Lesson 1

| Class: Year 7 Stage 4 | Date: 17th March | Time: Start: 10:00am - Finish: 11:00am |
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| Technologies Context Area: Technology Mandatory - Digital technologies | Lesson Topic: Network types and basics | |

Recent Prior Experience

Ss have previously learnt about investigating how colours are represented in images and videos, for example manipulating red, green and blue (RGB) colours in an image editor (ACTDIK024). Students are familiar with the safe use of ICT and know how to use all applications present in the lesson. They are also confident with group work, basic literacy and numeracy skills.

Syllabus Outcome:

 TE4-7DI explains how data is represented in digital systems and transmitted in networks

Indicators of Learning for this lesson:

Content descriptor:

explore how data is transmitted and secured in wired, wireless and mobile networks (ACTDIK023)

Elaboration:

explain that networks have components that control the movement of data, for example, routers, hubs, switches and bridges manage data traffic and that the characteristics of these components impact on the operation (speed and security) of network

Success Criteria: Students can confidently say:

- Students understand the difference between Local area networks and Wide area networks
- Students understand the purpose of network connectivity devices (components) and how they make up networks

Assessment: Learning activities

Ss understand the function of each component of physical networks by identifying and matching each description to the name of the component.

Ss are able to differentiate between LAN and WAN through writing down examples of each and understanding why the networks are used in specific settings

Formative assessment 'Two Minute Paper'- ss will be prompted with headings e.g. LAN, routers etc and will write down everything they know. T will assess how well they have met the goals of the lesson.

- Ss will share their network workbooks which will be informally assessed and marked to see whether they have understood each indicator or learning, and feedback will be provided.

Any safety and ethical issues to be considered:

- Ethical use of Computers and the Internet
- ICT safety when students use their laptops, monitor the classroom to ensure they are on task

Resources:

List resources you used in preparing the lesson AND those used in the lesson implementation.

- whiteboard, laptop, projector/smartboard, whiteboard marker, network workbook (premade)
- YouTube video 'types of networks' HERE

- Bags should be out of the way to avoid trip hazards
- Power outlet cords
- Treating everyone with respect Plan groups prior to class to avoid distractions

- YouTube video 'How computer networks connect and work' HERE
- Network online workbook
- Image meme link HERE
- Padlet HERE

| Strategies & link to indicators of learning | Timing | Sequence: How is the lesson taught | Resources & Link to assessment | Differentiation |
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| INTRODUCTION | | | | |
| behaviour management: Promoting positive behaviour Discuss learning goal Direct instruction | 2 min | (T) Meets Ss outside where they are lined up in 2 lines (T) welcomes students into the classroom and explains today's agenda and expectations of the lesson (T) Praises (Ss) on being efficient and settling down. (T) Marks the roll | Roll | Ensure Learning Support assistant (LSA) is in the classroom sitting with the two Ss Do not place directly under bright lights or where glare occurs |

| Introduction to networks | 8 min | (T) Projects a meme on the board to capture (Ss) attention | Whiteboard | Verbally repeat clearly what is |
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| Class discussion | | I'M GOING TO HOOK A BROTHER UP | whitebeard marker | being written on board |
| Brainstorm using Padlet | | | pen | |
| General capabilities: | | | paper | |
| ICT skills | | TO MY METWORK SO THAT I CAN PRINT FROM ANY COMPUTER AT HOME | projector | Make sure someone is able to help Ahn and Tuka when sharing ideas |
| Critical and creative thinking | | (Ss) React = laughing, some understand, some don't | Image meme link HERE | Time and Take When sharing races |
| Personal and social capability | | Think pair share: | Padlet | |
| Literacy skills Metacognition: Think pair share with an incorporation of ICT. Ss think about networks, talk with their elbow partner and share their responses on Padlet and then the class discuss answers. | | (T) Settles class and Asks (Ss) "Based on this image, think about what it means and explain if you have ever done something similar. Discuss your idea with your elbow partner and be ready to share. (Ss) React = some sharing & commenting, some don't understand (T) Informs students that the meme is talking about computer networks which is the new topic they will be starting. (T) Creates a Padlet to see what (Ss) already know about networks (T) Prompts students to open laptops and get onto Padlet and write down ideas of what a 'Network' means with the help of their partners Encourage Ss to quickly share ideas with their elbow partner (Ss) React = Starting to interact and share ideas (T) Praises Ss and discuss some of the answers (T) Inform Ss that we will be exploring networks in detail | T informally assess what students may already 'Know' about networks which gives an indicator of how much detail is needed | Share personal experiences or stories about networks in real life settings |
| DEVELOPMENT | | | | |
| Activity 1: Learning components of networks | | PowerPoint: (T) Opens PowerPoint and asks (Ss) to open the online "network workbook" that has been shared with them via google drive | laptop projector paper | Give specialised workbook which has larger text and more space for the ss who are visually impaired |

