Y9 Computer Science Homework Schedule 2022_23

Rota week 3

AI and Machine Learning Module

Using the **"AI and Machine Learning Module" on code.org** teachers will be able to set up **class sections** to monitor and track students' progress

1	19 Sept 2022	**Introduction to Machine Learning** Students are introduced to a form of artificial intelligence called machine learning and how they can use the Problem Solving Process to help train a robot to solve problems. They participate in three machine learning activities where a robot - A.I. Bot - is learning how to detect patterns in fish.
2	10 Oct 2022	REVISION **Types of Machine Learning** Students will consider how they create "mental" models when learning new concepts, and how those can be similar to a "machine learning" model. They participate in a colour pattern activity to simulate building a machine learning model without help, then they play a game called "Green Glass Door" as an example of supervised learning, and finally, they will sort several scenarios into "supervised" or "unsupervised" learning.
3	7 Nov 2022	REVISION **Innovations in AI** Students explore an application of AI called Seeing AI and examine how it is supporting people with visual impairments. Then, students research other examples of how AI is impacting society, focusing on users who are impacted by the examples they find. Finally, students share their findings with each other.

4	28 Nov 2022	**Patterns in Data** Students will examine several apps that make decisions about what shoes to wear, ultimately building up to an understanding of how machine learning can help make this decision. Students are guided to the conclusion that surveying their users can help them make the best decision by looking for patterns in the data and basing their decisions on these patterns.
5	9 Jan 2023	**Classification Models** Students will participate in an unplugged activity simulating one of the machine learning algorithms computers use to separate data into groups to help make decisions. Students will be tasked with helping a computer learn to classify food as fruits or vegetables, graph 20 different fruits on two axes comparing “sweetness” to “easy to eat”, and then try to separate the data into groups - a fruit area, and a veggie area.
6	30 Jan 2023	**Introduction to AI Lab** Students will dive into the AI Lab tool for the first time, where they select features to train a model that predicts a given label. They start by exploring AI Lab and training a model to recognize shapes. Then they pretend they have been hired by several restaurants who would like to make recommendations to new customers based on survey data they’re collected, go through each dataset, and use data visualisation tools to identify features with high relationships in the data.
7	27 Feb 2023	**Importing Models in App Lab** Students are introduced to importing their models into App Lab and linking their model to their screens. They help create a book recommendation app and learn how to add a welcome screen and events to their code. This lesson assumes students are already familiar with App Lab - for classrooms that have not seen App Lab before, consider extending this lesson and including additional videos or activities that are recommended in the lesson plan.
8	20 Mar 2023	**Model Cards** Students will investigate a model for bias and be introduced to a Model Card, which is a way of representing important information about a trained model that could help uncover bias. They will be investigating a Medical Priority app, which helps a hospital decide how soon to view patients based on their symptoms. As students go through the activity, they realize that the app is biased based on personal information and examine how this could happen.

9	24 Apr 2023	**Saving Models in AI Lab** Students complete the full process of training and saving a model, then importing into App Lab. For the first time, students are able to choose the label they would like to predict and spend time deciding the features they will use to help predict their label of choice. Students also create a model card for their models in order to save them and import it into App Lab
10	15 May 2023	REVISION
12 Jun 2022 EXAM WEEK		
11	26 Jun 2023	**Model Cards in App Lab** Students practice importing their models into App Lab, this time including models that have numerical data and using model cards to help improve the user experience of filling out their form. They will then learn how to view the model card within App Lab and use this to add more descriptive elements to an app. Next, they focus on improving the user experience by adding informational text to help guide users through completing the form and adding a style to their app to improve the user experience.