**GAME: FIND THE LOST PARTICIPANT**

**Project title:** Let's teach each other

**Project number:** 2019 -1 SK01- KA229-060637

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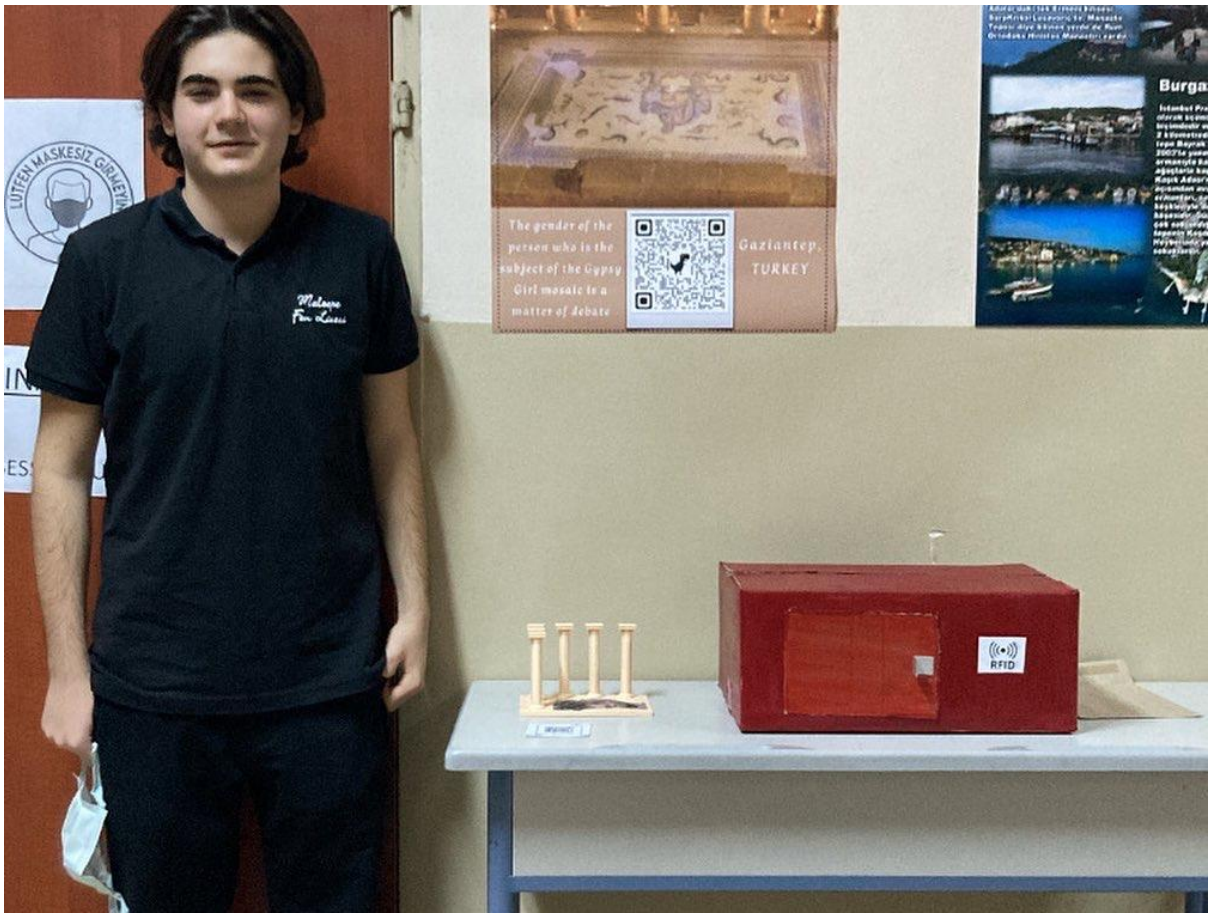
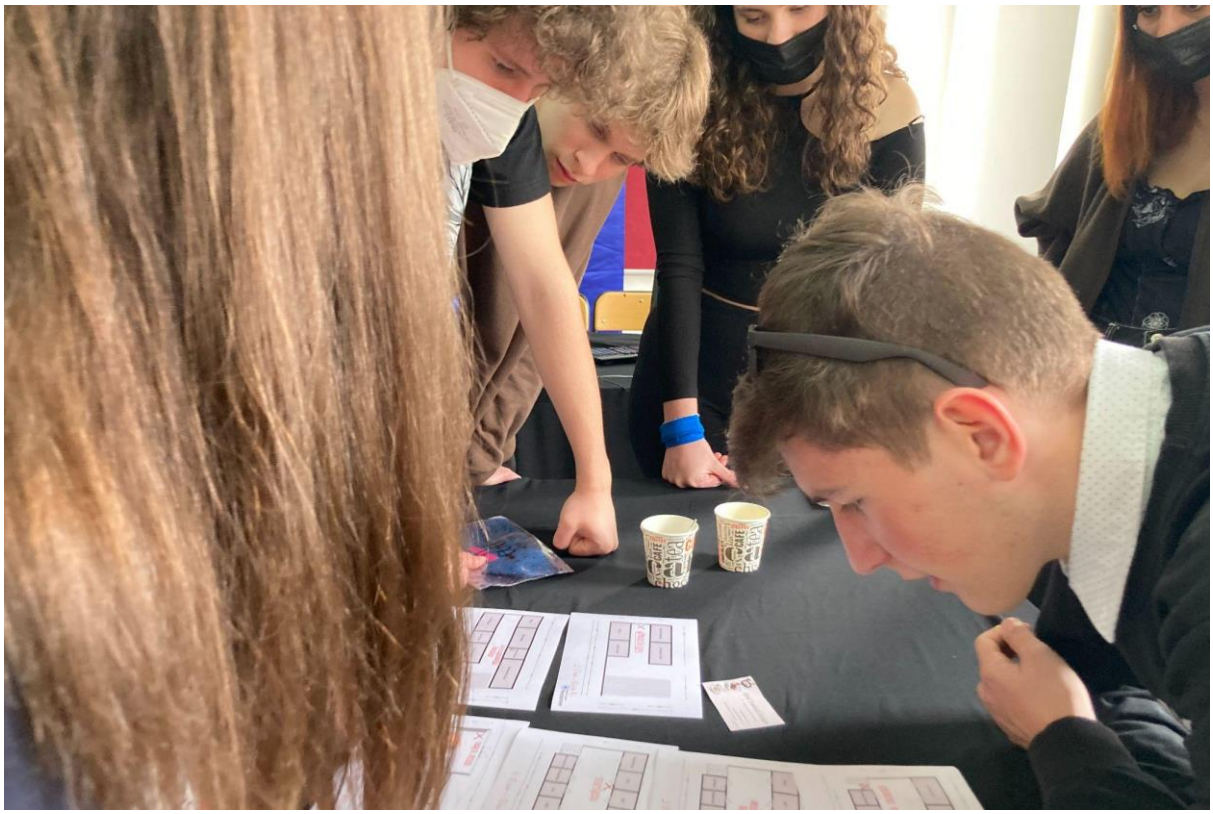
**"Educational training activities for teachers and students"**

