ERASMUS+ ARTIE
ARTIFICIAL INTELLIGENCE IN EDUCATION

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ARTIE: Artificial Intelligence in Education - challenges and opportunities of the new era:
development of a new curriculum, guide for educators and online course for students
Project co-funded by European Union under Erasmus+ Programme, 2020-1-HR01-KA201-077800

TITLE: Programing speech generation in Scratch

LEARNING SCENARIO		
School:	*Duration (minutes):*	90
Teacher:	*Students' age:*	13-14

Essential Question:	How to make a program for speech generation in Scratch

Topics:

- Programing speech generation in Scratch

Aims:

To learn to program speech generation with uploaded examples

Outcomes:

- Knowing how to write a program for speech generation using Scratch

Work forms:

- *work in pairs, group work*

Methods:

- *presentation, talk, discussion, interactive exercise*

ARTICULATION
Course of action (duration in minutes)
INTRODUCTION

Defining the goal of the lesson:
Introduction to a speech generation program and its usage through an example of one program.

Ask your students what speech generation is.
Ask your students what TTS and CTS are? (Text-to- speech and Concept-to-speech)

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Text-to-speech (TTS) is a type of assistive technology that reads digital text aloud. It's sometimes called "read aloud" technology. With a click of a button or a touch of a finger, TTS can take words on a computer or other digital device and convert them into audio. TTS is very helpful for kids and adults who struggle with reading. But it can also help with writing and editing, and even with focusing.

A Concept-to-Speech (CTS) system converts the conceptual representation of a sentence-to-be-spoken into speech. While some CTS systems consist of independently built text generation and Text-to-Speech (TTS) modules, most of the existing CTS systems enhance the connection between these two modules with a prosodic prediction module that utilizes linguistic knowledge from the text generator to predict prosodic features for TTS generation.

Speech generation can transform any text into speech.
Speech generation is producing spoken messages in response to signals from a data processing or control system. The selection of messages is produced by assembling speech sounds from a set of fundamentals that may be artificial in origin or may have been extracted by processing those human-produced.
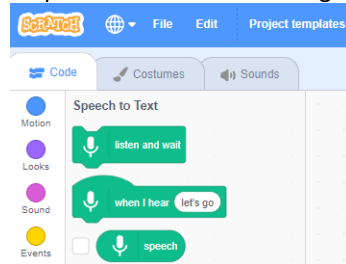
MAIN PART

Step 1: Open your Chrome web browser and go to: https://machinelearningforkids.co.uk/scratch3/
Step 2: Load extension Text to Speech
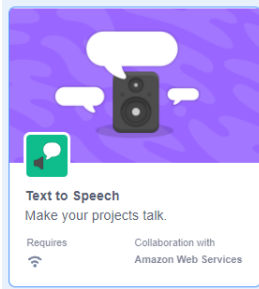
Step 3: You will see the new group in Block Palette called „Text to Speech "and 3 new blocks there


Step 4: Let's go from the bottom – **set Language to** block
This block sets the output language – you can choose it from the dropdown list
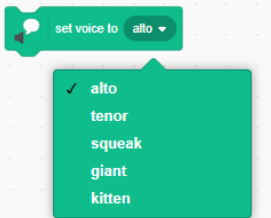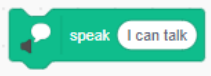
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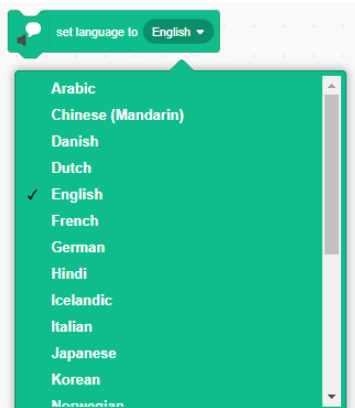
Step 5: Next block - **set voice to** set the voice type.
You can choose: alto, tenor, squeak, giant or kitten.

Step 6: And the most important block - **speak** block. This block "speaks" the text in white balloon, such as „I can talk" in the example below. Change this to anything you want and click on the block to hear it.
Ensure your speaker volume is turned on before testing.

Step 7: Basically, not the hardest work to make the Scratch sprite talk. All you must do is to set the language, voice and start talking.
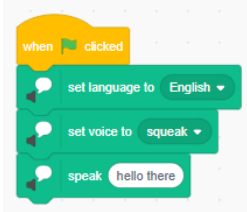
Step 8: What can you do with it?
You can recreate the famous movie lines, like this one from Star Wars

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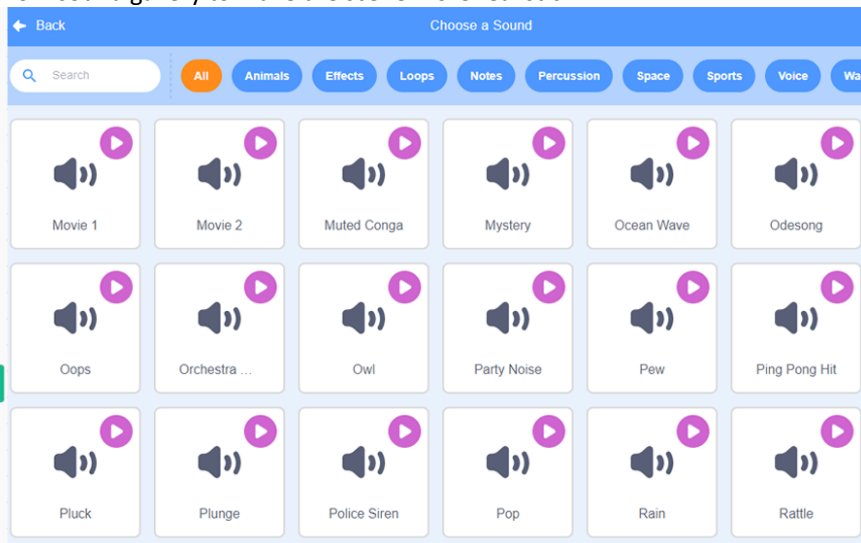Project co-funded by European Union under Erasmus+ Programme, 2020-1-HR01-KA201-077800

Step 9: Or make your own movie, tell a story…
Combine it with other clips from sound gallery to make the scene more realistic.

CONCLUSION

Today we have many speech generation devices. Speech-generating devices let people 'speak' words and sentences electronically. Speech-generating devices are hand-held electronic devices that play words or phrases when the user touches a switch or presses buttons or keys. Some devices 'speak' words as the words are typed on a keyboard. Speech-generating devices allow people who can't use spoken language to 'speak' electronically. Speech-generating devices have been used to help autistic children communicate since the 1990s.

Do the K.W.L. (**K**now, **W**ant, **L**earned) chart with your students.

What I **K**now	What I **W**ant to Know	What I **L**earned

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Methods	Work forms
presentation *interactive exercise / simulation on the computer*	*work in pairs* *group work*

Material:

- https://machinelearningforkids.co.uk/scratch3/

Literature

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PERSONAL OBSERVATIONS, COMMENTS AND NOTES