WEEK 5

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| **Week Ending:** | | **Day:** | | | **Subject:** Computing | | |
| **Duration:** 60MINS | | | | | **Strand:** Computational Thinking | | |
| **Class:** B9 | | **Class Size:** | | | **Sub Strand:** Artificial Intelligence | | |
| **Content Standard:**  B9.4.4.1 Discuss Artificial intelligence Concepts | | | **Indicator:**  B9.4.4.1.1. Describe the knowledge-based systems (Expert systems) as the classical Artificial intelligence. | | | | **Lesson:**  1 of 1 |
| **Performance Indicator:**  Learners can Illustrate the use of IF-THEN control structure for querying an expert system | | | | **Core Competencies:**  Creativity and Innovation (CI), Communication and Collaboration (CC), Digital Literacy (DL),Critical thinking and Problem solving (CP). | | | |
| **Reference:** Computing Curriculum Pg. 56 | | | | | | | |
| **New words:** Artificial Intelligence (AI), Expert Systems, Knowledge-Based Systems, IF-THEN Control Structure | | | | | | | |
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| Phase/Duration | Learners Activities | | | | | Resources | |
| PHASE 1: **STARTER** | Begin by discussing with learners the concept of Artificial Intelligence (AI) and its applications in various fields such as healthcare, transportation, and gaming.  Ask learners if they have heard about expert systems and knowledge-based systems.  Share performance indicators and introduce the lesson | | | | |  | |
| PHASE 2: **NEW LEARNING** | Explain that knowledge-based systems, also known as expert systems, are a type of AI that uses human knowledge and expertise to solve complex problems.  Show examples of knowledge-based systems in real life, such as medical diagnosis systems or customer support chatbots.  Discuss the key components of a knowledge-based system, including the knowledge base (facts, rules, and heuristics), the inference engine (reasoning mechanism), and the user interface.  Use simple examples to illustrate how a knowledge-based system works, such as a medical expert system asking questions to diagnose a patient's illness.  Explain the IF-THEN control structure used in expert systems to make decisions based on rules.  Provide an example scenario, such as a medical diagnosis system, where IF-THEN rules are applied.  Demonstrate how to query an expert system using the IF-THEN control structure to obtain a diagnosis or recommendation.  Introduce knowledge-based systems and their role in storing and processing information to generate outputs.  Choose a specific knowledge-based system, like a Telemedicine system, to demonstrate inputting a request.  Show learners how to input a request (e.g., symptoms of a patient) into the system to generate an output (e.g., recommended treatment or diagnosis) | | | | | Charts and pictures | |
| PHASE 3: **REFLECTION** | Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.  Take feedback from learners and summarize the lesson. | | | | |  | |

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| **Class:** B9 | | **Class Size:** | | | **Sub Strand:** Artificial Intelligence | | |
| **Content Standard:**  B9.4.4.1 Discuss Artificial intelligence Concepts | | | **Indicator:**  B9.4.4.1.1. Describe the knowledge-based systems (Expert systems) as the classical Artificial intelligence. | | | | **Lesson:**  1 of 1 |
| **Performance Indicator:**  Learners can use Google’s Teachable Machine demo to get a basic understanding of how machine learning works. | | | | **Core Competencies:**  Creativity and Innovation (CI), Communication and Collaboration (CC), Digital Literacy (DL),Critical thinking and Problem solving (CP). | | | |
| **Reference:** Computing Curriculum Pg. 56 | | | | | | | |
| **New words:** Machine Learning, Google's Teachable Machine, Image Recognition, Training Model | | | | | | | |
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| Phase/Duration | Learners Activities | | | | | Resources | |
| PHASE 1: **STARTER** | Begin by discussing with learners the concept of machine learning and its applications in various fields such as image recognition, language translation, and recommendation systems.  Share performance indicators and introduce the lesson | | | | |  | |
| PHASE 2: **NEW LEARNING** | Introduce the idea of using Google's Teachable Machine demo to understand how machine learning works.  Explain the basic concept of Google's Teachable Machine as a tool that allows users to train a model to recognize patterns in data.  Show learners how to access and navigate Google's Teachable Machine demo on the web.  Use a simple example, such as identifying objects in images, to demonstrate how machine learning works.  Show learners how to upload images to the Teachable Machine and train the model to recognize different objects.  Explain different methods of data collection, such as surveys, interviews, observation, and sensors.  Demonstrate a simple data collection activity in class, such as conducting a survey about learners' favorite hobbies.  Explain the concept of machine learning as a subset of artificial intelligence where algorithms learn from data to make predictions or decisions.  Discuss the applications of machine learning in various fields, such as image recognition, natural language processing, and predictive analytics | | | | | Charts and pictures | |
| PHASE 3: **REFLECTION** | Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.  Take feedback from learners and summarize the lesson. | | | | |  | |