

After the second year,

- we adapted the observations of the kids (eg. yellow colour was not visible enough, there is no rule for a drawn game in domino duel etc.)

*"We laughed a lot. It was an instant evening program for us."*

*Mária, parent of 9-year old*

- we discovered how easier it is to introduce games in a half-class group

• we recognised the necessity to raise parent involvement (50% was far lower than the previous year)

- we were confirmed by the fact that the game package is well levelled by difficulty (both the less and the more talented kids found a game they liked)

*"Some exercises challenge even me"*

*Gyöngyvér, teacher in 4th grade*

After the third year,

- we transformed the dominoe game in another one, where we used the Four in a row game's rules

- we used some new forms in the package, which made it more comfortable and attractive(e.g. transparent colour counters)

### IDEAS OF FUTURE OPPORTUNITIES

We are eager to discover the further use of these homeschool packs and the games developed for it.

- to adapt them to different topics, different age groups
- to continue with the tools of games, but in different areas(eg. the dice set of Pharaoh-code continues to be in good use at 5th grade when we learn solid geometry)

*"In a world growing and growing in pace and impulses, this kind of change in approach and attitude is essential"* Gyöngyvér, Head of the Lower Elementary Department

## ENVIRONMENTAL RESEARCH BASED CARDS



HUNGARY



*"Quality time spent together, collective experience, and we even practiced Maths in a playful way."*

*Laura, mother of 10-year-old*

### THE IDEA

Szent II. János Pál Iskolaközpont started to participate in the *Maths for the Millions: Mathematics in My World* programme from the autumn of 2017. The aim of this program is to accumulate positive changes in the mindset of the 6-12-year-old children about Maths - to help them understand, to deconstruct their fear about not being able to perform.

*"It became a frequent family program."*  
*Zétény, aged 10*

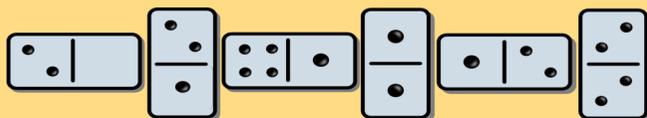
Our main approach to achieve this aim is

- to gamificate the curriculum (to capture the playful side of the subject),
- to show real life examples of the usage of the subject,
- and to involve more and more parents, not just as recipients but as a cooperating party.

*"The whole family loved Pharaoh Code."*  
Panna, aged 10

We hope that if the mindset of the parents can be changed, then it will have a positive feedback to the attitude of their children.

## DEVELOPMENT



We planned our packs to be suitable to the 4th grader age group (9-10 year olds). Our topic was calculations, the four basic operations (addition, subtraction, multiplication and division), including the operational order and brackets, between natural numbers from 0 to thousands. The introduction should happen at school, but the focus should be more on the work done at home.

*"All the members of the family could play."* Johanna, aged 10



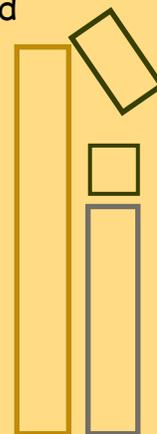
We have chosen the gamification approach to be the main theme of our calculation homeschool packs. Our concept was that Hungarian parents, working 8-10 hours a day themselves, do not want to teach their kids or practice with them (considering it to be the duty of the school), but will enjoy playing games with their kids (considering it to be a quality time spent together).

*"Our son Máté practices the multiplication board, we practice mental additions."* Edit, mother of 10-year-old

We elected some games and tools that were familiar to the children (domino, Cuisenaire-rods), and connected them with calculative game rules. We discovered

*"Even the smaller siblings could join."*  
Rita, parent of 9-year-old

existing games which have mathematical content and can be replicated with materials available at home (Pharaoh-code), and we also prepared manipulatives especially for the packs (memory games, puzzles, area conquest games).  
[should we include the exact description of the games?]



## DELIVERY



We adapted this tool in three academic years, in four classes: in 2017-2018 with one class, in 2018-2019 with both classes and in 2019-2020 with one class again. After every school year, we asked the feedback of pupils, parents and colleagues, and we improved the content year after year.

After the first year,

- we replaced the game of Cuisenaire-rods with the area conquest competition because it was too difficult even if the children knew the numerical meaning of each rod by heart.
- we wrote a new and more challenging game rule to domino (more complex addition and estimation instead of simple multiplication)
- we made different levels of the memory game according to the difficulty of the multiplication (and included tips for parents to lead their children)
- and we kept the game untouched which they found the most diverting (Pharaoh-code)

*"I liked the cute pictures of the multiplication puzzle."*  
Nóra, aged 10