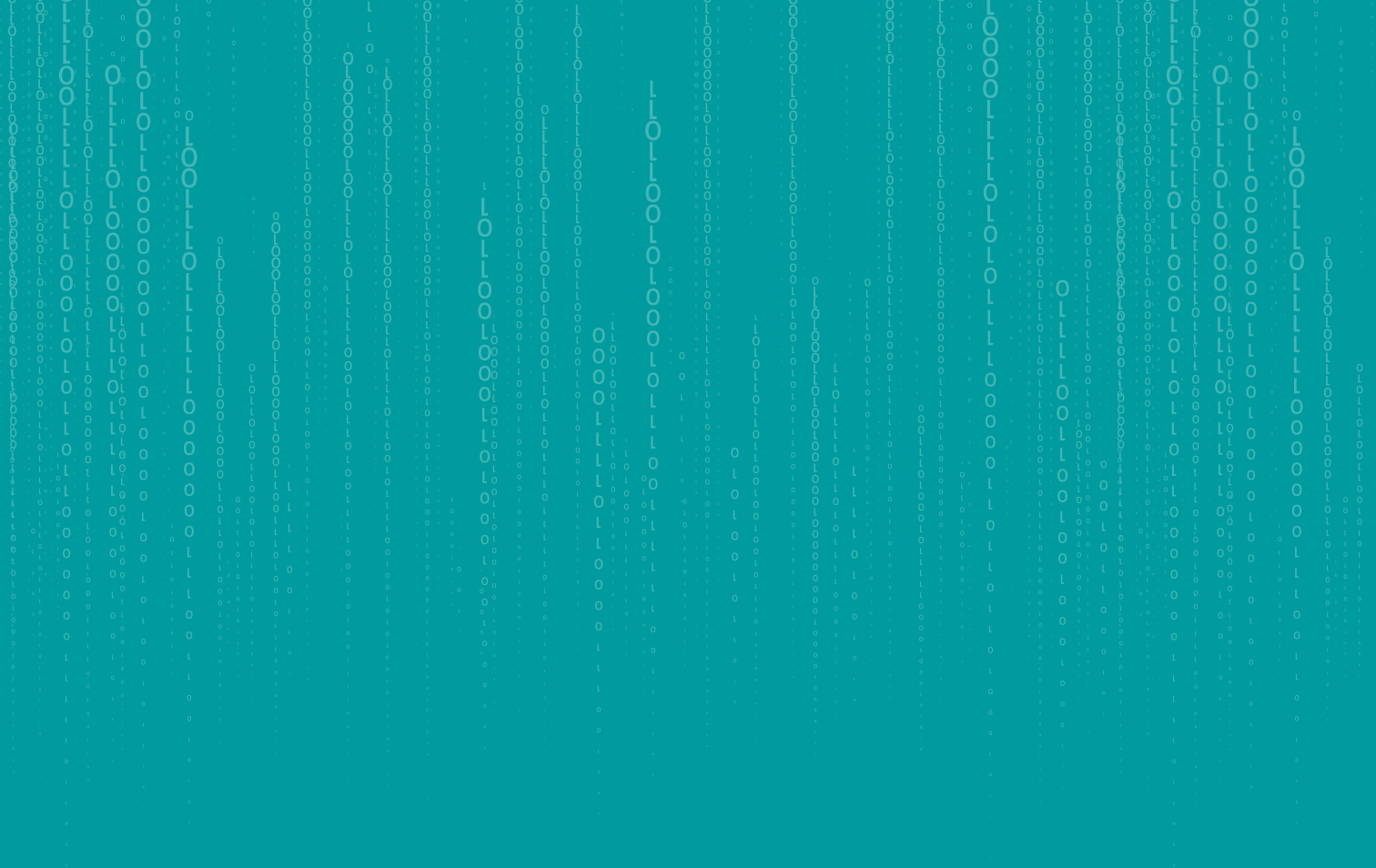
The fifth axis

A brief overview of the educational visual contents

The objectives of the lessons and a brief summary of the visual material are provided below, along with questions about the visual material. The constant, structural, and final evaluations, as well as the criteria for achieving goals, evaluation tools, and defining the criteria for students' evaluation, are also included.

The specific attachments for each episode below, which are viewed as a support for the trainer, have a specific structure that explains how the trainer interacts with the visual content, whether through the accompanying interactive activities, for evaluation, or to determine the tools and evaluation criteria. It is necessary to emphasize at this point that the content of the attachments is not a mandatory tool for the trainer; rather, it serves as a guide and guidance tool, allowing the trainer to modify the nature of the questions and how they are formulated, as well as adopt other evaluation tools or interactive activities, depending on the circumstances of each case and class.

Stage	Activity preparation	Activity type	Activity tools	Procedures	Evaluation tools	Notes
Before presenting visual content	Presenting goals, criteria, and expected terms of visual content			Determining the role of the trainer and the student when doing the activity	Simple enrichment question asked by the Trainer	Some goals are attached with every visual content
During the presentation of visual content	Measuring engagement level and student's harmony with visual content	Invdiduval, in pairs, in groups	Selecting needed tools for the activity	Determining student's focus and harmony level with visual content	Conclusion and interpretive questions after the visual content was stopped at a predetermined time set by the trainer.	It is up to the trainer to determine stopping points

After presenting visual content	Measuring engagement level and student's harmony with visual content	Invdiduval, in pairs, in groups	Selecting needed tools for the activity	• assessing the extent to which the students have retained the information. • Determine how the students' knowledge and perceptions were affected by the visual content. • Establishing new information for students. • Role play, acting a situation, reenacting the visual content, and other tools. • Determining the final knowledge bank gained after watching the visual content and doing the activities.	The trainer asks evaluation questions	Suggestions for test question are attached with every visual content
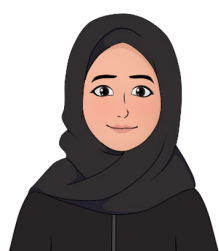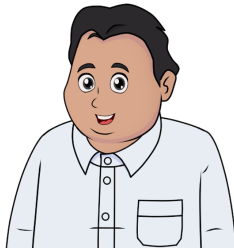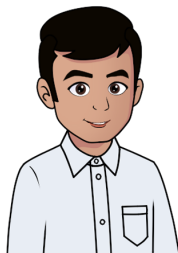
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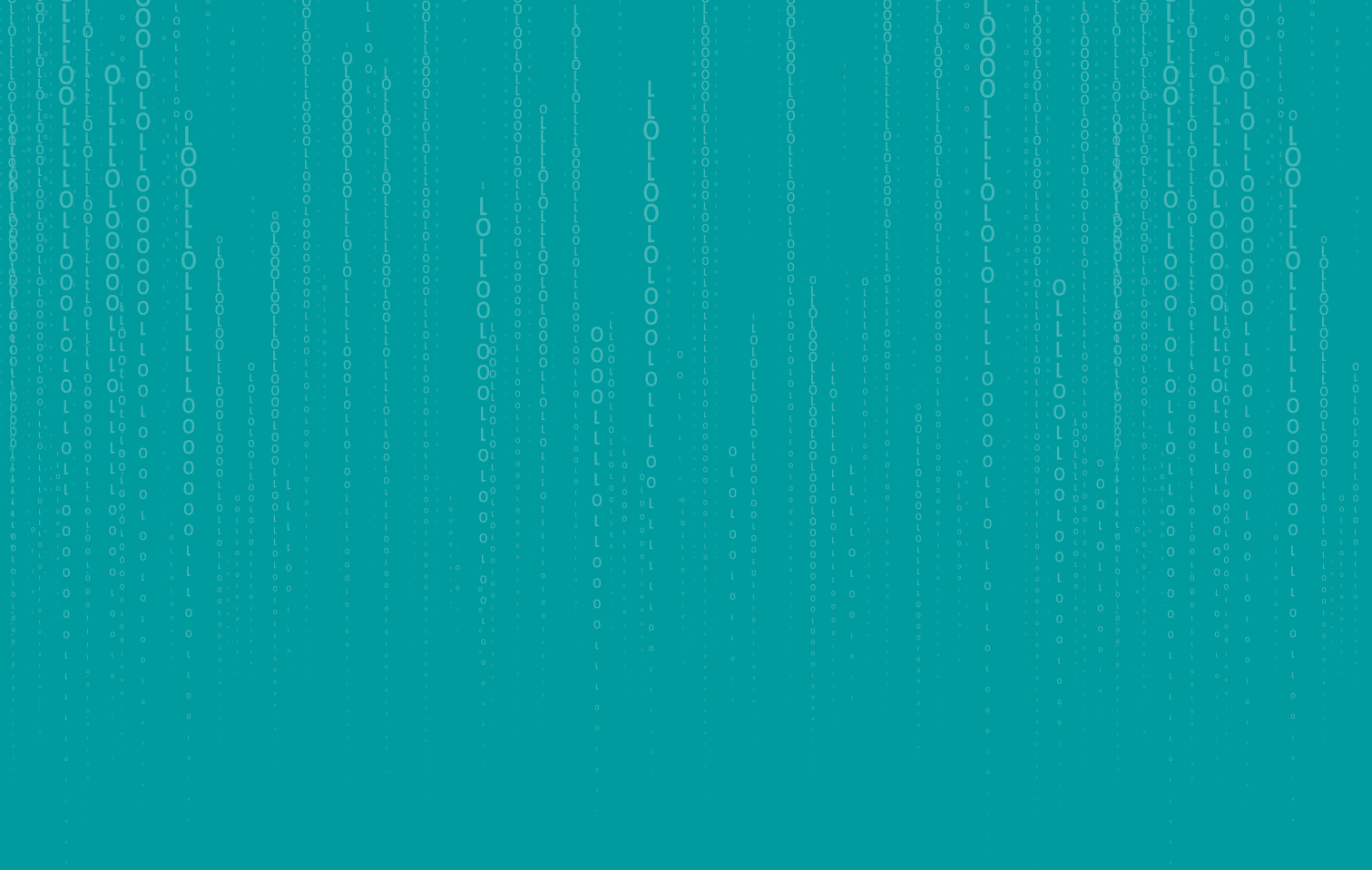
Elementary school

Elementary school Characters

Series	characters	Importance to the curricula	Character appearance setting	Image of the character
1	**The trainer**	A main character who is well-versed in computer technology and delivers knowledge to his students with ease and amusement.	School	
2	**Female trainer**	The female trainer sometimes acts on behalf of the male Trainer. She is a lovely young woman who loves her students and provides them with information in an easy and enjoyable manner.	School	
3	**Nasser**	A diligent, courteous, and serious student, this character possesses a wealth of knowledge on the subjects covered in lessons and actively participates in classroom discussions.	School/ family home	
4	**Rashed**	A nice and calm student who likes to ask questions and deduce information.	School	

Series	characters	Importance to the curricula	Character appearance setting	Image of the character
5	Jassim	A cheerful student who loves to create an atmosphere of fun, and jokes with his classmates and his Trainer and is friendly with everyone.	School	
6	Khaled	He is an intelligent older brother and is a polite, elegant young man who has extensive knowledge about information technology.	family home	
7	Fatima	A main character who is nice and helpful and a hardworking student who knows a lot about data and network security.	family home	
8	Saleh the Robot	A recurring character appears at the end of each visual content to offer a concise summary of the key learning points. This character remains consistent throughout all the lessons, providing a familiar and reliable voice to reinforce understanding.	School/ family home	

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Visual content
for elementary school

Safe use of the Internet

Episode 1:
First Grade: Second Semester

Episode summary:

This visual content discusses Internet safety, protecting personal information like passwords, pictures, and important information, and how to use the Internet safely. like keeping the family's phone numbers and other information private.

First: episode criteria and goals

- **Episode criteria:**
  - The capacity to identify the risks of using the Internet.

  - The capacity to identify the necessary security measures for Internet browsing.

  - The capacity to identify personal information that cannot be shared online.

- **Episode goals:**
  - Equipping students with the essential rules for safe and responsible internet use.

  - To educate the student about the significance of safeguarding their personal and crucial data.

  - For the student to realize the importance of not sharing their personal data with anyone.

Second: pre-presentation of visual content:

Preparing visual content:

- Preparing the student in an attractive way through study conditions, and suitable information questions for their age.

Personal evaluation questions

- Do you have an idea about the risks of browsing the Internet?

- What is personal data? Give me some examples.

- What do you know about the Internet?

- Do you have an idea about the required rules for browsing the Internet safely?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- Determine the risks you can face while browsing the Internet.

- Define the necessary rules for browsing the Internet safely?

- What is personal data? Give an example.

- What do you know about viruses?
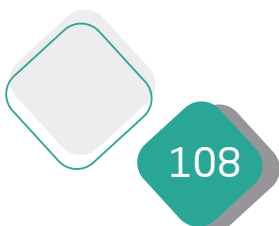
● Enrichment activities:

Role play: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

● Enrichment questions:

- How can you protect your personal data on the Internet?

- Mention 3 types of viruses that are harmful to computers.

- What would you do if you faced a problem when browsing the Internet?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Safe browsing rules of the Internet

Episode 2:

Second Grade: First Semester

Episode summary:

This visual content talks about how the user can protect themselves from the risks of using the Internet; in order to prevent anonymous individuals from stealing their data and the significance of providing virus protection software.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to identify Internet browsing risks.
  - The ability to identify necessary rules to safely browse the Internet.

- **Episode goals:**
  - For the student to know how to protect themselves from Internet risk.
  - For students to be able to prevent their data from being stolen by anonymous people.
  - For the student to realize the importance of providing and updating antiviruses.

