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| **TITLE: Let's recycle together!** |

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| **LEARNING SCENARIO** | | | |
| ***School:*** | | ***Duration (minutes):*** | 90 |
| ***Teacher:*** |  | ***Students***  ***age:*** | 10 |

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| ***Essential Idea:*** | **Let's create an AI project with Scratch using the Teachable Machine train model.** |

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| ***Topics:*** |
| * designing, creating and writing in a visual programming language: ideas, stories and solutions to problems of varied complexity * experimenting with AI * civilization related implications of AI |
| ***Aims:*** |
| * design and create simple programs * understand the concept of variable, define and use variable it in their programs * test models related to recognition |
| ***Outcomes:*** |
| * teaching a model to recognize glass vs. paper vs. plastic in your webcam * creating and testing simple program that use Teachable Machinemodel and Video Sensing Extension |
| ***Work forms:***   * individual work, work in pairs, group work   ***Methods:*** |
| * presentation, talk, discussion, interactive exercise |

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| **ARTICULATION** |
| **The course of action (duration, minutes)** |
| **INTRODUCTION** |
| The teacher leads a conversation in which students revise the commands and skills of working in Scratch and skills to train a model by Teachable Machine.  **Announcement of the goal of the lesson:**  Careful waste management is one of the necessary habits needed by every inhabitant of the Earth.  Today we are going to create a recycling assistant using Scratch and Teachable Machine. |
| **MAIN PART** |
| The teacher shows, explains and guides the students in the first practical task:   1. Go to: <https://teachablemachine.withgoogle.com> 2. Teach a model to recognize glass vs. paper vs. plastic in your webcam. 3. Create a New project in Scratch. 4. Add Video Sensing Extension. 5. Add a sprite (assistant) and associated blocks: 6. Copy and paste the URL of your model.   Text, chat or text message  Description automatically generated   1. Add a new sprite and associated blocks:   Graphical user interface, application  Description automatically generated  Based on the previous example, students design their practical work individually and/or in pairs:  **Interactive exercise 2:**   1. Go to: <https://teachablemachine.withgoogle.com> 2. Teach a model to recognize 2 or 3 objects in your webcam. 3. Create a New project in Scratch. 4. Add Video Sensing Extension. 5. Create your project. 6. Test and save your project. 7. Present your project to the students in the class. Discuss. Peer evaluation. 8. Save your work to the class e-portfolio. |
| **CONCLUSION** |
| We can build and use a recycling assistant using Scratch and Teachable Machine. |

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| ***Methods*** | ***Work forms*** |
| *presentation interview*  *talk/discussion demonstration*  *work on the text role playing*  *graphic work*  *interactive exercise /simulation on the computer* | *individual work*  *work in pairs*  *group work*  *frontal work* |

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| ***Material*** |
| * Scratch * <https://mitmedialab.github.io/prg-extension-boilerplate/create/> * <https://teachablemachine.withgoogle.com> |

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| ***Literature***   * https://dancingwithai.media.mit.edu |

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| **PERSONAL OBSERVATIONS, COMMENTS AND NOTES** |
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