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Lesson Exemplar for TLE

Quarter 1

Lesson

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Lesson Exemplar for TLE Grade 7
Quarter 1: Lesson 1 (Week 1)
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Development Team

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TLE /QUARTER 1/ GRADE 7

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners demonstrate an understanding of ICT sectors, as well as the potential career and business opportunities these sectors offer in relation to their chosen career in the future. The learners demonstrate an understanding of current trends and emerging issues in ICT
B. Performance Standards	The learners convert number systems in practical scenarios.
C. Learning Competencies and Objectives	**Learning Competencies** 1. The learners analyze the various sectors of ICT and evaluate the potential career and business prospects relevant to their future career choices. 2. Discuss the emerging trends and issues in ICT. **Learning Objectives** At the end of the lesson, the learners are expected to: 1. Identify various ICT sectors and potential career and business opportunities; 2. Identify the various trends in ICT that may contribute to developments in the ICT industry and Entrepreneurial activities; 3. Create graphic organizers on the different ICT Sectors' career and business opportunities; 4. Examine skills and competencies related to ICT career and business opportunities; 5. Identify the issues that may hamper any progress in the ICT industry; 6. Value the significance of ICT Sectors to future career or business opportunities; 7. Appreciate the significant relevance of the ICT sectors in their future career or business opportunities; and 8. Reflect on the significance of trends and issues in ICT.
D. Content	Sectors of ICT and Its Career and Business Opportunities • Computer programming - Programmer/Web and Game Developer • Visual arts – animator/ illustrator/ graphic designer • Computer system servicing – computer/ network • technician • Telecommunication – call center agents/ outbound • and inbound agents/ contact center services Trends and Issues in ICT

E. Integration	**SDG 4:** Quality Education **SGD 9:** Industry, Innovation and Infrastructure

II. LEARNING RESOURCES

Khan, U. (2023). Choosing your career path: Job vs business. LinkedIn. https://www.linkedin.com/pulse/choosing-your-career-path-job-vs-business-uzair-khan/

Phillips, A. (2023). ICT and career paths. Unpublished manuscript.

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**DAY 1 AND 2** **1. Short Review** Use search engines to look for sectors of ICT and career business opportunities. Provide an image and make a summary for each career.Prepare and facilitate a class discussion based on the following question: 1.What are the ICT sector and career opportunities you were able to find? 2. Are you familiar with those sectors? 3. What aspects are they common with? 4. Among these ICT career opportunities, what career do you want to pursue? Note and assess the learners' responses. **2. Feedback (Optional)**	Divide the class into small groups of 5 students. After a few minutes, have each group share their findings with the class and facilitate a discussion by asking questions.

B. Establishing Lesson Purpose	**1. Lesson Purpose**
	Present a "Word Cloud Art" that contains keywords and terms. Asks students a thought-provoking question or presenting a real-life scenario that highlights the importance of knowing sectors of ICT and career business opportunities.
	
	Ask the students, "Why is it important to understand the different sectors of ICT and the career opportunities they offer?".
	
	2. Unlocking Content Area Vocabulary
	  • **Animation** A series of pictures or frames created to simulate movement.
	  • **ICT sectors** combine manufacturing and services industries whose products primarily fulfil or enable the function of information processing and communication by electronic means, including transmission and display.
	  • **Graphic designers** create visual concepts, using computer software or by hand, to communicate ideas that inspire, inform, and captivate consumers.
	  • **Computer security, cybersecurity, digital security, or information technology security** is the protection of computer systems and networks from attacks by malicious actors that may result in unauthorized access.
	  • **Computer Systems Servicing** refers to the process of providing maintenance and support for computer systems. It involves tasks such as installing, configuring, troubleshooting, and maintaining computer systems and networks.
		Start with questions that will pique the interest and help the students understand the practical applications of the concepts you're about to introduce.
		
		Inform learners about what they will achieve by the end of the lesson.
		
		By the end of the lesson, you will have a deeper understanding of the various sectors of ICT and the career and business opportunities they offer, as well as the recent trends and issues in ICT.