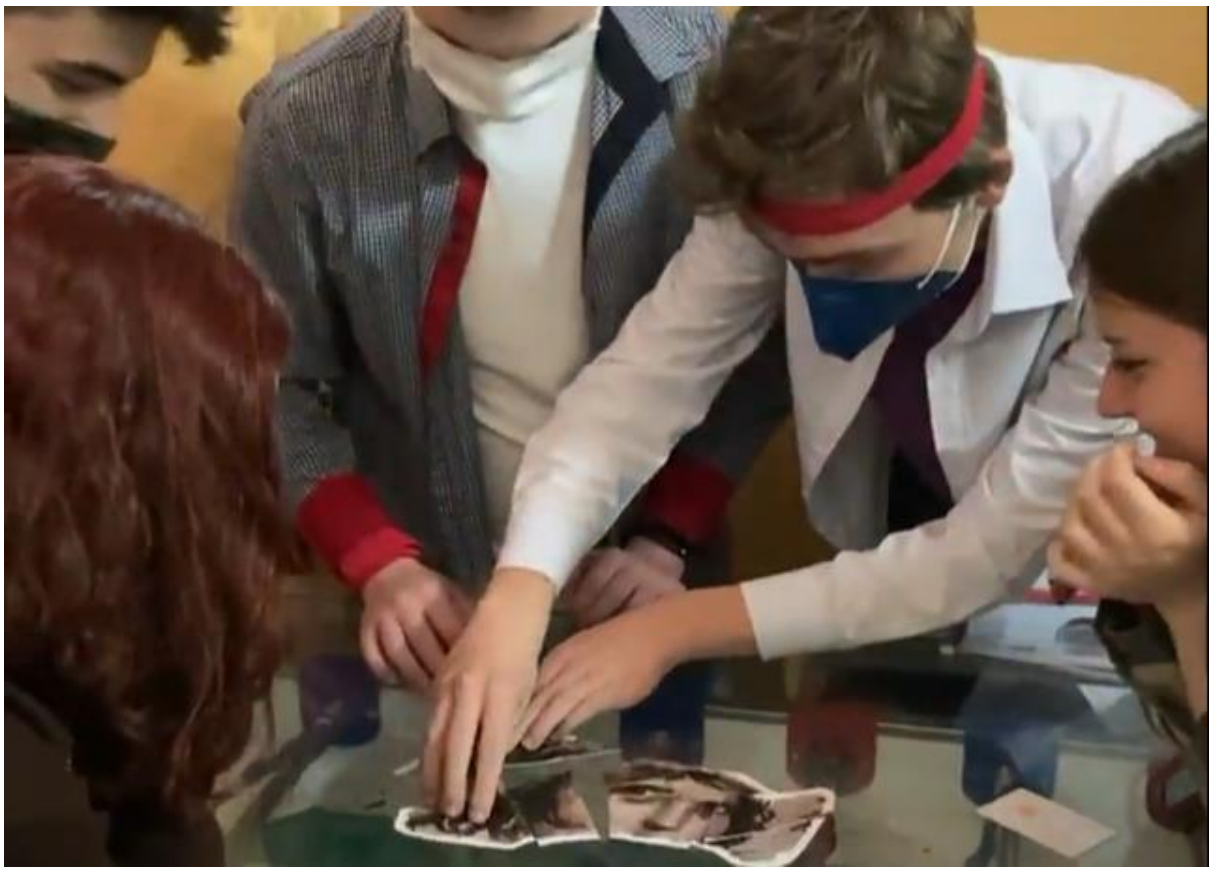
The results of this activity was a KAHOOT online test and an educational digital game implemented through RFID and Augmented Reality technologies. Turkish partners will present a highly innovative way of teaching. Thanks to this game our other partners learned the historical artifacts which is in the Unesco Cultural Heritage List by using IT - RFID, Augmented Reality and 3D Printer.