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| explain that networks have components that control the | | (T) Explains that today (Ss) will be completing the activities in their workbooks based of the PowerPoint, so they need to take | pen PowerPoint | T privately asks Ss if they are okay and understand the lesson so far as |
| movement of data, for example, | 10 : | notes | | Ss are working on their notes |
| routers, hubs, switches. | 10 min | Think pair share: | Network online workbook | |
| | | (T) Questions (Ss) prior knowledge by asking | YouTube video 'types of networks' HERE YouTube video 'How computer networks connect and work' HERE | T will rephrase questions, use simplified language, fewer questions or alternative formats for questions for the two Ss |
| Metacognition: | | - "what do you think LAN and WAN means?" | | |
| Think aloud- promotes critical thinkingQuick writes- stimulating | | Allow Ss to chat with elbow buddy for 30 seconds and then share the answers | | |
| a deeper understanding of content. Ss learn to | | (Ss) React= some sharing ideas and critically thinking, some unsure | | Provide larger print for Ss with vision impairment |
| eliminate unnecessary information and are | | YouTube Video 1: | | , |
| encouraged to put information into their | | (T) Show YouTube video explaining different types of networks (2 min 37 sec) | | Allow additional time for Ss with impaired vision to complete their |
| own words. | | (T) Explains main points of video; LAN and WAN | | work |
| teaching strategy | | (T) <u>Says</u> its "ACTION time, I want you to write down as many examples you can think that use LAN" (Ss) (30 sec) | Informal- T can assess if Ss understand the content so far by writing down examples of | Share more images with descriptions for Ss who learn best through symbols or visually especially Tuka |
| - Collaborative | | (T) Asks some (Ss) what they have written | | |
| Teacher directedIndividual tasks | | (T) Praises (Ss) and provides some examples | | |
| - Discussion | | (T) Talk about the difference between Wired and Wireless network types while promoting a 'Think Aloud' | where they think LAN is used. | |
| Engagement: | | YouTube Video 2: | | Use storytelling or sharing personal experiences to support Tuka learn |
| "ACTION time" - enables (Ss) to write down as many examples | 30 mins | (T) Informs (Ss) that networks contain specific devices that are needed to operate. | | better, rather than having him read and process content directly |
| they can think of | | (T) Shows next YouTube video and asks (Ss) to pay full | | |
| General capabilities: | | attention to the video and take notes in their network workbook (video-3min 30sec) | | |
| ICT skills | | (T) Asks if (Ss) understand the concept so far that various | | |
| Critical and creative thinking | | components that make-up a network | | |
| Personal and social capability | | | | |

| Literacy skills | | (Ss) React = nodding/putting up their hand if they have any questions | | Dictogloss activity, LSA reads out text describing networks and components, Ahn preforms task writing down words that stand out |
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| | | (T) Continues PowerPoint and explains in detail important components of networks while instructing (Ss) to continue taking notes in their workbooks | | |
| | | (T) Asks Ss to complete the activities in their online workbook | | |
| | | (T) Allows (Ss) to use their laptops to research and answer the questions and work with their elbow partner | | |
| | | (T) Assess the classroom and behaviour of (Ss) working. | | |
| | | (T) Walk around the class frequently, praise any good behaviour and encourage (Ss) to stay on task. | | |
| | | (T) <u>Provide</u> examples if students are struggling and watch out for (Ss) not engaged. | | |
| CLOSURE | | | | |
| Recap of key concepts of the | | (T) Informs (Ss) to stop working on their online book | Paper | Be understanding that Ahn will not get through this work |
| lesson. | 10 min | 1 | Pen | |
| Metacognition- 2-minute Paper | | complete the PMI under the heading 'homework'" | Projector | Give an audio recording to listen to which goes over the content |
| Literacy skills | | (T) <u>Settles</u> class and informs (Ss) that it is 2 Minute Paper time. | Laptop | which goes over the content |
| | | (Ss) React= get out a piece of paper and pen | Whiteboard Whiteboard marker | Allow Tuka to share his experiences with his family and the teacher through storytelling. |
| | | (T) Writes key concepts on the board which will stimulate Ss | | |
| | | knowledge. E.g. LAN, Hub, Wired etc. | Formative assessment 'Two Minute Paper'- ss will be prompted with headings e.g. LAN, components of networks | |
| | | (T) <u>Says</u> to (Ss) "You are to write down as many important things you learnt today using the headings to help" and "What you understood the least today". | | |
| | | (T) Starts the timer on the projector and says 'GO!' | etc and they will write | |
| | | (T) Says "Pens down" and asks (Ss) to place the piece of paper with their names on the (T) desk | down everything they know. | |
| | | (T) Thank and praise (Ss) for their hard work and cooperation | | |