C. Developing and Deepening Understanding	**SUB-TOPIC 1: Sectors of ICT and Its Career and Business Opportunities** **1. Explicitation** ICT plays a significant role nowadays. ICT or Information and Communications Technology stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage, and audiovisual, that enable users to access, store, transmit, understand, and manipulate information. The creation, production, commercialization, and widespread use of new technology are the major operations carried out by the manufacturing and service sectors that comprise the ICT sector. ICT skills are becoming more in demand, and organizations might benefit from combining these with	Start the class with an engaging activity by showing career pictures to the students and allow them to identify the sectors.

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communication abilities in Public Relations, advertising, and media communications. Here are the different preferences when it comes to choosing career paths. It covers career opportunities in ICT sectors such as Programming, Visual Arts, Computer System Servicing, and Telecommunications.

Computer Programming- Programming skills are essential for many technology disciplines but are in especially high demand for software and web development roles.

Programmer - professionals who write and test code to enable applications and software programs to run successfully on a computer in order to create instructions for the machine to follow.

Source:
https://www2.deloitte.com/fi/fi/pages/risk/articles/escalating-threat-of-fraud-across-the-eu-and-nordics.html
https://gameguardian.net/forum/topic/25289-getresults-not-getting-the-amount-of-results-which-i-give-it-just-edits-the-first-value-when-there-is-getresultscount-after-searchnumber/

What do computer programmers do?
- **Writing and testing code for new programs.** Computer programmers work closely with web and software developers to write code for new mobile applications or computer programs.
- **Updating existing programs.** Programmers also create and install updates for existing software programs. An update might include a bug fix, or enhanced functionality to improve the user experience.
- **Identifying and correcting coding errors.** On a daily basis, computer programmers might assist in troubleshooting parts of a website or computer program that are not functioning correctly.
- **Rewriting programs for different operating systems.** Often, programmers have to rewrite code in different languages, so that programs and applications can be compatible with different operating systems.

- **Secure programs against cybersecurity threats.** Many computer programmers work in the cybersecurity field, helping to identify malicious software and fix software that could be vulnerable to potential hacks.

Web and game developer - Making interactive, eye-catching experiences is what game development is all about, so maybe that fits you better. However, web development can be a fantastic option if you're passionate about creating websites and web applications as well as working with various technologies.

Source:

https://www.linkedin.com/pub/dir/Jl/Ss?trk=public_profile_samename-see-all

Visual Arts

Animator/Illustrator - plan, create, develop, and prepare images and diagrams using traditional and digital media, such as drawing, painting, drafting, collage, models, photography, and image capture and manipulation, to convey ideas, make meaning clear, support presentations, and illustrate stories.

Source: https://www.shutterstock.com/image-photo/mystical-background-female-eye-big-clock-1156647172

Graphic Designer - using computer software or by hand, graphic designers develop visual concepts that convey concepts to audiences in a way that enthralls, inspires, and informs them. They create the overall production design and layout for things like reports, brochures, magazines, and ads.

Source: https://www.quora.com/Is-a-graphic-designer-an-artist

Computer System Servicing
The process of maintaining and supporting computer systems is referred to as computer systems servicing. It includes setting up, adjusting, debugging, and maintaining networks and computer systems.

Computer/Network technician - examine, test, diagnose, and assess current network systems, including servers, cloud networks, wide area networks (WAN), local area networks (LAN), and other data communications networks. To guarantee that networks run properly and with the least amount of disruption, perform network maintenance.

Source: https://www.skynetusacorporation.com/index

Call center agents/outbound and inbound agents /contact center services- calls from clients arrive at an inbound call center. As incoming calls are usually from current clients who have problems or inquiries, support teams usually keep an eye on inbound centers. On the other hand, an outbound call center calls customers on their behalf.

Source: https://en.wikipedia.org/wiki/TTEC

Telecommunication - Transfer data globally in the forms of text, voice, audio, or video are referred to as telecoms companies.