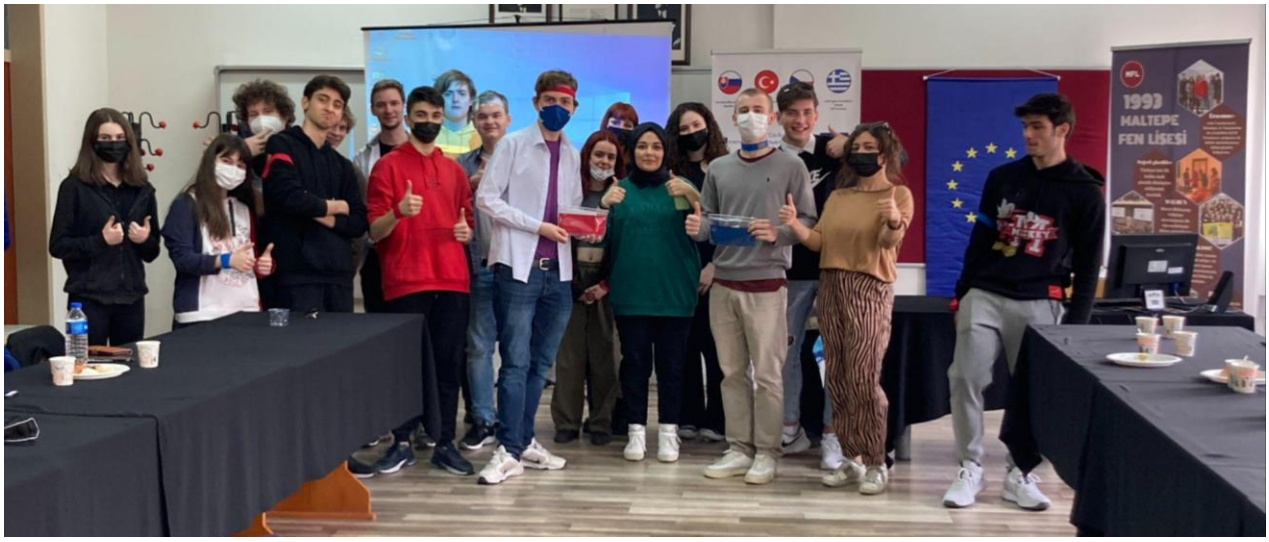

First we made a route inside our school with historical points that were represented by 3D printed historical artifacts. We wrote a story for our game; a friend from our Erasmus+ group is lost and we have some clues about where we can find her. Clues pointing historical places which our friend visited, given the teams.

