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# Kapla blocks

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## What's it about?

### The Material

These are oblong-shaped pieces of spruce wood, measuring 12 x 2.4 x 0.8 centimeters. These simple Kapla blocks encourage building three-dimensional objects such as castles or towers. These are particularly suitable for discussing positional relationships and symmetry. In addition Kapla blocks can be used on one plane to create parquetry and other patterns.

### What should be stimulated?

#### Guiding Principle of Numbers

- Determining quantities with the material

#### Guiding Principle of Measurement and Size

- Developing concepts to compare sizes (the same size/height, smaller than, bigger/higher than ...)

#### Guiding Principle of Space and Planes

- Developing concepts to describe positional relationships (beside, above, always in the middle, right, left .. ) in order to communicate with others
- Visual perception
- Development of the idea of space
- Seeing, understanding, and developing axis symmetry and figure displacement
- Creating a complete parquet on one level

#### Guiding Principle of Patterns and Structures

- Developing and describing a pattern
- Examining simple geometrical patterns, describing them, and predicting how they will continue

## Suggestions for the use of the materials

### Free Access

#### What can be done?

The children can either work alone, with a partner, or in groups.

The child/the group works with the materials without any instructions.



#### *Suggestions for observation*

- Is the child building recognizable objects?
- Is the child building symmetrical objects? Does he/she continue symmetries which have been started?
- Is it possible to recognize the structural principles? Does the child maintain the principles? Can he/she explain the structural principles being used?
- Does the child build on one plane or three-dimensionally?
- Does the child leave any gaps?
- Does the child count the Kapla blocks? How does the child go about counting the pieces (each one individually, divided into groups of a specific number, a few at a time, in rows or bundles)?

## How to continue?

The objects which the children have created can serve as a starting point for further activities.

*Starting point*      The objects created by the children

- Possible impulse*
- With patterns, friezes, mosaics, parquetry:
    - How could the pattern continue? Describe the continuation.
    - Can your partner continue the pattern?
    - Could you fill the whole room this way, or would you have to change your method at some point?
  - With actual buildings:
    - If you held a mirror up to your building, would the mirror-image look the same as the original? (Is the building symmetrical?)
    - How big/high/wide is your building? (length/width/height/ number of rooms or floors ...)

- Suggestions for observation*
- With patterns, friezes, mosaics, parquetry:
    - Has the pattern been continued correctly?
    - Can the child describe his/her pattern? Does he/she use appropriate terms?
  - With actual buildings:
    - Does the child recognize symmetry?
    - Can the child compare buildings in terms of their size/length/width/height?

*Task*      The child should decide how many Kapla blocks are being used.

- Suggestions for observation*
- How does the child decide the quantity?
    - Does he/she count each individual block?
    - Does he/she count the blocks in layers?
    - Does the child do any mental re-structuring?
  - Does the child take into account the fact that under some circumstances some blocks may not be visible?

## Following Instructions

### What can be done?

The children can either work alone, with a partner, or in groups.

#### Parquetry

*Material* Kapla blocks

*Task*

- The child, either alone or with a partner, arranges a pattern without any gaps. While they are laying the blocks the children can be developing the “rules of the game”.

*Suggestions for observation*

- Is the child able to arrange a pattern without gaps?
- Is the pattern continued consistently?
- Do the children develop “rules”?
- How do the children communicate while they are building? How do they work out differences?



#### Copying a Structure

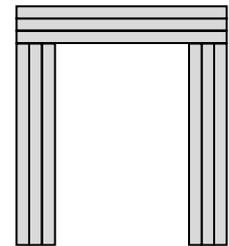
*Material* Kapla blocks  
Photograph or drawing of a structure

*Task*

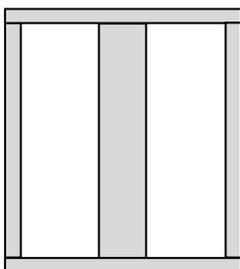


This task was inspired by the game Make'n Break.

- A child takes a card from the pile and tries to make a copy of whatever is pictured on the card.
- If he/she copies the picture correctly they get the number of points which are allocated on the card (this varies depending on how difficult the task is.)



*Suggestions for observation*



- How does the child go about copying the picture?
- How often does he/she look at the card? Can the child remember what the structure looks like?
- Does the child count how many Kapla blocks he/she will need?
- Does the child have the motoric skills required to copy the structure?
- How is it decided if the structure is correctly copied or not? What do the children talk about during the process?

## Skyscrapers

Material

Task

Kapla blocks

- The children should build the highest tower possible – either alone or in pairs.
- The children should build a symmetrical structure – either alone or in pairs.
- The children should symmetrically extend a structure.

*Suggestions for observation*



- How do the children proceed?
- What do they discuss?
- Do the children repeat ideas that they see others using? If so, do they make changes?
- What strategies do the children attempt?
- How do the children explain why some structures are stable while others collapse?
- Do the children recognize symmetry in the structures?
- Do the children discover any other particular aspects?



*Suggestions for reflection*

- Which structure in the room is the tallest?
- How high are the structures? First make an estimate and then measure them.
- If the height of one structure is known, how high are the others? Make a guess and then give reasons for the estimate (about half the height, double the size, just a bit higher ..).
- How can you build a particularly high tower? (consider stability)
- How can you build a symmetrical structure? How can you test for symmetry?



## Documentation

- Freehanded drawings of the structures
- Descriptions/ Presentation of the structures in text format
- Documentation with cut-out oblongs of paper glued to a sheet
- Documentation with the help of photographs