Second: pre-presentation of visual content:

- **Preparing visual content:**
  - Preparing the student in an attractive way through Study conditions, and suitable information questions for their age.

- **Personal evaluation questions**
  - Do you have an idea about internet browsing risks?
  - Do you have an idea about viruses that target data and electronic devices?

Trainer Guidebook For
Cybersecurity Education Curriculum

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

● Final evaluation questions:

- Identify the risks you may face when browsing the Internet.

- Identify how to protect data from viruses.

- Is it safe to click on ads? and why?

- What is the software that protects electronic devices?

● Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● Enrichment questions:

- What kind of risks can you face when browsing the Internet?

- How can hackers threaten your personal data?

- How can you benefit from antivirus software?

Fifth: Episode note taking

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Safe use of e-mail

Episode 3:
Third Grade: First Semester

Episode summary:

This visual content talks about how you need to be careful when using email, create a hard-to-guess password, and refrain from opening emails from unknown sources or ones that contain advertisements.

First: episode criteria and goals

● Episode criteria:

- The ability to identify the risks related to hacking email.

- The ability to learn how to create a strong password.

● Episode goals:

- To learn how to use email safely.

- For students to be able to protect their emails from hacking or scams.

- For students to feel how important it is to be careful when using email.

- For students to realize the importance of a strong password, and train on how to choose one.

Second: pre-presentation of visual content:

● Preparing visual content:
Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

● Personal evaluation questions
- What is email?

- Are there risks when using email?

- Can others check your email without knowing your password?

- Which password guarantees full protection of email?

- What do you about digital piracy?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

- ### Final evaluation questions:

  - Identify the risks related to hacking email.

  - Identify how you can protect email from hacking

  - What do digital pirates do?

  - How can we protect ourselves from pirates?

  - What does a strong password consist of?

- ### Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

- ### Enrichment questions:

  - Why are emails from unknown sources a risk to your Cybersecurity?

  - Give examples of strong passwords for your email.

  - Do you receive advertisement emails from unknown sources? how do you deal with it?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
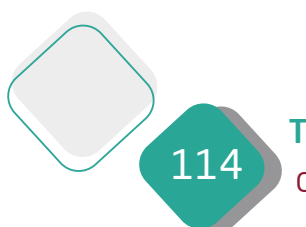
Reliable information on the Internet

Episode 4:

Third Grade: Second Semester

Episode summary:

This visual content emphasizes the importance of only using the Internet for information that is reliable. Official and approved websites, such as schools, universities, ministries, and well-known businesses, provide this reliable information.

First: episode criteria and goals

Episode criteria:

- The ability to identify the concept of reliable information.
- The ability to identify reliable sources to get accurate information.

Episode goals:

- For the students to become familiar with reliable information sources on the Internet.
- For the students to research reliable information on the Internet.
- For the students to realize the importance of relying on official websites.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

Personal evaluation questions

- Is any information on the Internet reliable?

- Are there more trustworthy websites than others?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- What does trusted information mean?

- Mention the sources of information that you can rely on for trustworthiness.

- How do you make sure information is trusted and correct?

- Is the updated date of information significant? And why?

- What is the difference between the information on normal websites and official websites?

Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

Enrichment questions:

- Give examples of reliable information sources.

- What are the disadvantages of untrusted information?

- If you wanted to know more about the most important local tourist destinations, where would you search online?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Copyright

Episode 5:

Third Grade: Second Semester

Episode summary:

This visual content discusses the significance of citing information sources and identifying the authors of texts and works. respect for copyrights and intellectual property, and emphasizes the importance of following the law when using the Internet; to safeguard both ourselves and others.

First: episode criteria and goals

● Episode criteria:

- The ability to identify the concept of intellectual property.

- The ability to define how to respect intellectual property on Internet websites.

● Episode goals:

- For the students to understand the concept of copyright.

- For students to not use a material that has intellectual property.

- For the students to realize the importance of abiding by rules when using the Internet.

Second: pre-presentation of visual content:

● Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.
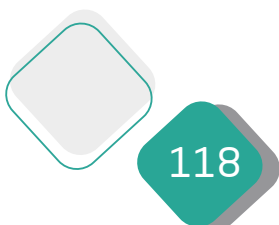
Personal evaluation questions

- Do ideas and intellectual achievements have property rights?

- Are we allowed to use the ideas and information of others without mentioning the source of the information?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- What is intellectual property?

- How can you use online information in line with intellectual property rules?

- Are we allowed to credit others' work for ourselves?

- What happens if we use certain content without the permission of the author?

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

◗ Enrichment questions

- If you were the owner of a creative idea, will you allow it to be circulated online without your permission? and why?

- How can intellectual property be protected on the Internet?

- Why should you protect ideas and information and credit it to its owners?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Your health and the computer

Episode 6:
Fourth Grade: First Semester

Episode summary:

This visual content discusses the significance of health care and warns that prolonged time spent in front of a computer and other technical devices may result in numerous health issues, such as weak vision, eye strain, back pain, and spine curvature.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to identify the risks that prolonged use of computers and electronic devices can cause on general health.
  - The ability to identify how to avoid the risks caused by extensive use of computers and electronic devices on general health.

- **Episode goals:**
  - For the students to learn about the risks of spending too much time in front of the computer and electronic devices.
  - For students to take care of their health when using electronic devices.
  - For students to realize the importance of avoiding the harm caused by electronic devices on physical health.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

Personal evaluation questions

- Is it harmful to use computers or other electronic devices?
- Mention some of the risks related to using computers and electronic devices.

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- Determine the risks of using computers and other electronic devices.
- Is it safe to spend a lot of time on electronic devices?
- What kind of health problems can happen from spending too much time on electronic devices?
- How can you avoid the health issues caused by using electronic devices?

Enrichment activities:

Competition between two teams: The trainer divides students into two teams,and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

Enrichment questions:

- Do you spend a lot of time on electronic devices? Is this good or bad?

- How can you benefit from technology without harming your health?

- Give examples of illnesses related to prolonged use of computers.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Social isolation

Episode 7:

Fourth Grade: First Semester

Episode summary:

This visual content discusses how social isolation and psychological issues like anxiety, tension, and aggressive behavior can result from prolonged use of electronic devices. And the need to safeguard interpersonal relationships and properly divide time between studying, having fun with friends, and checking electronic devices.

First: episode criteria and goals

▪ Episode criteria:

- Determine the psychological damage caused by excessive use of computers and electronic devices.

- Determine how to avoid the psychological damage caused by the excessive use of computers and electronic devices on public health.

- Determine how to organize and manage time while using a computer and electronic devices.

▪ Episode goals:

- For students to realize that being constantly preoccupied with electronic devices affects their social relationships.

- For students to protect themselves from the harm of social isolation caused by electronic devices.

- For students to realize the importance of balancing studying, having fun with friends, and using electronic devices.

Second: pre-presentation of visual content:

▶ Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

▶ Personal evaluation questions

- Can the use of computers or electronic devices cause mental distress?

- Mention some of the psychological risks related to using computers and electronic devices.

- Is it possible to protect ourselves from the psychological effects related to using computers and electronic devices?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

▶ Final evaluation questions:

- Mention some psychological harm related to the use of computers and electronic devices.

- Clarify how it is possible to avoid the psychological harm related to the use of computers and electronic devices.

- How did electronic devices affect social relationships?

- How do I manage my time correctly when dealing with electronic devices?

▶ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

▶ Enrichment questions:

- How do you feel when using computers and electronic devices?

- During family gatherings. do you use your phone or computer? What do you think about this?

- Give some examples of psychological illnesses that come with prolonged use of electronic devices.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Protecting the computer

Episode 8:
Fourth Grade: First Semester

Episode summary:

This visual content explains the importance of creating strong, hard-to-guess passwords and keeping them private. You'll learn why you should never share your passwords or use common words, and how these simple steps can secure your computer from hacking.

First: episode criteria and goals

◉ Episode criteria:

- The ability to know how to choose a strong password.

- The ability to define risks related to viruses that infect computers.

- The ability to define how to protect the computer from malicious programs and virus threats.

◉ Episode goals:

- For students to mention the most important rules for creating strong passwords.

- For students to protect their personal devices from hacking and viruses.

- For students to realize the importance of taking needed precautions to protect computers from viruses.

Second: pre-presentation of visual content:

▶ Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

▶ Personal evaluation questions

- Can computers be exposed to programming threats and risks?

- What is meant by viruses that infect computers?

- Is it possible to protect computers from virus threats?

- What are the tools that can provide computer protection from viruses?

- Does any password sufficiently protect your information from hacking?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

▶ Final evaluation questions:

- What are the rules for creating a strong password?

- Can we share passwords with others?

- How can we protect our devices from viruses?

◗ Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

◗ Enrichment questions:

- Have your phone or computer been hacked before?

- If you get hacked, what will you do?

- Give examples of strong passwords following the correct creation rules.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Software licensing

Episode 9:
Fourth Grade: Second Semester

Episode summary:

This visual content discusses the significance of using licensed software and the dangers Legal issues due of unauthorized software and information use. not to use or download any untrusted software without authorization; to shield electronic devices from harm and avoid accountability.

First: episode criteria and goals

Episode criteria:

- The ability to define the meaning of software licenses.

- The ability to specify how to comply with software licenses.

Episode goals:

- For students to explain the importance of using licensed software.

- For students to learn the meaning of "software license".

- For students to avoid unauthorized use of software and information.

- For students to realize the importance of not downloading any unlicensed or trusted software.
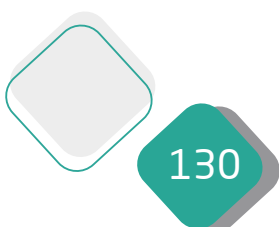
Second: pre-presentation of visual content:

▸ Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

▸ Personal evaluation questions

- Is it possible to incur legal consequences for using software without a license?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

▸ Final evaluation questions:

- What do you know about software licenses?

- Can you get in legal trouble when using the Internet?

- What are the legal repercussions of using unlicensed software?

- How are legal offenses committed while using the Internet?

- How do we avoid getting into legal problems while downloading software?

◗ Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

◗ Enrichment questions:

- What is unlicensed software?

- What are the legal steps to download licensed software?

- List examples of disadvantages consequences of using unlicensed software.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
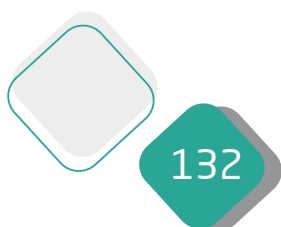
Intellectual property rights

Episode 10:
Fifth Grade: Second Semester

Episode summary:

Before using any electronic game, image, or proprietary material, this visual content discusses the necessity of obtaining permission for it. Additionally, the necessity of respecting intellectual property and adhering to laws to safeguard our rights and those of others.

First: episode criteria and goals

Episode criteria:

- Define the concept of intellectual property.

- Determine how to avoid the legal consequences of infringing intellectual property rights.

Episode goals:

- To familiarize students with intellectual property rights.

- For the student to realize the consequences of non-compliance with intellectual property rights.

- To make students realize the importance of respecting intellectual property.

- For the students to realize that permission must be obtained before using any electronic game or proprietary material.

Second: pre-presentation of visual content:

● **Preparing visual content:**

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

● **Personal evaluation questions**

- What do you know about intellectual property?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

● **Final evaluation questions:**

- What is intellectual property?

- How are intellectual property rights violated?

- Give examples of intellectual property.

- How do we avoid falling into legal problems related to intellectual property rights?

● Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

● Enrichment questions:

- What are the consequences of intellectual property rights infringement?

- Before using any online content, how can you be sure of its intellectual rights?

- Why should intellectual property rights be respected?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Digital piracy

Episode 11:

Fifth Grade: Second Semester

Episode summary:

This visual content discusses the importance of respecting intellectual property owners' copyrights to prevent piracy and theft of their innovations. Additionally, issue a warning against infringing copyrights and making unauthorized use of an intellectual property.

First: episode criteria and goals

Episode criteria:

- Define copyright.

- Defining what is meant by information piracy.

- Determine the legal consequences of copyright infringement and unauthorized use of intellectual property.

Episode goals:

- For students to not use intellectual property material illegally.

- For students to learn the importance of knowledge of intellectual property and copyright rules.

Second: pre-presentation of visual content:

◉ Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

◉ Personal evaluation questions

- What do you know about copyright?

- What do you know about information hacking?

Third: During the presentation of visual content

During the presentation the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

◉ Final evaluation questions:

- What is copyright?

- What is information piracy?

- Who gets copyrights?

- What is the unauthorized use of intellectual property material called?

- Why should we know about copyright infringement laws?

● Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

● Enrichment questions:

- What are the consequences of copyright infringement?

- What are the steps to document online content before publishing?

- What do you know about information piracy? state five facts.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
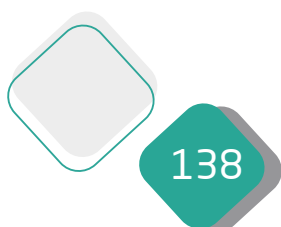
Online publishing and social media

Episode 12:
Sixth Grade: Second Semester

Episode summary:

This visual content discusses the significance of social media and its potential as a wonderful and useful innovation if properly utilized and safety guidelines adhered to. and the need to exercise caution when utilizing these methods, because it might make us vulnerable to fraud and other dangers.

First: episode criteria and goals

▸ Episode criteria:

- Determine the pros and cons of social networking sites.

- Determine how to avoid the disadvantages of social networking sites.

▸ Episode goals:

- For students to learn the most prominent benefits of social media.

- For students to protect themselves when using social media.

- For students realize the need to be careful while using social media in order to avoid the risks of fraud.