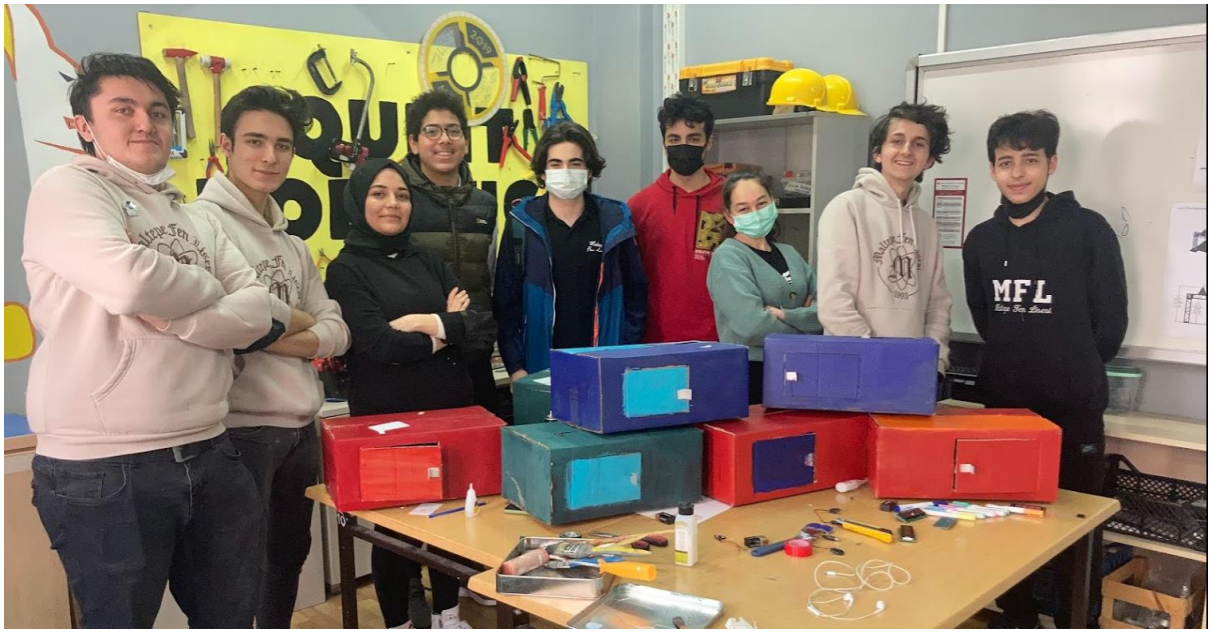


We prepared our school's maps for the two teams. We use all methods and we make a game like orienteering. We use QR Codes for our hits. We made a video for tips with Augmented Reality in Unity. We created portable types of historical artifacts using 3D printing. And we encrypted our boxes with RFID technologies on Arduino codes. We have two different teams and two different routes.



It took one hour to teams to finish the game. We aimed our partners has a good time in our school and we did. They feeled very excited and passionate. Players had fun and learned more about historical places. That game reinforced the knowledge. At the same time this was an example of how to use structured games and technology for education.



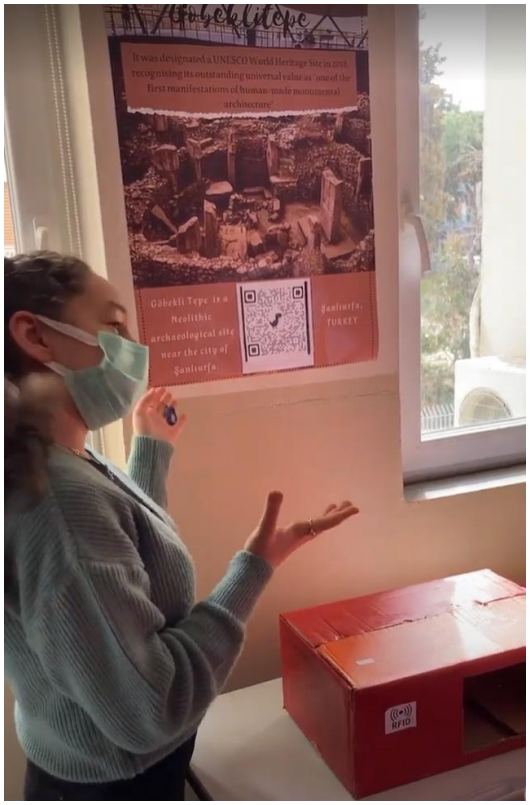
**What is the QR CODE and How We Used It ?**

