

LOGIFACES

WHAT IS LOGIFACES?

The Logifaces tool is a geometric skill development game. It was created by Daniel Lakos, a Hungarian born architect and designer, assistant professor at Moholy-Nagy University, Budapest (MOME).

Logifaces received the Hungarian Design Award and was the finalist of a game design competition juried by Prof. Ernő Rubik, the world famous inventor of the Magic cube.

THE LOGIFACES GAME IS BASED ON THE LOGIFACES GEOMETRY

The Logifaces set is made up of 16 truncated prism blocks. The 16 pieces contain 11 different types of prisms, each of them identifiable by the height of their three vertices. These heights can be 1, 2 or 3 units.

The rule of the game is to build a continuous surface using up all blocks without leaving any gaps or breaks between them. The most common solution is a big triangle, but there are practically endless variations of the game - and anyone can come up with new ones.

JUMPING INTO SPACE

Logifaces is one of the first puzzles jumping from the ordinary two-dimensional plain to the three-dimensional space. The puzzle is two-dimensional, but the solution is in three-dimension. The tool offers a nearly infinite logical complexity, complicated mathematical and geometrical problems.

LOGIFACES FOR LEARNING

Logifaces offers many ways for educational use. How is Logifaces applicable in the school?

MATH CURRICULUM

- Switching between dimensions (plain and volume)
- Combinatorics (the different heights of the vertices determine the number of differently shaped blocks)
- Algebra (analyzing the number of vertices representing the different units, building a strategy to solve the basic equilateral triangle shape)
- Figurate numbers (demonstrating the relation of square and triangular numbers)
- Spatial geometry (demonstration of the distortion of the regular triangle based prism to truncated surfaces eg. similar, symmetrical, irregular triangles)
- Tessellation in a special three-dimensional way
- Graph theory
- Analyzing the light-shadow effect on the different angles and slopes



SCIENCE CURRICULUM

- Chemical bounds
- Biologically active molecules
- Crystalline structures

IT

- Polygonal modeling
- Network science

ART EDUCATION

- Design thinking (design inspired by spatial triangles, prism blocks, relationship of the virtual and the real world etc.)
- Relief structures, light and shadow effect, basic figurative forms

DEVELOPING SOCIAL SKILLS

- Problem solving skills
- Cooperation skills in peer learning
- Inclusive (e.g. shared activity with visually impaired)
- Non-verbal communicational skills



LOGIFACES game ideas

Basic Logifaces game rule: join the elements so that they form a continuous shape.

Animal shapes

Create animal shapes from Logifaces elements: a cat, a snake, a butterfly, a fish... (5-7 year olds)

Checked Logifaces for 2 or more players

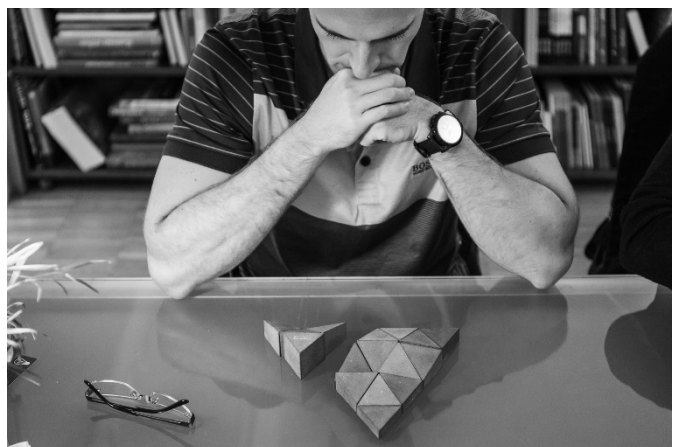
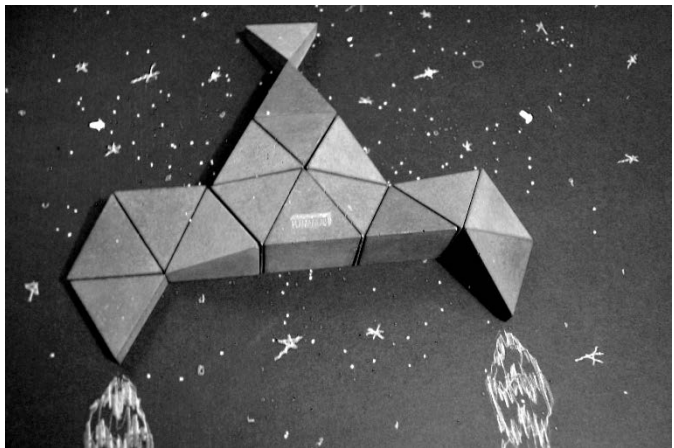
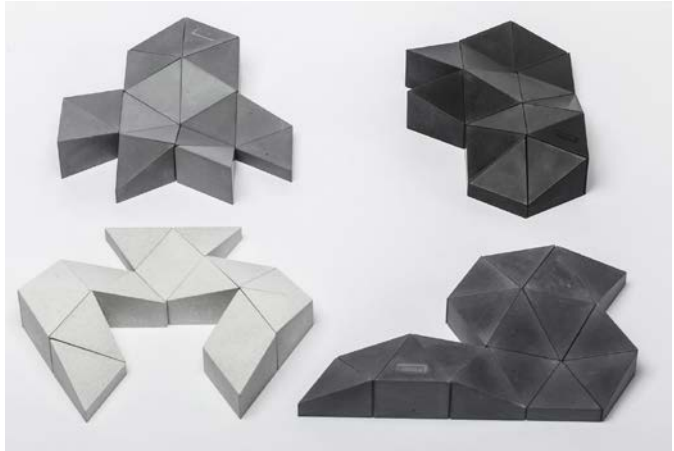
Put down any shape from the colored Logifaces elements, there is only one rule: don't put identically colored elements next to each other. The winner is the party which has used up more elements. (for 5-7 year olds)

Create a snake!

All players receive the same amount of elements. The winner is the party which puts down all elements first. (from the age of 8)

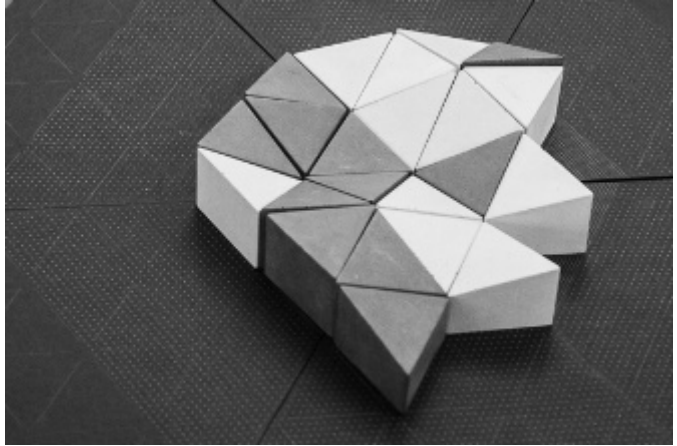
Look for the triangle!

Create a triangle from 4, 9, 16 or 25 elements. There is more than one solution. (from the age of 12)



Mirror game for 2

Start to construct any shape from your Logifaces set. Your partner (using another set) will simultaneously put together the mirror image of the shape.

**Symmetry game for 2 or 4**

The goal is to create a shape which is symmetrical in its layout. Divide the elements equally among the players. Players put down only one element at a time. If they run out of all 16 pieces without creating a symmetrical shape, then they are allowed to either move or exchange elements already used. The winner is the party which placed down the last element in order to achieve the symmetrical form.



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Webshop: <http://webshop.artrio.hu/product-category/logifaces/>