Second: pre-presentation of visual content:

▪ Preparing visual content:
Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

▪ Personal evaluation questions
- What are social media platforms?
- What do you know about the benefits and harms of social media platforms?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

▪ Final evaluation questions:
- Mention some of the advantages of social networking sites.
- Mention some of the disadvantages of social networking sites.
- How can we avoid the disadvantages of social networking sites?
- Is social media always safe?
- What are the things that are not allowed to be posted on social media?

Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enrichment questions:

- How did social media originate? List examples of it.

- What are the disadvantages of unlimited use of social networking sites?

- What did you gain from social media? How does it harm you?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Cyberbullying

Episode 13:

Sixth Grade: Second Semester

Episode summary:

This visual content discusses the dangers of cyberbullying and cautions against speaking, publishing images or clips of visual content, or making offensive comments on other people's pages. And not to share any posts that are inappropriate or could harm other people's mental health.

First: episode criteria and goals

▶ Episode criteria:

- The ability to define the concept of cyberbullying.

- The ability to identify forms of cyberbullying.

▶ Episode goals:

- For students to learn the concept of cyberbullying.

- To mention some forms of cyberbullying.

- For students to learn about the harmful effects of cyberbullying.

- For students to know which posts they should avoid to not harm others.

- For students to not harm others using any form of cyberbullying.

Second: pre-presentation of visual content:

▶ Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

Personal evaluation questions

- What is bullying?

- What is cyberbullying?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- What is cyberbullying?

- Mention some forms of cyberbullying?

- Is it ok to bully or offend others?

- What types of posts should you avoid when it comes to others?

Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● **Enrichment questions:**

- What are the known boundaries when using social media?

- What do you think of cyberbullying? Have you ever been exposed to it?

- What steps would you take if you encountered cyberbullying on social media?

Fifth: Taking notes of the episode:

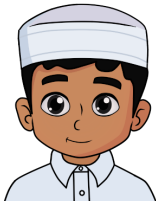The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
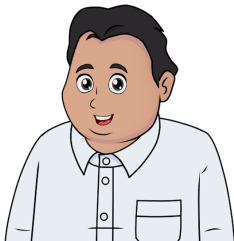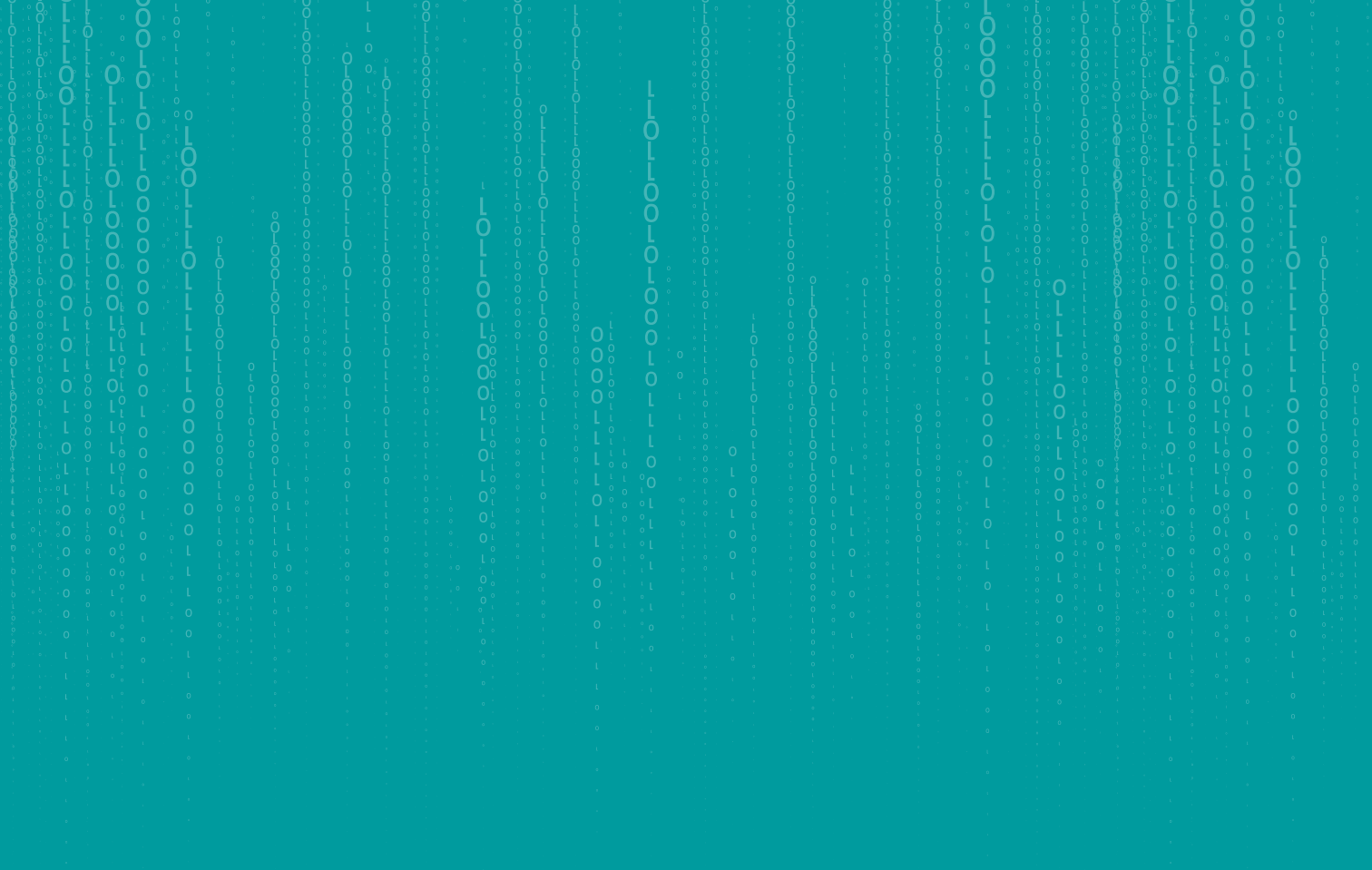
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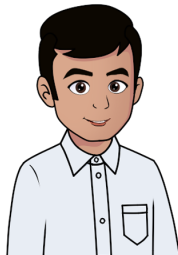
Middle school

Middle school Characters

Series	characters	Importance to the curricula	Character appearance setting	Image of the character
1	**The trainer**	A main character who is well-versed in computer technology and delivers knowledge to his students with ease and amusement.	School	
2	**Nasser**	A main character who is a diligent, courteous, and serious student who always has a lot of information about lesson topics, and consistently participates.	School/ family home	
3	**Rashed**	A nice and calm student who likes to ask questions and deduce information.	School	
4	**Jassim**	A cheerful student who loves to create an atmosphere of fun, and jokes with his classmates and his Trainer and is friendly with everyone.	School	

Series	characters	Importance to the curricula	Character appearance setting	Image of the character
5	**Khaled**	He is an intelligent older brother and is a polite, elegant young man who has extensive knowledge about information technology.	family home	
6	**Fatima**	A main character who is nice and helpful and a hardworking student who knows a lot about data and network security.	family home	
7	**Mohamed**	A cheerful child who is interested in learning and asks a lot of questions. He occasionally gets into trouble, but his siblings always help him and correct his mistakes.	family home	
8	**Saleh the Robot**	A main character in all stages, its appearance remains unchanged, and it appears at the end of each visual content to summarize the lesson.	School/ family home	

Trainer Guidebook For
Cybersecurity Education Curriculum

Visual content for middle school

Malware

Episode 1:
Seventh Grade: Second Semester

Episode summary:

This visual content discusses the dangers posed by malware that is intended to harm devices or corrupt data and prevent devices from functioning properly. Such as: Adware, Spyware, Worms, and Trojans

First: episode criteria and goals:

● Episode criteria:

- The ability to define the concept of malware.

- The ability to define the types of malware.

● Episode goals:

- For students to learn the concept of malware.

- For students to learn the risks of malware.

- For students to give examples of malware.

- For students to be careful of malware when using their electronic devices.

Second: Pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions

- Are all software useful?
- What are malicious software programs?
- Can you protect yourself from malware?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- What is malware?
- How is malware created?
- Give examples of malware.
- Mention the effects of malware.

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

Enrichment questions:

- How does malware harm your data?

- How do you identify malicious software? How do you avoid it when you use the Internet?

- How do you differentiate between malware and beneficial software?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Protecting networks from malware

Episode 2:

Seventh Grade: Second Semester

Episode summary:

This visual content explores essential ways to protect network-connected devices from malicious programs and viruses. These strategies include keeping usernames and passwords confidential, avoiding emails from unknown senders, creating strong and regularly updated passwords, steering clear of suspicious websites, and maintaining up-to-date antivirus software.

First: episode criteria and goals:

◗ Episode criteria:

- The ability to define the procedures used to protect the computer from malware software

- The ability to avoid visiting suspicious websites.

◗ Episode goals:

- For students to learn how to protect their devices from malware software.

- For students to learn the risks of malicious software on their devices and personal accounts.

- For students to learn what are suspicious websites.

- For students to learn how to use antivirus software.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions

- Is it possible to protect our electronic devices from malware?
- How can we protect our electronic devices from malware?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- How can we protect our electronic devices from malware?
- How do we protect our passwords?
- Why shouldn't we give our personal information to suspicious websites?
- Define when we shouldn't open emails?

Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enrichment questions

- Do you share your personal data on websites?

- What would you do if you received an email from an unknown source?

- How can you protect your phone or computer using strong passwords?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
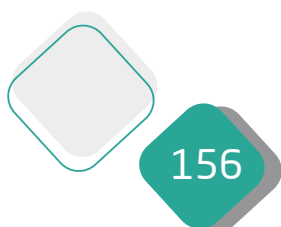
The benefits of social media

Episode 3:
Seventh Grade: Second Semester

Episode summary:

This visual content discusses the benefits of social media, including the fact that it makes it possible to communicate with people all over the world, facilitates the exchange of ideas with other people, makes it easier to access news and information, and aids in e-marketing and business operations.

First: Episode criteria and goals

- **Episode criteria:**
  - Define the benefits of social media.
  - Give some examples of social media websites.

- **Episode goals:**
  - For students to learn the benefits of social media.
  - For students to realize the importance of communicating with others and exchanging information and ideas.
  - For students to give some examples of social media websites.
  - For students to use social media carefully.

Second: Pre-presentation of visual content:

● Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

● Personal evaluation questions

- What are social media networks?

- Are there benefits to social media websites?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

● Final evaluation questions:

- Are social media websites useful?

- What are the benefits of social media websites?

- List the types of social media networks that you know.
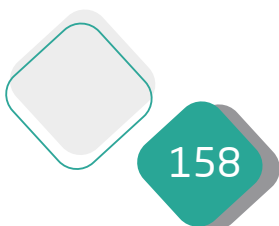
Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enrichment questions

- How can you benefit from social media?

- What annoys you while using social media?

- How can you protect your accounts on social media While online shopping ?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

The challenges of social media networks

Episode 4:
Seventh Grade: Second Semester

Episode summary:

This visual content discusses social media's difficulties, as it has an impact on real relationships, wastes time, encourages the spread of rumors, and has the potential to put its users at risk for cyberbullying, data theft, and privacy violations.

First: episode criteria and goals:

- **Episode criteria:**
  - The ability to identify the negatives of social media.
  - Dealing with social media carefuly

- **Episode goals:**
  - For students to learn the challenges and risks of social media.
  - For students to protect themselves from the dangers of social media.
  - For students to realize that it's important to be careful and avoid mistakes when using social media.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions
- Do social media platforms have disadvantages ?
- Why can't we post personal information on social media?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:
- Identify the disadvantages of social networking sites.
- How can we protect ourselves from the disadvantages and dangers of social networks?
- What information should I avoid posting on social media?

◗ Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

◗ Enrichment questions:

- How often do you use social networking sites? How does it negatively affect your social relationships?

- What do you use social networking sites for? for entertainment, learning, or communication?

- When you use social networking sites, are you asked to share your data? What would you do?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Computer security procedures

Episode 5:
Seventh Grade: Second Semester

Episode summary:

This visual substance discusses methods for safeguarding the computer by installing antivirus programs on it, and regularly updating it so that you detect new malware and avoid closing the firewall because network loopholes are the target of viruses.

First: episode criteria and goals:

◗ Episode criteria:

- The ability to know the procedures to protect electronic devices.

- The ability to define the programs used to protect devices from malware.

◗ Episode goals:

- Students should know the most important computer protection methods.

- That students be able to install and update anti-virus software on the computer.

- That the students realize the importance of installing anti-virus software on the computer and continuously updating it.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions

- What are the risks that you can face when using the Internet?

- Do you know examples of protection programs used when using the Internet?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- Mention some software risks that you may encounter while browsing the Internet.

- mention computer protection tools from malware software .

- What is an anti-virus?

- What does an antivirus program do?

- Why is it not advisable to disable the firewall?
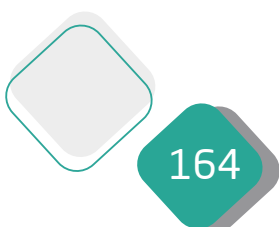
● Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

● Enrichment questions:

- How to protect your computer from hacking?

- Mention the benefits of a firewall. and what is its relation to harmful viruses?

- Which antivirus program do you use? List its advantages and disadvantages.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Network communication protocols

Episode 6:

Seventh Grade: Second Semester

Episode summary:

This visual content deals with the communication protocol in networks, which is a digital system that includes rules for exchanging messages. to ensure that it arrives properly; Where the information is divided into packages in which the transmitter and receiver are identified so that a confirmation is sent to the sender when the packet is received by the receiver. When the packet is lost, it is retransmitted again.

