

SCIENCE CUP – ROJKO 2016

1st category – Kindergarten- 3rd round

Creativity

The students were praised for all their previous work and enthusiasm, but I explained to them that we hadn't introduced ourselves as individuals or as a class yet. Again we brainstormed ideas of how we could introduce ourselves to the organizers of the competition. We had ideas ranging from drawing our class, to taking a picture to asking the organizers to come visit us! One student suggested we each draw ourselves and the rest of the class liked that idea. So we all chose our favorite colors and drew what we see in the mirror.

While the students were busy with their drawings one student suggested sticking all the pictures on a tree (we had recently made a family tree). This idea excited all the students, and so we set about making a tree.



Theory and research

Three pieces of string were collected. Students helped in measuring and cutting them all to the same length. One by one all the strings were tied to doorknobs with a plastic cup attached to the other end. Students have not yet learned units of measuring weight and so wooden blocks were used as our form of measurement.

The students separated the wooden blocks into length categories and we decided to use the longest ones in all three trials.

Unfortunately due to the Iranian New Year holidays we were unable to complete this task by the deadline as students went away on vacation.

Practice and project

The domino effect

The term domino effect was explained to the students, and we had a go at pretending to be dominos ourselves. We stood in a straight line and played a slow version of the game! The students were asked to look around the class for items that we could replace ourselves with. A pack of dominos was collected, wooden blocks and a game similar to dominos (bigger tiles.) The class was separated into groups and each group was asked to build the longest track they could. When all the students got the hang of the task, the correct distance between objects, the way it should face and so on, we joined the three teams and used the 3 different materials to make one long track!



Marble machine.

I explained to the students the purpose of our next task, and it became clear that they needed a story alongside it to make apply. We agreed on a thief opening a house door and the end result would be the car alarm going off.

We started the marble machine task my finding a board and personalizing it.



To follow on from our story our marble machine started with a door opening (the thief breaking in.) The marble will then drop into a plastic bottle which leads to colored toilet paper rolls.

We used building blocks for the next step. The students stuck hard plastic on the sides so that the marble would not roll out. They were placed and stuck to allow the marble to keep rolling down.

The blocks led the marble through to a plastic tunnel (poorly visible in the picture). A stack of building blocks held another plastic tunnel and led it to a train track.



The train track was held up with stacks of legos and building blocks. At some points cotton balls were used to secure the positions of the materials. The end of the train track leads to a set of dominos. The last domino hits a plastic car on a ramp (the students wanted the driver to be alerted of the break in). The car then slides down the ramp.

The car was not going as far as the students liked, and one student suggested pouring oil to make it slipperier. We filmed the marble rolling through the machine and are very proud of our work!