Source: https://www.pinterest.ph/mz_marketing/

2. Worked Example
Here are the different sectors of ICT and the career opportunities they offer. In computer programming, you can be web developers or game developers. In visual arts, you can be animators or graphic designers. In computer system servicing,

The teacher will process the answers of the learners.

	you can be computer or network technicians. In telecommunication, you can be call-center agents or contact center services representatives. Ask learners to identify which sector interests them the most and why. "Think about the ICT sector that interests you the most. Why do you like this sector? What career opportunities do you want to pursue?"	The teacher will ask the learners for some questions, clarification, or muddy parts in the lesson, and explain it with further examples if necessary.
	3. Lesson Activity See Worksheet Week 1 No. 1 and 2	**V. Synthesis/Extended Practice/Differentiation**
	DAY 3	Ask the learner to research other ICT sectors/ industries in the community and have it presented the next day.
	SUB-TOPIC 2: Trends and Issues in ICT	

	1. Explicitation
	     Every year, current trends emerge in the ICT business. In the modern world, one needs to be conversant with all the different trends they encompass. Knowledge of the Current patterns will be beneficial for whatever one's vocation. You or anybody else recognizes the possibilities of enhancements as well as the advancement of this kind of business.
	    The technology sector is presently going through unparalleled expansion. Increasingly more Companies are trying to grow within this sector due to its excellent potential. ICT has become recognized as an important and appreciated element within the present Organizational structure.
	    What are the available ICT trends? Should we be attempting to locate it on theinternet, there's a huge volume of knowledge on the patterns, but for our lesson, we'll just accentuate the following patterns.
	 • **Superapps, the ICT supertrend**
	   Asia, particularly China, is the origin of this idea. These are applications that combine a lot of services so users can have access to a single application that does everything. The services include a dedicated messaging area and a bank transfer area. As they boost their competitiveness and foster customer loyalty, they are becoming more and more well-known among businesses.
	 • **Explosion of the metaverse in the business world**
	   With the creation of virtual spaces that can blur physical barriers, the virtual world hopes to realize its great potential and excel in important fields like the potential to change the way people live, work, and shop.
	 • **Digital twins**
		Start the class by engaging them in an inquiry activity. Showing the students a picture or collage that depicts the current trends in the ICT Industry.

Not only can this technology create sets of digital duplicates of spaces, elements, and systems to manage errors, save costs, and produce more accurate products.

- **MedTech, the revolution in medicine**
  The convergence of IoT and MedTech represents a significant chance to leverage digital technologies like virtual care, RPA, AI, and others to overcome obstacles and settle disputes in the modern healthcare industry.
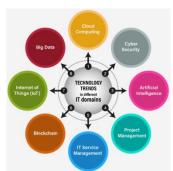- **Artificial Intelligence and Cybersecurity**
  The primary goal of this technology is to increase data security on smart networks; therefore, businesses should prioritize optimizing smart device security capabilities.
- **Blockchain, one of the most secure ICT trends**
  guarantees that the integrity of data is maintained while doing away with single control over information and party middlemen. To enable the automation of transactions and communications, the data are thus stored in a highly secure and encrypted manner, thereby providing an unquestionable boost to digital identity.

Issues in Information and Communications Technology (ICT)

- **Cybersecurity threats:** With the increasing reliance on digital systems and the internet, cybersecurity threats such as hacking, malware, phishing, and cyber attacks have become a significant concern for individuals, businesses, and governments. Protecting sensitive data and critical infrastructure from cyber threats is a top priority.
- **Data privacy and regulation:** The collection, storage, and use of personal data by companies and organizations have raised concerns about data privacy.
- **Artificial Intelligence (AI) and automation:** The rapid development of AI and automation technologies has raised concerns about job displacement, algorithmic bias, and ethical implications.
- **Slow Internet Connections:** Causes like network congestion, distance from server, outdated hardware or software
- **Viruses:** Different types like trojans, worms, ransomware that can corrupt data, steal info. How they spread through downloads, emails, networks.