First: episode criteria and goals:

◗ Episode criteria:

- The ability to define the concept of communication protocol in networks.

- The ability to identify parts of a service pack in networks.

◗ Episode goals:

- Students should know the concept of network communication protocol.

- Students should become acquainted with the mechanism of exchanging messages to ensure that they are delivered in the correct manner.

- Students should identify the parts of the service package in the networks and the components of each part.

Second: pre-presentation of visual content:

◗ Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.
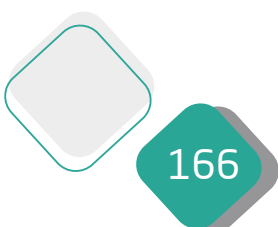
Personal evaluation questions

- What is meant by networks?

- What is meant by inter-network communication?

- Are there specific procedures to activate communication between networks?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- What is the concept of communication protocol?

- How does communication protocol work in networks?

- What are the benefits of communication protocol in networks?

- mention the parts of the packet.

- What are the components of each part of the packet?

◗ Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

◗ Enrichment questions:

- How does your computer connect to different networks?

- What is the mechanism for exchanging messages between different networks?

- What are the components of a communication protocol?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Data privacy

Episode 7:
Eighth Grade: Second Semester

Episode summary:

This visual content talks about the importance of preserving data privacy, and not giving personal data to anyone over the Internet. Because this may involve the risk of exposing the person to theft. Therefore, it is necessary to refrain from sharing personal information with others.

First: episode criteria and goals:

▸ Episode criteria:

- Being able to identify the risks of sharing personal information online.

- The ability to determine how to protect privacy on internet sites.

▸ Episode goals:

- Students should know the concept of «personal data».

- Students should know the importance of maintaining the privacy of personal data.

- Students should realize the importance of refraining from sharing personal information with others.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- **Personal evaluation questions**
  - What is meant by data privacy?
  - Why should personal information not be shared on any website?
 - Are there risks in sharing information online?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- **Final evaluation questions:**
  - How do we protect our personal data from theft?
  - What are the risks that we may be exposed to if personal data is given over the Internet to an unreliable party?
  - What data can you be asked for?
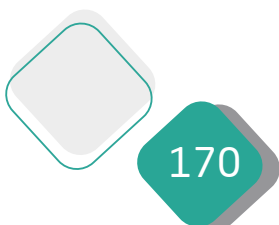
Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enrichment questions:

- What personal information and data you cannot share?

- How can hackers exploit personal data to harm the user?

- What are the limits on sharing private data online?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Children's personal information

Episode 8:
Eighth Grade: Second Semester

Episode summary:

This visual content talks about the necessity of preserving children's data and not disclosing it so that they are not exposed to abuse, and the necessity of reading the privacy statement that explains the type of information and the reason for its request, and where it will be used.

First: episode criteria and goals:

Episode criteria:

- Identifying the risks that children face while browsing the Internet.

- Full awareness of the risks of sharing personal data.

Episode goals:

- For students to know the necessity of preserving children's data.

- Students should be able to properly deal with children's personal information and not disclose it.

- To make the students aware of the dangers of sharing children's data via the Internet.
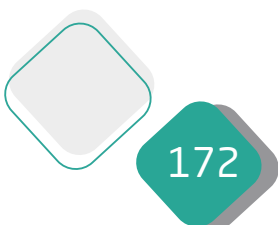
Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- ### Personal evaluation questions
  - Do children face more risks online than adults?
  - Can children protect themselves while browsing the Internet?

Third: During the presentation of visual content:

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- ### Final evaluation questions:
  - Identify the risks children face while surfing the Internet.
  - How can we protect children's personal data?
  - Can we trust the people we meet online?

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

Enriching questions:
- What are the limits of children's use of the Internet?
- What would you advise your little brother who recently started using social media?
- What are the risks involved in children's use of the Internet?

Fifth: Taking notes for the episode:
The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Backup and protecting databases

Ninth Grade: Second Semester

Episode summary:

This visual content talks about protecting databases by making backup copies, and placing them in a secure, protected system that can be accessed when needed. Backups can be stored on an online storage account or on various external storage media.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to specify the types of data to be backed up.

- **Episode goals:**
  - Students should know the role of backup in protecting databases.

  - Students should realize the importance of backing up information and placing it in a secure system.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

◗ Personal evaluation questions
- Can data stored on a computer be lost?

- Can data be protected from damage or loss?

- Do you have an idea about backup?

Third: During the presentation of visual content:
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

◗ Final evaluation questions:
- Can we lose our data stored on our electronic devices?

- How can we protect our data from loss?

- Determine the importance of backing up your data.

- Where can we store the backup file?
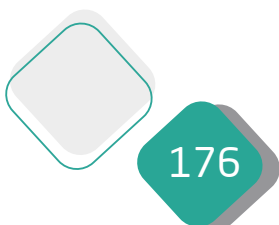
● Enrichment activities:

Competition between two teams: The trainer divides students into two teams,and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● Enriching questions:

- What are the benefits of data backup?

- What do you know about data backup?

- Give examples of important data that you need to back up.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Backup and protecting databases with password

Episode 10:
Ninth Grade - Second Semester

Episode summary:

This video talks about protecting databases and backups with strong passwords, to provide protection for files and data. When setting the password for the database, it must be opened in Exclusive Mode.

First: episode criteria and goals

◗ Episode criteria:

- The ability to implement application examples of data backup.

- Implementation of practical examples on choosing passwords for backup files.

◗ Episode goals:

- Students should realize the importance of making backup copies to protect data.

- Students should make backup copies on a personal computer or upload them to the Internet.

- Students should recognize the role of the password in protecting the backup databases.

- Students should create a password to protect the databases and files.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

◗ Personal evaluation questions

- Decide how to protect the backed-up data.

- Select how to create a password to protect the backed-up data.

Third: During the presentation of visual content:

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

◗ Final evaluation questions:

- How can I protect my work and prevent others from accessing it?

- Explain the importance of data backup.

- How does data backup work?

- How do I create a password to protect databases?

Enrichment activities:

Competition between two teams: The trainer divides students into two teams,and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

Enrichment questions:

- What is meant by databases? and how can they be protected?

- Why is a strong password important for backed-up data?

- What is Exclusive Mode? What is its importance?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
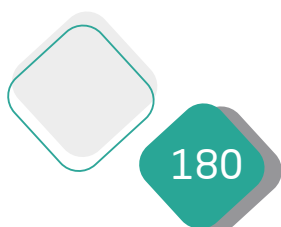
Online Meetings

Episode 11:

Ninth Grade: Second Semester

Episode summary:

This video talks about online meetings, where a remote meeting can be held via the Internet, which allows many details to be shared through it, such as files, data, and presentations. There are modern applications that have been employed for this purpose, such as Zoom.

First: episode criteria and goals

▶ Episode criteria:

- The ability to organize a remote meeting with other students using modern applications.

▶ Episode goals:

- Students should recognize the importance of online meetings via the Internet.

- Students should be able to hold a meeting remotely via the Internet.

- Students should realize the importance of applications that can be used to hold online meetings.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- ### Personal evaluation questions
  - Is it possible to use the Internet to hold remote meetings?
  - Are online meetings live or recorded?
 - Can anyone organize an online meeting with another person?

Third: During the presentation of visual content:

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

- ### Final evaluation questions:
  - What does an online meeting mean?
  - Mention an application that can be used to hold remote meetings.
  - Outline the benefits of online meetings.
  - What are the things that the Internet allows us to share?
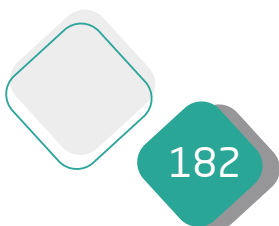
◗ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

◗ Enriching questions:

- Have you tried online meetings before? How do you see this experience?

- In regard to the Covid pandemic, mention the importance of online meetings.

- How can you use the Internet to hold a meeting with your colleagues remotely. Mention the name of the program.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Best Practices for Working Online

Episode 12:

Ninth Grade: Second Semester

Episode summary:

This visual content talks about best practices for working online, adherence to proper procedures to reach the best results, sharing information with caution, being mindful of potential hardships such as different languages and cultures, and avoiding sharing personal information with strangers.

First: episode criteria and goals

◗ Episode criteria:

- The ability to define online privacy protection measures.

◗ Episode goals:

- Students should become familiar with the proper procedures that guarantee the best results for remote meetings.

- Students should cautiously share information online.

- Students should avoid sharing personal information with strangers.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.
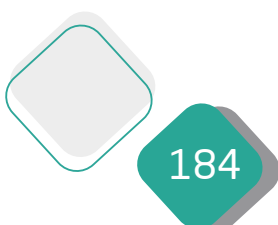
Personal evaluation questions

- What are the risks that you may be exposed to while using the Internet?

- Can the risks on the Internet be avoided?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

Final evaluation questions:

- Are online meetings secure?

- What are the risks that you may be exposed to while using the Internet?

- Determine the procedures required to securely share information on websites.

- How do you deal with cultural and social differences with others on the Internet?

- What are the proper procedures and practices that guarantee the best results for remote meetings?

- Why should we avoid capitalizing English texts?

● Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● Enriching questions:
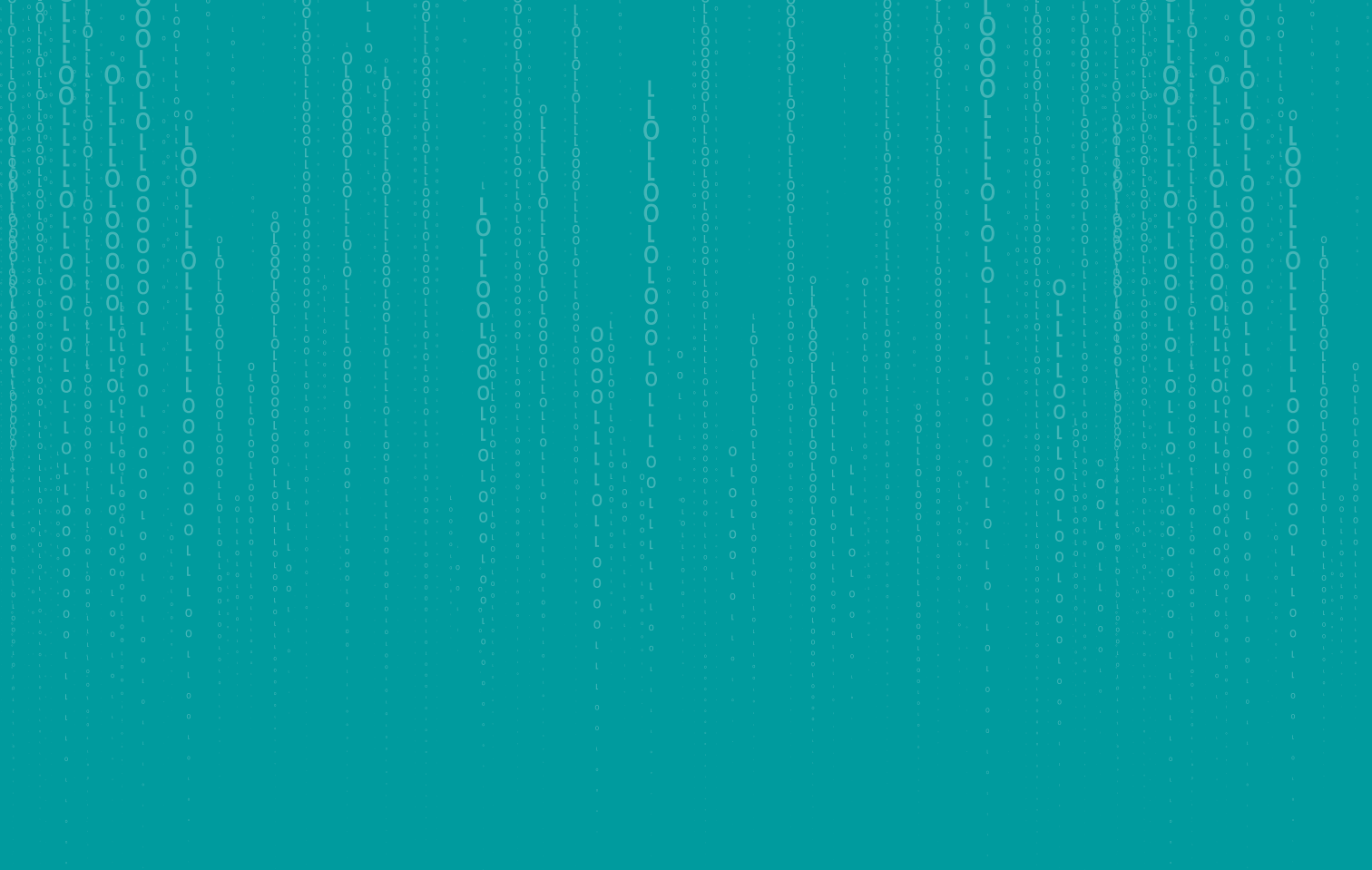
- Provide examples of safe and successful online communication practices.

- How do you guarantee the rights of others when using social media?