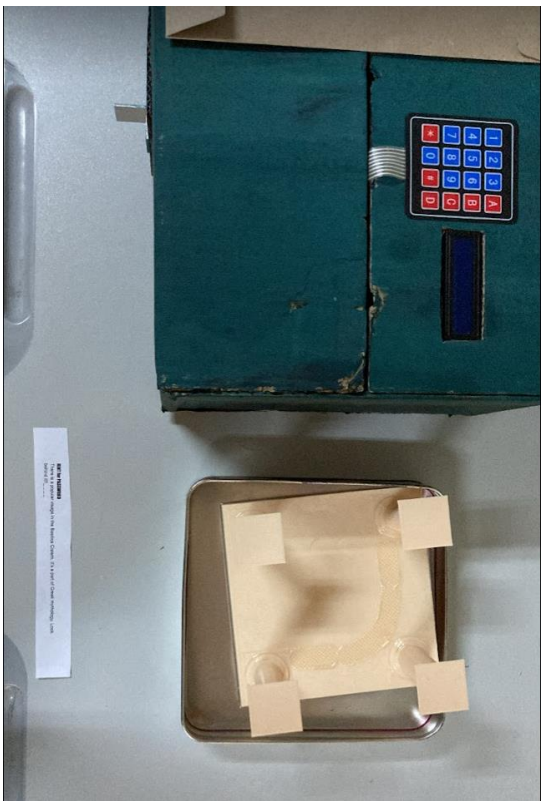
Datamatrix or QR code, a barcode that can be read by machines and which can be manufactured type. The code generally consists of a black square on a white background motif.

By encoding the QR code with a frame (usually text and lets get them to fit into devices that can read later. Almost all of phone cameras has this feature. When you scanned the qr code our tips was opened as a photograph or video.

**What is the Augmented Reality and How we Used It ?**

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory and olfactory.[1][2] AR can be defined as a system that incorporates three basic features: a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects. We printed photos and than scanned the photo with mobile phone then video tips started to play.



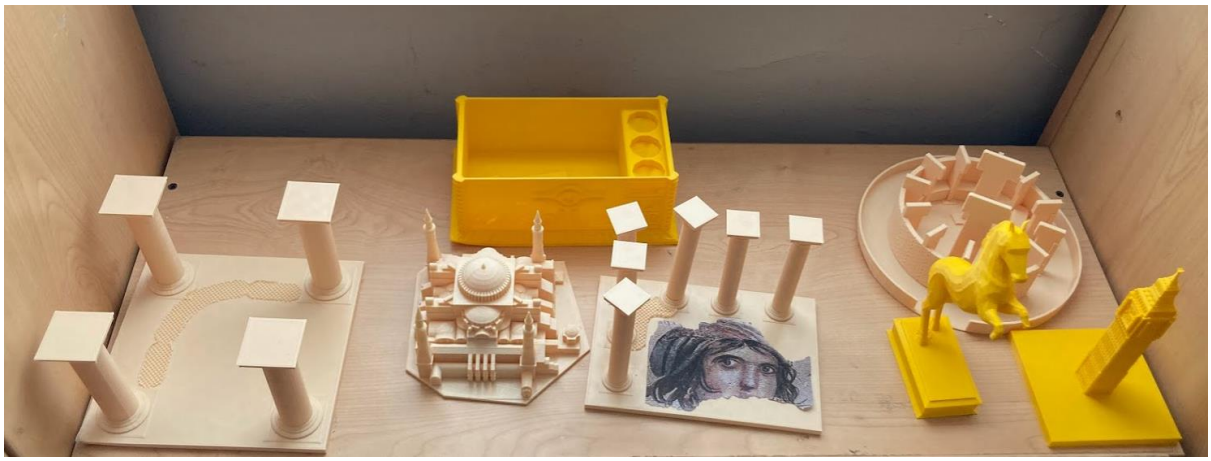



**What is RFID and How We Used It?**

The initiative radio frequency identification i.e. radio frequency identification. RFID technology is the technology used for the recognition of objects using radio waves. Tickets for public transport in our daily lives, in the workplace and is often confronted turnstiles at the entrances to the school.

We use the UID of the card that has a number pre-defined for each team. This number is different for each card.

We placed RFID cards or key cahins in each box.  Each box contained card/key chain of the next boz that can be find only by solving the given puzzle and guessing the place that next box placed. If the team found the right box, UID of the card triggered a servo motor than box opened.



**What is 3D Printer and How We Used It?**

The 3D printing process turns a whole object into thousands of tiny little slices, then makes it from the bottom-up, slice by slice. Those tiny layers stick together to form a solid object. Each layer can be very complex, meaning 3D printers can create moving parts like hinges and wheels as part of the same object. You could print a whole bike - handlebars, saddle, frame, wheels, brakes, pedals and chain - ready assembled, without using any tools. It's just a question of leaving gaps in the right places. We printed the  historical artifacts's prototype with 3d printer.