

Activity 1.2.2 - Reverse engineering

Estimated duration	40 Minutes
Requirements	none
Hardware and Software tools used	- computer or tablet with Internet connection - post-it

Procedure

1. The teacher chooses a famous AI-based device (e.g. Alexa, a smartwatch, etc. - AI devices can be also identified by the ones from activity 1.1.4 "Finding intelligent objects")
2. Students are divided into small groups (4-8 students)
3. Students discuss together how the device work answering questions such as:
 - How does the device work?
 - Why should you use it?
 - What might be inside the device to make it work this way?
4. Each group has to find out all the different expertises (and related experts) necessary to develop that device (e.g. designer, mathematician, mechanical engineer, etc.)
5. Each group has to try to put in sequence - following the steps of the design process - the listed expertises
6. Each group prepares a presentation (slides)

Troubleshooting

Possible issue	Possible solution
Students do not have any idea about the stages in the design process	Teacher gives each group an illustration (an image) with the stages in the design process (see Resources); students have to elaborate by themselves the meaning of each step
Students do not have any idea about the use of the proposed device	Teacher organises a short presentation to be given before the activity in groups, to show students the device, without inserting any information about the design process

Resources for teachers

- A scientific paper on Interdisciplinarity of AI: [Kusters, Remy, Dusan Misevic, Hugues Berry, Antoine Cully, Yann Le Cunff, Loic Dandoy, Natalia Díaz-Rodríguez et al. "Interdisciplinary Research in Artificial Intelligence: Challenges and Opportunities." *Frontiers in Big Data* 3 \(2020\): 45.](#)
- Definition of the stages in the design process
<https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process>

Resources for students

Graph of the design process