- What are the limits on sharing your data and photos online?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
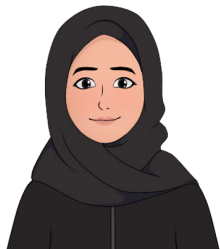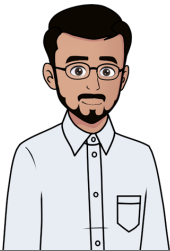
Thirdly:

High school
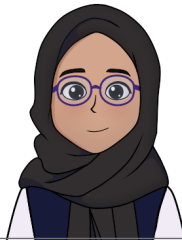
High school characters

Series	characters	Importance to the curricula	Character appearance setting	Image of the character
1	**The trainer**	A main character who is well-versed in computer technology and delivers knowledge to his students with ease and amusement.	school	
2	**Female trainer**	The female Trainer sometimes acts on behalf of the male Trainer. She is a lovely young woman who loves her students and provides them with information in an easy and enjoyable manner.	school	
3	**Nasser**	A main character who is a diligent, courteous, and serious student who always has a lot of information about lesson topics, and consistently participates.	School/ family home	
4	**Rashed**	A nice and calm student who likes to ask questions and deduce information.	school	

Series	characters	Importance to the curricula	Character appearance setting	Image of the character
5	**Jassim**	A cheerful student who loves to create an atmosphere of fun, and jokes with his classmates and his Trainer and is friendly with everyone.	school	
6	**Khaled**	He is an intelligent older brother and is a polite, elegant young man who has extensive knowledge about information technology.	family home	
7	**Fatima**	A main character who is nice and helpful and a hardworking student who knows a lot about data and network security.	family home	
8	**Mohamed**	A cheerful child who is interested in learning and asks a lot of questions. He occasionally gets into trouble, but his siblings always help him and correct his mistakes.	family home	

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Series	characters	Importance to the curricula	Character appearance setting	Image of the character
9	**Mariam**	Nice and friendly personality, diligent in school, and serious.	Girls' school	
10	**Aisha**	A cheerful and rambunctious student, less diligent than her two friends, but always asking questions and seeking knowledge.	Girls' school	
11	**Saleh the Robot**	A main character in all stages, its appearance remains unchanged, and it appears at the end of each visual content to summarize the lesson.	School/ family home	

Visual content
for high school

Evaluating Information Sources on the Internet

Episode 1:
Tenth Grade: First-semester

Episode summary:

This visual content talks about how to evaluate information sources on the Internet through 6 basic criteria for evaluating electronic resources, which are: responsible party, purpose, coverage, accuracy, validity, objectivity, and credibility.

First: episode criteria and goals

● Episode criteria:

- The ability to identify reliable sources of information on the Internet.

● Episode goals:

- Students should be familiar with the method of evaluating information sources on the Internet.

- Students should be able to measure the accuracy of the information they obtain via the Internet.

- Students should obtain information via the Internet from reliable sources.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- ## Personal evaluation questions
  - Is all information on the Internet true and accurate?
  - Is it possible to determine the accuracy and validity of the information on the Internet?
  - Are there sources of information better than others?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- ## Final evaluation questions:
  - What is meant by accurate and objective data?
  - List the criteria for evaluating electronic resources.
  - Is all the information we get online reliable?
  - How do I know if the source of information is correct or not?
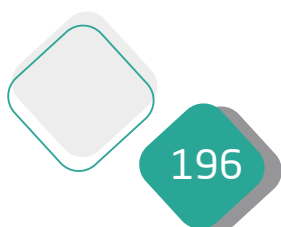
◗ Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

◗ Enriching questions:

- Give examples of the basic criteria for evaluating electronic resources.

- Do you follow the criteria for evaluating electronic resources when searching for information?

- In your opinion, why is there so much misleading information and data on the Internet?

Fifth: Taking notes for the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Tracking and privacy

Episode 2:
Tenth Grade: Second Semester

Episode summary:

This visual content talks about the online data tracking policy, and that the Internet user leaves behind a huge amount of information since Google tracks every user's movement on the Internet. It points out that Qatar is the first Gulf country to impose a law to protect personal data.

First: episode criteria and goals:

- **Episode criteria:**
  - The ability to protect against online data tracking.

- **Episode goals:**
  - Students should be familiar with the online data tracking policy.
  - Students should protect themselves from trackers on the Internet.
  - Students should realize the importance of the State of Qatar's legislation regarding the Personal Data Protection Law.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.
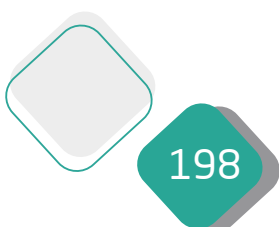
Personal evaluation questions

- Do you have an idea about being tracked online?

- Can you be exposed to risks related to surfing the Internet after closing the browser?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

Final evaluation questions:

- What is online tracking?

- How can one be protected from the dangers of being tracked via the Internet?

- What do trackers gain from knowing our personal data?

- How can we protect ourselves from trackers?

- What was the first Gulf country to impose a law on the protection of personal data, and when was it?

◗ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

◗ Enriching questions:

- What are the pros and cons of the Online Data Tracking Policy?

- How has the State of Qatar excelled in protecting personal data?

- Have you ever felt that your online activities are being tracked by someone? Give details.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.
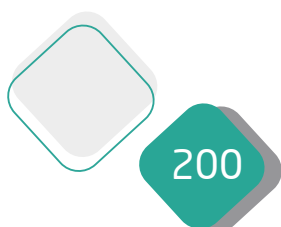
Network Security Protocols

Tenth Grade: Second Semester

Episode summary:

This visual content talks about network security, and the importance of maintaining networks from the risks of external attacks, by using network security protocols that ensure the security and integrity of data during transmission over the network, and the firewall allows data to pass if it matches the permissible standards.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to apply protection protocols when transferring data over networks.

- **Episode goals:**
  - Students should be familiar with the most important Internet security protocols.
  - Students should use network security protocols to ensure data security and integrity.
  - Students should realize the importance of activating the firewall on computers and technical devices.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

● **Personal evaluation questions**
- Can data be stolen when transmitted over networks?
- Can data be protected from theft when it is transmitted over networks?
- Do you have an idea about data protection protocols across networks?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

● **Final evaluation questions:**
- What are network security protocols?
- How does the NSP work?
- What is the firewall? How does it work?
- How do we protect networks from hacking?

Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

Enrichment questions:

- What are the mechanisms applied in network security protocol?

- What are the standards that allow data to be transmitted securely between networks?

- Do you use a firewall on your computer? State its importance.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Security and usability

Episode 4:
Tenth Grade: Second Semester

Episode summary:

The security mechanisms for data are discussed in this visual content. By being careful when dealing with spam, not opening emails from an unknown sender, creating strong passwords that are hard to guess, constantly changing them, and not sharing passwords with anyone.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to define protection measures while using e-mail.

- **Episode goals:**
  - Students should be familiar with the most important measures to protect e-mail.
  - Students should deal with spam messages, and not open any unknown messages.
  - Students should realize the importance of creating strong passwords that are hard to guess and changing them frequently.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

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◗ Personal evaluation questions

- What is spam emails?

- What are the risks associated with using email?

- What is the role of a password in email protection?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

◗ Final evaluation questions:

- What is the importance of the data validation process (Authentication)?

- Decide how to handle anonymous emails.

- How do we protect ourselves from spam?

- Determine what is true and false in the following:

    1- It is preferable to create a strong password and not change it constantly.
    2- It is preferable to use the same password for more than one account.
    3- It is preferable to keep anti-virus software up-to-date constantly.

■ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

■ Enriching questions:

- Do you get a lot of spam emails? What do you do with it?

- How do strong passwords protect email from being hacked?

- What is the data validation process Authentication? What is its importance?

Fifth: Taking notes for the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Surveillance Systems

Episode 5:
Tenth Grade: Second Semester

Episode summary:

This visual content explores monitoring systems that track specific events or situations and transmit data to other devices or servers over the internet. Examples include theft alarm systems, a common surveillance system, and even everyday appliances like washing machines air conditioners, which utilize control systems for their operation.

First: episode criteria and goals

◖ Episode criteria:

- The ability to identify the working mechanism of monitoring systems.

◖ Episode goals:

- Students should be introduced to the most important surveillance systems in virtual and real life.

- Students should be familiar with «control systems».

- Students should be familiar with the types of control systems.

- Students should understand the mechanism of work of the monitoring systems.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

▸ Personal evaluation questions

- What do you know about surveillance systems?

- Are there examples of control systems in our daily life?

- What is the benefit of monitoring systems?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

▸ Final evaluation questions:

- Explain what is meant by monitoring systems.

- What are control systems?

- What are the types of control systems? Give an example of each type.

- How do monitoring systems work?

- What are the most common and used monitoring systems?
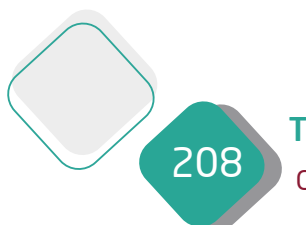
● Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● Enriching questions:

- Why are monitoring systems important?

- In your opinion, are surveillance systems beneficial to humans or not?

- In your opinion, what would happen if the surveillance systems around us were breached?

Fifth: Taking notes for the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Sensors

Episode 6:
Tenth Grade: Second Semester

Episode summary:

This visual content talks about sensors that are used to detect the presence of a signal such as motion, light, pressure, temperature change, etc. There are several types of sensors, including: temperature sensors, smoke sensors, touch sensors, motion sensors, light sensors, and pressure sensors.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to understand how sensors work.

- **Episode goals:**
  - Students should be familiar with sensors and their most prominent uses.
  - Students should realize the importance of the role of sensors in our daily lives.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- **Personal evaluation questions**
  - What do you know about sensors?
  - Temperatures are measured at home by using sensors, like air conditioners, washing machines, etc. Do you have an idea of how sensors work?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

▶ Final evaluation questions:

- What is a sensor?

- List the types of sensors.

- How do sensors work?

- Give examples of sensors that you Know.

▶ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

● Enrichment questions:

- How are sensors used to improve human life?

- Give examples of the most common types of sensors.

- Are sensor systems at risk of electronic hacking? How can it be protected?

Fifth: Taking notes for the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Information Security in Commercial Institutions

Episode 7:
Tenth Grade: Second Semester

Episode summary:

This visual content talks about information security in commercial Institutions, and that companies use passwords to access files, provide suitable devices to protect the network and e-mail, digitally educate their employees, and work on periodic automatic updates of operating systems and applications, and install protection programs.

First: episode criteria and goals

Episode criteria:

- The ability to understand data protection tools in commercial Institutions.

Episode goals:

- Students should know how commercial institutions protect their data.

- Students should be able to become aware of digital dangers and the need to protect data.

- Students should realize the importance of automatic updates of operating systems, and the installation of protection programs.
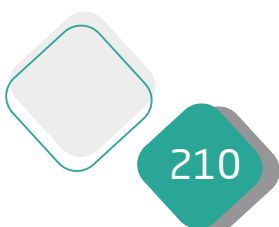
Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- ### Personal evaluation questions
  - Do the commercial institutions use data?
  - How can data be stolen in commercial institutions?
  - Can data security be protected from theft in commercial institutions?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- ### Final evaluation questions:
  - How do banks, companies, and various institutions protect their customers' data from theft?
  - Are the following procedures true or false?
  - Educating employees digitally.
  - Automatic updates of operating systems and applications.
  - Install and update security software only once.

● **Enrichment activities:**

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

● **Enrichment questions:**

- How does data constitute vital importance for commercial institutions?

- What is the importance of the periodic automatic update of operating systems and applications in organizations?

- Mention the most important data protection programs and their advantages.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Research and verifying the quality of information.

Episode 8:

Eleventh Grade: First Semester

Episode summary:

This visual content talks about how to search and check the quality of information on the Internet, and that when collecting information about a specific idea or when visiting a website, the information quality standards must be checked, which include: accuracy, relevance, timeliness, level of detail, and adequacy.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to identify reliable sources of information on the Internet.

- **Episode goals:**
  - Students should know the importance of «quality of information».
  - Students should search for reliable information on the Internet.
  - Students should check the quality of the information on the Internet.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- **Personal evaluation questions**
  - Is all information on the Internet true and accurate?
  - How can you determine the accuracy and validity of information on the Internet?
  - If you want to know the date of the achievement tests, which websites do you go to?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

● Final evaluation questions:

- What is the importance of information quality ?

- What are the information quality standards?

- Is it true that some websites provide incorrect information?

● Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● Enrichment questions:

- What is the difference between primary data and secondary data?

- How do you check the quality of data on websites?

- Mention by examples two criteria of information quality.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Data collection and verification

Episode 9:

Eleventh Grade: First Semester

Episode summary:

This visual content talks about how to collect data and verify its credibility on the Internet, by having excellent research tools, and relying on reliable data sources.

First: episode criteria and goals

▪ Episode criteria:

- The ability to identify reliable sources of data collection.

▪ Episode goals:

- Students should know how to collect and verify data.

- Students should be familiar with the sources of data collection.

- Students should mention examples of data collection sources.

- Students should realize the importance of relying on reliable data sources.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- **Personal evaluation questions**
  - If you want to know about cultural events in the State of Qatar in Katara, which websites do you go to?
  - If you were asked to write a research paper on Qatar Rail, what would be the first step you would take?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- **Final evaluation questions:**
  - What is the data collection phase?
  - Categorize the data collection sources.
  - What are the main data sources?
  - What are examples of data collection tools?
  - What are the secondary data sources?
  - What is the classification of secondary data? Mention examples of each.

● Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

● Enrichment questions:

- What is the difference between primary data and secondary data?

- How do you check the usefulness of the data you want to collect online?

- What is the mechanism for collecting and classifying data?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Data Encryption

Episode 10:
Eleventh Grade: First Semester

Episode summary:

This visual content talks about a way to protect data by encrypting it and hiding it from unwanted people. So that only the person who has the decryption key can access it. There are two main types of encryptions. They are: symmetric encryption and asymmetric encryption.

First: episode criteria and goals

◗ Episode criteria:

- The ability to understand the mechanism of the data encryption process.