Source:sprintzeal.com

1. What does the picture depict?
2. How can you relate it to our previous lesson in the career opportunities in ICT?

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| | Other potential issus:
- E-waste and environmental impact of hardware/devices
- IT personnel shortages and skills gaps
- Digital divide and access inequalities
- Ethical issues around AI, autonomous systems
- Regulation and governance of emerging technologies

2. Worked Example
Here are examples of recent trends and issues in ICT such as artificial intelligence, cloud computing, and cybersecurity. Notice how these affect our daily lives and businesses. Learners discuss the impact of these trends and issues on society and industry. Discuss in your group the impact of these trends and issues on our society and industry. How can we solve these issues?

DAY 4
3. Lesson Activity
  See Worksheet Week 1 No. 3 | The teacher will process the learners' responses.
Explain to the learners that the lesson will focus on the concept of trends and possible issues in the ICT Industry.

Divide the class into small groups of 5 students. After a few minutes, have each group share their work and facilitate a discussion by asking questions |
| **D. Making Generalizations** | **1. Learners' Takeaways**
The teacher will ask the learners:
1. What is the significant impact of these ICT Sectors in the career and business opportunities that they may undertake in the future?
2. Why does the issue always arise whenever there is a trend?
3. In your opinion, discuss possible trends five years fromnow?
4. How do ICT trends change as time goes by?

2. Reflection on Learning
The teacher will ask the learners to explain the concept of ICT Sectors and the career and business opportunities related to it. The teacher will call selected learners to share their answers. How does this lesson help you to better understand the concept of Trends and Issues in ICT? | The teacher will ask the learners the following questions.

The teacher will re-emphasize the highlights on the important concepts/notes about the topics. |

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS

A. **Evaluating Learning**	**1. Formative Assessment**
	I. Multiple Choice
	Directions: Identify the following. Write the letter of the correct answer on a clean sheet of paper.
	
	1. These are manufacturing and services sectors where the major operations are carried out widely by the use of new technology or ICT.
	   a. Industrial Arts Sectors
	   b. ICT Sectors
	   c. Family and Consumer Services Sectors
	   d. AFA Sector
	
	2. Which of the following sectors can a contact center agent be included in?
	   a. CSS
	   b. Programming
	   c. Telecommunication
	   d. Visual Arts
	
	3. Mr. Manuel is a graphic illustrator. Which of the following ICT sectors does he belong to?
	   a. CSS
	   b. Programming
	   c. Telecommunication
	   d. Visual Arts
	
	4. Web development and game development are from what ICT Sector?
	   a. CSS
	   b. Programming
	   c. Telecommunication
	   d. Visual Arts
	
	5. What is the significance of different ICT Sectors?
	   a. It provides income for our economy
	   b. It provides career and business opportunities
	   c. It provides manufacturing and services
	   d. None of the above
		Answer Key:
		I. Multiple choice
		1. b
		2. c
		3. d
		4. b
		5. d
		II. Rearrange the jumbled words.
		1. visual arts
		2. illustrator
		3. center agent
		4. telecommunication
		5. programmer
		6. graphic designer
		7. game developer
		8. network technician
		9. outbound and inbound agent
		10. career

	II. Directions: Rearrange jumbled letters to form the sectors and career opportunities.
	      1. alsuvi satr
	      2. ortralustli
	      3. retnec agenst
	      4. tionnicacommulete
	      5. remmprogra
	      6. phicgra signerde
	      7. mega deloperve
	      8. worknet ciantechni
	      9. boundout and boundin gentsa
	      10. recaer
	
	2. Homework (Optional)			

		Effective Practices	Problems Encountered	
B. Teacher's Remarks	*Note observations on any of the following areas:*			The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement and other related stuff. Teachers may also suggest ways to improve the different activities explored/ lesson exemplar.
	strategies explored			
	materials used			
	learner engagement/ interaction			
	others			

C. Teacher's Reflection	*Reflection guide or prompt can be on:*
	  ▪ <u>*principles behind the teaching*</u>
	     What principles and beliefs informed my lesson?
	     Why did I teach the lesson the way I did?
	
	  ▪ <u>*students*</u>
	     What roles did my students play in my lesson?
	     What did my students learn? How did they learn?
	
	  ▪ <u>*ways forward*</u>
	     What could I have done differently?
	     What can I explore in the next lesson?
				Teacher's reflection in every lesson conducted/ facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.