◗ Episode goals:

- Students should be familiar with the data encryption process.

- Students should be familiar with the types of data encryption.

- Students should realize the importance of hiding data from other people.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions

- What do you know about data encryption?

- What is the point of data encryption?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

Final evaluation questions:

- What is data encryption?

- State the types of data encryption.

- Why do we use data encryption?

- What is Symmetric Encryption?

- What is Asymmetric Encryption?

Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enriching questions:

- What is the difference between symmetric encryption and asymmetric encryption?

- What data may be encrypted? And which type will you choose?

- What is the data encryption mechanism?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

System Design - Security issues related to systems

Episode 11:
Eleventh Grade - Second Semester

Episode summary:

This visual content talks about the mechanisms for identifying the elements and components of the system; Through analysis, design, implementation, testing, and then publication. During the design phase, system elements, components, and system interfaces are identified, such as system architecture, hardware components, operating systems, programming, integration with other systems, and system security issues.

First: episode criteria and goals

Episode criteria:

- The ability to understand the system life cycle.
- The ability to understand the system design stage.

Episode goals:

- Students should be familiar with the stages of the system life cycle.
- Students should mention the elements and components of the system.
- Students should be acquainted with the processes that take place in the system design stage.
- Students should realize the importance of taking into account the security issues of the system.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- ### Personal evaluation questions
  - What do you know about systems?
  - What are the stages of preparing the METRASH application?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- ### Final evaluation questions:
  - What are the stages of the system life cycle?
  - What are the components of the system?
  - What are the processes that take place in the system design phase?

● Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● Enrichment questions:

- What is the system design mechanism?

- Mention an example of an application you want to design, and what are the steps you will follow?

- Give an example of a real-world application and explain its life cycle.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Cloud computing - Information Security

Episode 12:
Eleventh Grade: Second Semester

Episode summary:

This visual content talks about the importance of cloud computing and protecting information security. Cloud computing is characterized by the ability to expand according to the growth of the organization, the possibility of accessing systems from anywhere, its lower cost, and the lack of need for technical support and information technology specialists.

First: episode criteria and goals

- **Episode criteria:**
  - The ability to understand how the mechanism of cloud computing works.

- **Episode goals:**
  - Students should know the importance of cloud computing and protecting information security.

  - Students should know the concept of "public cloud computing".

  - Students should know the concept of "private cloud computing".

  - Students should mention examples of cloud computing.

  - Students should know the factors of using cloud computing.

  - Students should mention the advantages of using cloud computing.

Second: pre-presentation of visual content:
Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

● Personal evaluation questions

- What do you know about cloud computing?

- Where do commercial institution store their data?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

● Final evaluation questions:

- What is meant by cloud computing?

- How can you benefit from cloud computing?

- Compare public cloud computing with private cloud computing.

- What factors should be considered when using cloud computing?

- What are the advantages of using cloud computing?

◉ Enrichment activities:

Roleplay: Thestudent, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

◉ Enrichment questions:

- What is the system design mechanism?

- Provide an example of an application you want to design and what are the steps to follow?

- Provide a real-life example of an application along with an explanation of its life cycle.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Are my files safe on cloud storage?

Episode 13:
Eleventh Grade: Second Semester

Episode summary:

This visual content talks about cloud storage, and that it is a technology that provides a safer service for companies to store data instead of traditional computing methods, but care must be taken when moving to the cloud, taking into account data security and adhering to digital security policies, and qualifying employees when moving to cloud computing.

First: episode criteria and goals:

Episode criteria:

- The ability to understand how cloud storage works.

Episode goals:

- Students should recognize the difference between cloud computing and cloud storage.

- Students should realize the importance of being accurate when moving to cloud computing.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

◗ Personal evaluation questions
- What do you know about cloud storage?
- Are there risks in using cloud storage?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: The post-presentation stage of the visual content:

◗ Final evaluation questions:
- Define the concept of cloud storage.
- How can I benefit from cloud storage?
- What is the difference between cloud computing and cloud storage?
- Can data be saved securely in cloud storage?
- What are the Cybersecurity considerations that should be taken into account when using cloud storage?

Enrichment activities:

Competition between two teams: the trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

Enrichment questions:

- List the advantages and risks of cloud storage.

- What are the procedures for qualifying employees when moving to cloud computing?

- State the advantages and risks of traditional computing.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Raspberry Pi-based projects - Security Surveillance Systems

Episode 14:
Eleventh Grade: First Semester / Technology Track

Episode summary:

This visual content talks about digital surveillance systems, and that a smart home is a great example of automation using a Raspberry Pi. In this type of house, it is possible to remotely monitor and control objects and devices that support this technology, and to build a surveillance system using high-resolution cameras.

First: episode criteria and goals:

▪ Episode criteria:

- The ability to understand how Raspberry Pi device works.

▪ Episode goals:

- Students should be familiar with the concept of Raspberry Pi.

- Students should be able to mention the features of smart homes.

- Students should mention examples of Raspberry Pi applications.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions

- What do you know about remote monitoring and control?

- Do you have information about smart homes?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: The post-presentation stage of the visual content:

Final evaluation questions:

- What is a Raspberry Pi device?

- What are the advantages of smart homes?

- Give examples of the uses of Raspberry Pi.

Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enrichment questions:

- Do you dream of living in a smart home? Mention your perception of it.

- What are the advantages and disadvantages of a remote monitoring and control system?

- What do you know about automation using a Raspberry Pi?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Research and Verifying the quality of information (Market Study)

Episode 15:
Eleventh Grade: First Semester / Technology Track

Episode summary:

This visual content talks about studying the market, collecting and analyzing data and information about a specific market, and the consumers in it, with the aim of knowing consumers' habits and current needs, and the products that may be popular with them. Therefore, the quality of the information should be ensured through standards of accuracy, relevance, and timing.

First: episode criteria and goals:

Episode criteria:

- The ability to understand the importance of the market study.

Episode goals:

- Students should recognize the importance of checking the quality of the information in a market study.

- Students should mention the standards of information quality in the market study.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

● Personal evaluation questions

- To understand the nature of any market that must be studied, is it possible to use websites to study the market?

- Are all the information on the Internet accurate about the market study?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content

● Final evaluation questions:

- What is a market study?

- What is the purpose of a market study?

- How to ensure the quality of information?

- How can websites be used to study the market?

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

Enrichment questions:

- How do businesses use websites and communication networks to study the market?

- What are the mechanisms that can be used to ensure the quality of information on the Internet?

- How do consumers' online behaviors and activities reveal their current needs and habits?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Online Payment Methods

Episode 16:
Twelfth Grade

Episode summary:

This visual content talks about electronic payment methods and online shopping, where it is possible to shop online using tablets and smartphones, and payment can be made upon receiving the product, or through an online payment service such as a credit or debit card, and a bank transfer can be made or by using transfer companies.

First: episode criteria and goals:

- **Episode criteria:**
  - Understanding the mechanism of the electronic payment process.

- **Episode goals:**
  - Students should be familiar with the concept of online shopping.
  - Students should be familiar with electronic payment methods.
  - Students should realize the importance of benefiting from modern technologies in shopping.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

▸ Personal evaluation questions

- Have you previously made any online purchases?

- How can I pay online?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

▸ Final evaluation questions:

- What is meant by electronic payment?

- What is online shopping?

- How are online purchases made?

- Mention the electronic payment methods for the goods that we buy from the Internet?

► Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

► Enrichment questions:

- What do you think about online shopping? List its advantages and disadvantages.

- What are the electronic payment mechanisms that you use in your digital transactions?

- In your opinion, what is the safest electronic payment method?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Safe Financial Transactions over the Internet

Episode 17:
Twelfth Grade

Episode summary:

This visual content talks about secure financial transactions over the Internet, and the need to follow safety steps to complete financial transactions, by updating programs on computers and electronic devices, searching for trust signs and digital certificates, reading the privacy agreement, keeping transaction records, and checking e-mail.

First: episode criteria and goals:

▸ Episode criteria:

- Follow safety tips to complete financial transactions over the Internet.

▸ Episode goals:

- Students should recognize the most important secure financial transactions via the Internet.

- Students should be familiar with the safety steps to complete financial transactions.

- Students should realize the importance of following security steps to complete financial transactions via the Internet.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

◗ Personal evaluation questions
- Are there risks during electronic payment transactions?
- How can risks be reduced during electronic payment operations?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

◗ Final evaluation questions:
- Is it safe to buy things online with a credit card?
- How can we be sure that our transactions are secure, and that credit card information goes to the right place?
- What are the safety tips for completing financial transactions?

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

Enrichment questions:

- Do you use electronic payment in your digital transactions?

- How do you protect your private data and financial accounts from hacking?

- What are the trust signals that reveal the credibility and reliability of a website?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Internet Scams

Episode 18:
Twelfth Grade

Episode summary:

This visual content talks about online scams carried out by fake websites. They offer discounts, have poor design and weak language, limited or suspicious contact options, and URLs on fake sites containing strange words, letters, or unusual domains.

First: episode criteria and goals:

▸ Episode criteria:

- The ability to avoid online scams when shopping online.

▸ Episode goals:

- Students should be familiar with the most important scam operations on the Internet.

- Students should recognize the signs of exposure to fraud.

- Students should realize the importance of being cautious of fake websites during online shopping.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions

- Are there risks during electronic payment transactions?

- How can risks be reduced during electronic payment transactions?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

Final evaluation questions:

- Mention the security steps to complete financial transactions.

- Can we fall victim to an online scam?

- How are electronic scam operations carried out?

- What are the signs indicating that we have been exposed to an electronic scam?

Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enrichment questions:

- How do you differentiate between trusted sites and fake sites?

- How did online shopping contribute to the increase in online scam cases?

- Have you ever been a victim of an online scam? How did you act?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Trust signs and safe connections

Episode 19:
Twelfth Grade

Episode summary:

This visual content is about trust signs and safe connections on the Internet. And that security banners, transaction protection symbols, and trust signs must appear on web pages that request sensitive information. A secure connection is a connection that is encrypted by one or more protocols to ensure the security of data flow between two or more parties on the network.

First: episode criteria and goals:

▸ Episode criteria:

- The ability to read trustworthiness signs on websites.

▸ Episode goals:

- Students should be familiar with the concept of trust signs on the Internet.

- Students should be familiar with the concept of secure communication.

- Students should recognize the most important signs of trust via the Internet.

- Students should recognize security logos and transaction protection symbols.

- Students should realize the importance of a secure connection to the Internet.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- **Personal evaluation questions**
  - Is it possible to know whether the website used is safe or not when it is opened?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- **Final evaluation questions:**
  - What are trust signs?
  - Give examples of trust signs.
  - What are the security measures followed by trusted sites?
  - What is a secure connection?
  - What is the benefit of a secure internet connection?

◗ Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

◗ Enrichment questions:

- What do you know about trust signs and their importance?

- How do trusted websites protect their data from electronic hacking?

- What is a secure connection? List examples of it.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Digital Security

Episode summary:

This visual content talks about digital security responsible for protecting computers, networks, programs, and data from unauthorized access, and is concerned with protecting enterprise data, everything related to saving and using that data, protecting business continuity in the enterprise, and allowing safe operation of applications built on IT systems in the enterprise.

First: episode criteria and goals:

Episode criteria:

- The ability to understand the importance of digital security in data protection.

Episode goals:

- Students are introduced to the concept of digital security.

- Students will be introduced to the role of digital security in protecting devices, networks, and data.

- Students should be able to define and explain key terms related to digital security.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- ### Personal evaluation questions
  - What do you know about digital security?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- ### Final evaluation questions:
  - What is meant by digital security?
  - What are the specializations of digital security?

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

Enriching questions:

- What do you know about the digital security for organizations?

- How do organizations protect their critical data from hacking or theft?

- What are the mechanisms used in digital security?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

The Importance of Information Security and the Triangle of Protection

Episode 21:
Twelfth Grade

Episode summary:

This visual content talks about the importance of information security, which increases with the importance of data and information available on the network, and the necessary for its availability to users without interruption. The CIA Triad consists of three elements: confidentiality, integrity, and availability.

First: episode criteria and goals:

Episode criteria:

- The ability to understand the elements of the protection triangle and its importance.

Episode goals:

- Students should know the importance of information security.

- Students should mention the elements of the triangle of protection.

- Students understand the concept of each element of the triangle of protection.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: Study conditions, and suitable information questions for their age.

● **Personal evaluation questions**
- Have you heard about any security breaches of governmental or commercial institutions?
- Do all companies use data protection tools?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

● **Final evaluation questions:**
- What is the concept of information security?
- Identify the elements of the protection triangle.
- Mention some examples of major companies being hacked over the internet?
- Explain the role of each element of the protection triangle to achieve information security?

◗ Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

◗ Enrichment questions:

- What is the importance of information and data for individuals and institutions?

- How does the organization balance between making its information available to users and protecting this information from hacking?

- What is the triangle of protection? And what are its elements? mention some examples.

Fifth: Taking notes of the episode:

At the end of the lesson, the trainer writes down his observations and evaluations of the students on the individual and group note cards.

Cybercrime

Episode 22:
Twelfth Grade

Episode summary:

This visual content talks about cybercrime and the use of computers to achieve illegal ends. Such as electronic scams, illegal distribution of copyrighted material, identity theft, invasion of privacy, online harassment, or cyber intrusion.

First: episode criteria and goals:

▶ Episode criteria:

- The ability to define the concept of cybercrime and its types.

▶ Episode goals:

- Students should be familiar with the concept of cybercrime.

- Students should list the types of cybercrime.

- Students should distinguish between types of cybercrime.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

● Personal evaluation questions

- What is the difference between physical crime and cybercrime?

- Can crimes be committed over the Internet?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

● Final evaluation questions:

- What is the concept of cybercrime?

- Mention types of cybercrimes.

- What is the difference between identity theft and privacy invasion?

- What is meant by hacking?

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

Enrichment questions:

- How has the Internet contributed to the increase in cybercrime?

- How can users protect themselves from electronic extortion?

- Mention two of the most dangerous types of cybercrime.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Personal Security Precautions

Episode 23:
Twelfth Grade

Episode summary:

This visual content talks about personal security precautions, through regular software updates, the use of antivirus and firewall software, digital communication with caution, the use of strong passwords, in addition to two or multiple verifications, periodic data backup, avoiding using public Wi-Fi networks.

First: episode criteria and goals:

▸ Episode criteria:

- The ability to take personal security precautions when dealing with the Internet.

▸ Episode goals:

- Students should list personal security precautions.

- Students should be familiar with the concept of double or multiple verifications.

- Students should realize the importance of digital communication with caution.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through study conditions, and suitable information questions for their age.

◗ Personal evaluation questions
- How can we protect our personal data from online threats?
- What are the sources of electronic threats?

Third: During the presentation of visual content
During the presentation the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

◗ Final evaluation questions:
- List personal security precautions.
- What is meant by digitally communicating with caution?
- What is two-factor or multi-authentication?
- Give examples of two-factor or multi-authentication.

● Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

● Enrichment questions:

- What personal security precautions do you take with your computer?

- Why should users of electronic devices take periodic security precautions?

- When you are abroad, do you use public WIFI? How do you protect your phone from hacking?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Malware Detection and Removal

Episode 24:
Twelfth Grade

Episode summary:

This visual content talks about the detection and removal of malicious software, and when you suspect the presence of any malicious software, you should stop online shopping and banking services on the computer, update your antivirus software, scan your computer for viruses and spyware, check your browser, and seek support.

First: episode criteria and goals:

Episode criteria:

- The ability to take the necessary steps if malware is suspected.

Episode goals:

- Students should be familiar with the signs of malware detection.

- Students should be able to act properly in the event of the suspected presence of malicious software.

- Students should be able to realize the importance of updating virus and spyware protection programs.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

Personal evaluation questions

- Is it possible to find out if a computer contains malware?

- If there is malware, can it be removed? And how?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

Final evaluation questions:

- Mention some indicators of computers being exposed to malware.

- Mention the necessary steps that you must take if there are malicious programs on the computer.

- Determine what is true and false in the following:

  1- Changes in the nature of the work of the computer are not an indication that the device is infected with malicious software.

  2- We should continue shopping online despite suspected malware on our devices.

  3- Seeking for help from technical support if there is suspicion of malware on our devices.

Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

Enrichment questions:

- What are the harmful effects of viruses on computers and electronic devices?

- What are the steps to follow when spying malware is detected?

- Mention examples of the most important antivirus programs and their advantages.

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Ransomware Attack

Episode summary:

This visual content talks about ransomware attacks and how to protect electronic devices from it by checking the router, protecting its password, using a security option for the wireless network, checking for updates of the operating system and applications, checking the firewall, and backing up important data.

First: episode criteria and goals:

◗ Episode criteria:

- The ability to determine the necessary procedures to protect against cyber-attacks.

◗ Episode goals:

- Students should be familiar with the concept of a ransomware attack.

- Students should know how to protect electronic devices from ransomware attacks.

- Students should realize the importance of updating applications and checking the firewall.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

● Personal evaluation questions
- Do you have information about ransomware attacks?
- Are there measures to protect against cyberattacks? What is it?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

● Final evaluation questions:
- What is a ransomware attack?
- What is the purpose of the ransomware attack?
- How can electronic devices be protected from a ransomware attacks?

● Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation, where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

● Enrichment questions:

- How does a ransomware attack affect the breach of private data?

- What is the mechanism of a ransomware attack ?

- If you were exposed to a ransomware attack, how would you act?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Firewall

Episode summary:

This visual content talks about the firewall, which is software or hardware used for network security, that controls incoming and outgoing traffic by analyzing the data packets and determining whether they should be allowed through or not. A firewall blocks suspicious connections, but it does not protect against email fraud, ads, and spam.

First: episode criteria and goals:

- **Episode criteria:**
  - The ability to activate the firewall in computers.

- **Episode goals:**
  - Students should be familiar with the concept of a firewall.
  - Students should know the importance of the firewall in protecting electronic devices.
  - Students should list the most important breaches that the firewall does not protect against.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

◗ Personal evaluation questions

- Do you have information about firewalls?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

◗ Final evaluation questions:

- What is a firewall?

- Why is a firewall important?

- What breaches can a firewall not protect us from?

◗ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

◗ Enriching questions:

- Do you have a firewall enabled on your computer? And why?

- How does a firewall help protect private data?

- What is the mechanism of a firewall?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

File and Folder Permissions

Episode 27:
Twelfth Grade

Episode summary:

This visual content discusses permissions for files and folders. It explains that, depending on what we want others to be able to control, we use a variety of permissions to safeguard our files and folders. One of the most significant categories of permissions is complete control, modification, reading, and execution, as well as viewing, reading, and writing folder contents.

First: episode criteria and goals:

- **Episode criteria:**
  - The ability to distinguish between file and folder permission types.

- **Episode goals:**
  - Students will recognize the importance of file and folder permissions.
  - Students distinguish between types of file and folder permissions.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

◗ Personal evaluation questions

- Can your colleague see your grades on the school certificate?

- Can you modify your grades in the school certificate? And why?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

◗ Final evaluation questions:

- Why is it important to specify file and folder permissions?

- Define the types of file and folder permissions.

- What is the difference between Full Control and Modify?

◗ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

◗ Enrichment questions:

- Give examples of your files and folders on your computer.

- What types of file and folder permissions do you use?

- Which is safer, Full Control permission or Modify permission?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students in individual and group cards.

Digital Footprint

Episode 28:
Twelfth Grade

Episode summary:

This visual content talks about our digital footprint, which is how we browse, communicate, and do other things online. They are two types: the active digital footprint we leave of our own free will, like our publications on communication sites and subscriptions to electronic lists, and the unknown digital footprint we leave unintentionally; Such as applications and sites that determine our geographical location.

First: episode criteria and goals:

◗ Episode criteria:

- The ability to define the concept of digital footprint and its types.

◗ Episode goals:

- Students should be familiar with the concept of a digital footprint.

- Students should list the types of digital footprints.

- Students should realize the importance of the digital footprint of the declaring parties.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

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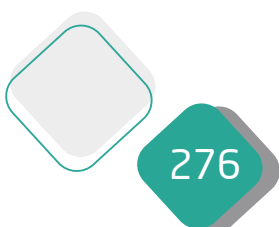
Personal evaluation questions

- How can social media platforms recognize your preferences and interests?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

Final evaluation questions:

- What is the concept of a digital footprint?

- What are the types of digital footprints?

- What is the difference between an active digital footprint and an anonymous digital footprint?

- Mention two examples of the active digital footprint and the anonymous digital footprint.

Enrichment activities:

Competition between two teams: The trainer divides students into two teams, and they participate in a competition where each team has to ask the other team questions related to the visual content with the supervision of the trainer. The trainer takes notes during the activity.

Enrichment questions:

- What is the difference between the two types of digital footprint?
- Based on your use of the Internet, Mention two examples of the active digital footprint and the anonymous digital footprint.
- How does the digital footprint contribute to the digital tracking of users?

Fifth: Taking notes of the episode:

At the end of the lesson, the trainer writes down their observations and evaluations of the students on the individual and group note cards.

Digital Tracking Effects

Episode 29:
Twelfth Grade

Episode summary:

This visual content talks about digital tracking, and that every action or browsing we do on the Internet leaves a trace called a digital footprint, which others may be able to see, such as browsing history, the sites we visit, and websites saving some information in storage memory and cookies.

First: episode criteria and goals:

- **Episode criteria:**
  - The ability to determine the effects of digital tracking.

- **Episode goals:**
  - Students should be familiar with the effects of digital tracking.

  - Students should be familiar with cookies.

  - Students should be acquainted with the browsing history.

  - Students should be aware of the importance of reviewing browsing history and cookies.

Second: pre-presentation of visual content:

Preparing visual content:
Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

- ### Personal evaluation questions
  - Can companies see which websites you have visited?
  - How can we deal with the data stored by Internet browsers?

Third: During the presentation of visual content
During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

- ### Final evaluation questions:
  - Mention some of the effects of digital tracking
  - What is meant by cookies?
  - What is meant by browsing history?
  - How can one protect against digital tracking?
  - List examples of some of our online activities in which we are being digitally tracked.

Enrichment activities:

Student presentation: With the supervision of the trainer the students create a presentation , where they play a guide to other students to train and educate them about the concepts they learned about from the visual content.

Enrichment questions:

- What are digital tracking forms on the Internet?

- How can commercial companies reach out to Internet users?

- How can you protect your privacy from digital tracking?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Browsing Social Networks Safely

Episode 30:
Twelfth Grade

Episode summary:

This visual content discusses being cautious when browsing social networks, not sharing any private information, adjusting privacy settings, verifying the identity of people with whom we communicate so that they cannot see the content we share, using strong passwords, avoiding bullies, and being cautious about a number of excessive friendships.

First: episode criteria and goals:

- **Episode criteria:**
  - Take privacy protection measures when browsing social networking sites.

- **Episode goals:**
  - Students should browse social media safely.
  - Students should realize the importance of ensuring safety while browsing social media.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

● Personal evaluation questions

- What are the risks that you may be exposed to when using social media?

- Is it possible to protect against the risks associated with browsing social media? How is that?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

● Final evaluation questions:

- Define privacy protection measures while browsing social media.

- How to be safe while browsing social media?

- What data may not be shared via social media?

● Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

● Enrichment questions:

- How does social networking contribute to increasing digital security risks?

- What kind of information do you share with your friends on social media?

- What are the steps you take to ensure that your privacy is protected on social media?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

Cybersecurity

Episode 31:
Twelfth Grade

Episode summary:

This visual content discusses the fact that Cybersecurity is a system for protecting computer systems directly connected to the Internet from any electronic attacks that could result in identity theft, attempts at blackmail, and the loss of important data. It also protects data and programs from these attacks. As a result, Cybersecurity regulations that guard against cybercrime must be adhered to and data must be safeguarded.

First: episode criteria and goals:

◗ Episode criteria:

- The ability to deal with concepts related to Cybersecurity.

◗ Episode goals:

- Students should be familiar with concept of Cybersecurity.

- Students should recognize the importance of Cybersecurity in protecting computer systems.

Second: pre-presentation of visual content:

Preparing visual content:

Preparing the student in an attractive way through: study conditions, and suitable information questions for their age.

▰ Personal evaluation questions

- What do you know about Cybersecurity?

- Is it possible to protect from the risks of electronic attacks?

Third: During the presentation of visual content

During the presentation, the trainer chooses certain timestamps to stop at, then asks questions regarding the events in it and about some of the concepts presented in the visual content.

Fourth: After presenting visual content:

▰ Final evaluation questions:

- What is the concept of Cybersecurity?

- Why is Cybersecurity so important?

- What risks can a cyberattack cause at the individual level?

- List examples of cybercrimes and electronic attacks related to Cybersecurity.

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◗ Enrichment activities:

Roleplay: The student, in a follow-up form, reenacts the visual content after each selects the desired character, gets asked about the motivation behind the choice, and repeats the process so that all students participate in the activity. The trainer takes notes as the activity is carried out.

◗ Enrichment questions:

- How does Cybersecurity affect the protection of your private data?

- In your opinion, what is the future of Cybersecurity in our Arab region?

- What are the forms of Cybersecurity penetration for individuals and institutions?

Fifth: Taking notes of the episode:

The trainer takes notes at the end of each episode and their evaluation of the students on individual and group cards.

The sixth axis
Teaching Competencies
of the Trainer

Teaching Competencies of the Trainer

This guide serves as a resource to support your outstanding work, trainers, in preparing and educating students. It aims to bridge the gap in teaching competencies for cybersecurity curricula, which has become increasingly important due to recent technological advancements across all fields.

These competencies represent a set of cognitive, skillful, and emotional abilities that the trainer possesses, and enable him to plan, implement, and evaluate students' performance in the interactive content of computing and information technology curricula. **These skills are divided into:**

First: Making plans on how to teach digital content

It is a purposeful and organized technical process that includes taking practical measures and decisions necessary to achieve educational and educational goals from digital content with high efficiency, and within specific time periods.

The importance of planning for teaching:

- Supporting the trainer in forming a complete and prior perception of digital content.
- Provide an opportunity for the trainer to analyze digital content, and extract concepts and lessons learned.
- Determine the objectives to be achieved at the student level from the interactive content.
- Organizing exposure time to the interactive content and coordinating with the syllabus presented in class.

Teaching planning consists of three stages:

The analysis stage, which includes:

- Analyzing digital content in terms of (importance / objectives / relevant concepts).
- Analyzing students and their different cognitive characteristics and skills.

The stage of designing study plans for the content, which includes:

- **Drafting the general plan for integrating digital content into the curriculum:**
  By developing a comprehensive vision of the content, its standards, objectives, and related curricula, and formulating a time plan for its implementation throughout the entire semester.

- **Formulating daily plans:**
  It is linked to the general plan for digital content and represents the detailed procedural and implementation aspect of it, in terms of analyzing content and objectives, designing classroom activities, and selecting evaluation tools.

- **Daily plans should be:**
  - Linked to the semester plan and academic unit plans.
  - Flexible and subject to modification, submission, or delay in accordance with the objectives and content of the lesson.
  - It is compatible with the students and their absorptive abilities and varying skills.

- Include content title, date, grade, and associated class.

- Including the educational objectives of the main unit and the sub-objectives of the lesson related to the content.

- A description of methods for evaluating students' comprehension of content, assessment activities, tools, and implementation time.

- Identify additional enrichment materials for the classroom curriculum and interactive content.

Designing enrichment activities:

They are educational activities that enrich the curriculum and relevant digital content, increase students' experiences, build their knowledge, and give them skills, through their practices at a specific time, according to their inclinations and aptitudes, and according to the available financial capabilities.

Enrichment activities are:

- Based on the objectives of the unit, the lesson, and the digital content.

- Contribute to the development of different types of skills.

- Adopting students' cognitive and interactive needs.

- They help in understanding of the lesson and the digital content.

- As many students as possible participate in them.

- Provide the time needed to express learning.

- Develop creativity, enjoyment, and motivation among students.

Steps for designing enrichment activities:

- **A. Content and student analysis: By answering the following questions:**
  - What are the learning priorities in the content?
  - What are the educational needs of students in terms of content?
  - How will students understand and remember the new knowledge?
  - What are the natural learning methods that will support the work?
  - What is required to do from the student to master the targeted skills?

  These questions will help the trainer determine what can be learned by discovery, what can be learned by sharing, what can be learned by practical experience, and other ways.

- **B. Planning to build and design an activity model for enrichment learning:**
  by selecting uncomplicated activities that do not require much effort in building them.

- **C. Experimenting with the built model: through the following steps:**
  - Try.
  - Meditate.
  - Modify.
  - Try again.

  In light of the results, the trainer develops a construction and design plan.

D. Implementation of the enrichment activity: through the following steps:

- It clarifies for learners the desired learning outcomes, activity steps, procedures, and the method of implementation.

- Direct the students to specific instructions for carrying out the activity, and make sure everyone understands the mechanism for carrying out the activity.

- Support students with your expectations for their learning, and motivate them to engage in the activity and interact with it.

- Watch the students by walking around between them during the implementation of the activity, and make sure that they work according to what you planned.

- Evaluates the results after completing the implementation of the activity, by following one of the evaluation methods and tools appropriate for the students and the nature of the activity in terms of (results/activity / performance) provided that the students themselves participate in the evaluation.

- Investing the results of the activity reflection, and rethinking it, to develop future activities.

Second: Implementing the presentation of digital content:

It means the trainer training behavior in the classroom with regard to digital content, which aims to achieve a number of goals related to evaluating their behavior on the Internet, and the adequacy of implementation is the practical criterion for the trainer's ability to succeed in delivering the message of digital content, and implementation is divided into:

● The preparation stage includes:

- Review the content of the digital lesson.

- View similar and related content.

- Discuss the importance of the lesson.

- Determine the educational goals to be achieved.

- Preparing for displaying digital content.

● Presentation stage:

- Explain teaching strategies for digital content.

- The mechanism of implementing the accompanying class activities in accordance with the objective and the digital content.

- The mechanism of implementing educational strategies in a way that is appropriate for digital content.

- Displaying the content at the appropriate time and place.

- Focus on one idea at a time.

- Diversity of examples to confirm understanding and take into account individual differences among students.

- Management and effectiveness of learning time.

- Ensure that students understand before moving to the next point.

- Activate the digital content in an interesting way while ensuring that all students view it.

Closing stage: it includes:

- Ensure the achievement of learning objectives and outcomes from digital content.

- Finishing the digital content of the class at the specified time.

Third: Evaluating students' performance towards digital content:

Evaluation is defined as an organized process of collecting and analyzing information. To determine the extent to which learning and educational goals are achieved from digital content and to make decisions regarding them.

Types of evaluation:

- **Personal evaluation:** Students' evaluation at the beginning of each lesson to determine their prior knowledge acquisitions, and their readiness to receive new knowledge.

- **Formative evaluation:** A systematic and organized process that takes place during the teaching of digital content, with the aim of improving the teaching and learning process of digital content, knowing the extent of students' progress in the curriculum, and thus correcting the course of the teaching and learning processes.

- **Summative (final) evaluation:** It is the final evaluation that the trainer makes at the end of the lesson, the end of the unit, or the educational curriculum, to determine the extent of students' comprehension and the achievement of goals; Where the students have already completed the entire lesson/unit/syllabus.

Evaluation methods and tools:

There are some methods that the trainer can use to assess what students have learned from the digital content, including:

- **Evaluation of performance by tests:** in which weekly, monthly, or quarterly tests are used to measure the extent to which students have obtained digital content, and what information, abilities, attitudes and skills they have acquired at the end of the educational experience.

- **Performance-based evaluation:** it means asking the student to clarify what they have learned and employ their skills in real-life situations or situations that simulate real situations.

- **Observation-based performance evaluation:** It is a mechanism in which the trainer directs students with their various observations to them by observing them in active situations related to digital content, which is useful in obtaining information that helps them judge them, and determine the extent of their comprehension of the content.

- **Evaluating performance by interviews:** that is, holding pre-determined meetings between the trainer and the students to discuss the digital content and the lessons learned from it, and how to apply them in practice. Such meetings give the trainer the opportunity to obtain information related to the student's ideas and attitudes toward the topic of the content/lesson/unit/curriculum as a whole. Where it includes detailed questions prepared by the trainer before.

- **Portfolio-based evaluation:** It means collecting the grades of each student in the tests related to the lesson/unit/the entire curriculum in a file of their achievements during a specific time period, provided that the trainer reviews them in the light of prior criteria that they set to judge the extent of achievement and their performance to the desired levels of the required objectives and the desired learning outcomes.

- **evaluation of performance with concept maps:** in which the trainer directs students to identify the most prominent concepts included in the digital content by building a concept map and making a strong and coherent connection between them.

- **Peer evaluation:** Where each student or group of students evaluates a classmate or another group of students, based on a set of criteria pre-selected and defined by the trainer.

- **Self-assessment:** Here, students evaluate their understanding of the digital content, the lessons they have benefited from, strengths and weaknesses in the content, their personal reflections on their performance, their comprehension of the curriculum and its associated content. This is done through a set of pre-established questions by the trainer for students to answer.

- **Real evaluation:** it is the assessment of the learner's performance while carrying out realistic tasks and assignments that look like learning activities and not traditional test situations, in the trainer ensures the integration of students into the application of knowledge and skills in meaningful and relevant tasks to what they encounter in their real life; so that he exercises mental operations and discovery and investigation skills through his preoccupation with real activities that require solving problems and making decisions in proportion to the level of what has been obtained from digital content.

Principles of real evaluation:

- It should take place in the context of the teaching and learning processes, and not as a separate part of them, and a number of principles should be met in the evaluation tasks:

   1- Basic: related to the basic concepts and skills of the interactive content and the classroom curriculum.

   2- Real: It focuses on problems from the students' reality and their daily contact with technology.

   3- Rich: It contributes to enriching students' knowledge and expanding their learning horizons.

   4- Motivating: motivating students to learn and communicate among themselves regarding the content topics.

Assessment cards

Assessments cards are a very important tool in the evaluation methodology. The evaluation provides accurate information about the impact of the curricula on the students, and the evaluation here will take place on two levels. The level of the lesson and the level of the student, and the evaluation will be carried out according to two cards, individual and collective. The individual card measures the progress of the student over consecutive lessons, while the group card assesses individual differences among students within the same lesson. Below is an explanation of both cards and how the trainer interacts with them.

Monitoring the accuracy of students' initial information:

The evaluation card in this axis is concerned with determining the accuracy of students' initial information and measuring their stock of knowledge on the topic covered by the visual content.

Measuring the students' ability to link theoretical information to applied reality:

This point in the collective evaluation card (depending on the lesson) is very important, as the aim of the curriculum is not only to provide students with theoretical information, but also to enable them to link this information to their daily reality, and through this connection, the goal is achieved The general and main curricula, for example when a student mentions an example of the sensors that they are in their home in the washing machine or the home air conditioner; It is evidence of their high ability to link theoretical knowledge with practical reality, while other students may be less able to do so. The evaluation here allows the trainer to measure the student's ability to relate, and thus identify the students with the least ability, and provide them with support in this field.

The final result of the evaluation:

By comparing the evaluation elements in the pre-presentation stage with the post-presentation stage, the trainer can measure the real cognitive impact of the lesson on the students.

The following is an indication of the form of the collective evaluation card (depending on the lesson).

Diagnostic and final evaluation card for students

Grade:	the title of lesson:	trainer's name	Date:
Diagnostic evaluation prior to visual content				Final evaluation after the visual content			
Grade:	Student name	Student interaction	The accuracy of the information	Link information to reality	Accuracy of observation	The accuracy of the information	Link information to reality	The final outcome of the evaluation
1								
2								
3								
4								
5								

regarding evaluation points, according to the scientific methodologies adopted in this field, the higher the number of degrees in the evaluation scale. This reflected positively on the accuracy of the assessment process and its conformity with reality. The card adopts a four-step scale. The following shows how to place the students' assessment in each of the card's axes.

pointer	The meaning of the indicator	Cursor symbol	The meaning of the indicator	Cursor symbol	The meaning of the indicator	Cursor symbol	The meaning of the indicator	Cursor symbol
Student interaction	Not engaged at all	(-)	minimally reactive	(+)	Moderately interactive	(+ +)	Very interactive	(+ + +)
The accuracy of the information	More inaccurate information	(-)	Inaccurate information	(+)	Information of average accuracy	(+ +)	High accuracy information	(+ + +)
Link information to reality	Unable to relate the information to reality	(-)	Simple link between information and reality	(+)	Intermediate link between information and reality	(+ +)	Excellent link between information and reality	(+ + +)

According to the coding table above, when the trainer evaluates a student as moderately interactive, he puts a (+ +) sign for them, and so on for the rest of the evaluations, against which each of them has been coding.

Second: the individual scorecard:

Each student is assigned an individual scorecard; So that each student is given an evaluation for each lesson, and the sum of the evaluations represents the final evaluation of the student, and this evaluation card provides the following information to the trainer:

Monitoring the development of the student's assessment during the lessons: At the end of each visual content, the trainer puts a sentence of assessments for each student, and this is repeated with each visual content. The trainer can track the development of the student's assessments, is it fixed? Or does it change positively or negatively?

Monitoring the student's knowledge accumulation: Through the student's assessments over timeline, the trainer can observe the student's knowledge accumulation over time.

The following is an indication of the form of the individual assessment card for each student.

		Diagnostic evaluation prior to visual content				Final evaluation after the visual content			
Grade:	Student name	Student interaction	The accuracy of the information	Link information to reality	Accuracy of observation	The accuracy of the information	Link information to reality	The final outcome of the evaluation
1								
2								
3								
4								
5								

Diagnostic and final evaluation card for students

Grade: | **the title of lesson:** | **trainer's name** | **Date:**

Regarding the evaluation points, the same approach adopted in the collective evaluation card is applied to them.

It should be noted here that the trainer is supposed to adopt both of the previous cards in the evaluation, as they achieve integration in the evaluation, and they achieve the horizontal and vertical evaluation.

Fourth: Feedback:

Students are informed of the outcome of their learning of the interactive content; By providing them with information about their performance continuously, and helping them to develop this performance positively, and modify it if necessary. This depends mainly on the previously mentioned evaluation cards.

This concept is linked to the comprehensive concept of the evaluation process, as one of the means used to ensure that the maximum goals and objectives can be achieved.

▸ Types of feedback:

- **Corrective feedback:** Students are provided with information about their performance towards digital content, and direct them to additional learning resources that correct their wrong knowledge and increase their experience in the field.

- **Explanatory feedback:** Students are provided with additional information to explain and clarify the reasons for the error and the information that is confusing to them, and discuss their weaknesses, which helps to reduce the chances of repeating the theoretical or practical error in the coming times, or to discuss the strengths, and to emphasize the correct information and experiments., which deepens students' understanding and reinforces these points.

- **Reinforcing feedback:** Students are provided with information about the accuracy of their answers to questions related to the interactive content, correcting their wrong answers and experiences, discussing the reasons for the error, and providing them with verbal or moral motivational phrases or both.

Conclusion

The exceptional experience of the National Agency for Cybersecurity, in collaboration with the State of Qatar's Ministry of Education and Higher Education, in the creation of distinctive and efficient interactive content for various grades' educational Cybersecurity curricula; It essentially aims to integrate practical reality into the interactive educational environment and to raise awareness of information technology and Cybersecurity among school and university students, educational and educational staff, and parents. It also aims to keep them informed of the most pressing issues and developments in the field locally and globally, in order for the material and curriculum to accurately reflect our current environment.

Despite its distinction and provision that exceeds human expectations, the modern digital revolution has negative consequences of extreme danger. Because the majority of Internet users are young people from schools and universities, they are the most vulnerable to threats like hacking and data tampering, and as a result, they are the first to pay attention to and raise their awareness.

The trainer is considered one of the most important elements of interaction with students in schools and universities, and therefore a great burden falls on them in guiding them. We hope that this guidebook will contribute to meeting the needs and requirements of the trainer and enhance their role in implementing the strategy of the Ministry of Education and Higher Education so that it is supportive of the approved digital curricula and approved content. Together, they contribute to achieving the desired goals, which will not be achieved without the cooperation of the educational system at all levels - especially the trainer - to achieve these goals.

The guidebook will be subject to review and scrutiny based on feedback from the educational field. We will work hard to improve and develop it in accordance with current and future digital and educational developments.