
Tiles



What's it about?

The Material

Square mosaic tiles in shades of blue and red with an edge length of just 2.5 centimeters. Due to the square shape and the reduction to two colours the tiles are very suitable for creating patterns – especially for friezes and mosaics. Checkered flip chart paper can be made available to use as an underlay when the size of the grid squares corresponds to the size of the tiles. If such a background is provided it gives an orientation for laying patterns but it can also be limiting as any variation in laying the tiles would break the given grid. For this reason the flip chart paper should only be used when the tiling formation is intended to correspond with that in the grid.

What should be stimulated?

Guiding Principle of Space and Layers

- Constructing 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
- Discovering axial symmetry and displacement in figures

Guiding Principle of Patterns and Structures

- Sorting and structuring
- Detecting regularities
- Designing patterns
- Copying patterns
- Continuing patterns
- Describing patterns

Suggestions for the use of the materials

Free Access

What can be done?

The children can either work alone or in groups. The procedure is carried out with at least 200 blue and 200 red tiles.

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

Suggestions for observation

- Does the child create a pattern? Does the child maintain his/her pattern formation?
- Does the child create a mosaic or frieze pattern form?
- Does the child create symmetrical figures (using axis -, point -, rotational symmetry)?
- Are the child's pictures proportional?
- Are the tiles arranged in a grid or offset?
- Is the child building on one level or dimensionally?
- Does the child integrate patterns and structures from his/her direct environment?
- Does the child want to document his/her creation?
- Does the child go through different phases while building (For example first objective, and then in a pattern or vice versa)?

Material

Tiles, flip chart paper

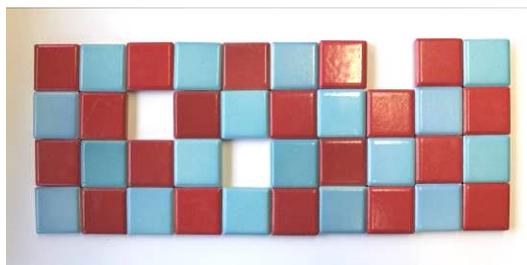
Suggestions for observation

- See above
- How does the child use the flip chart paper?
- Does the child lay his/her tiles according to the grid on the Flip chart paper or does he/she offset them?

How to continue?

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

Filling gaps



Starting point

The patterns created by the children, flip chart paper with grid size 4x10

Social form

Working with a partner

Task

- (Each child lays a pattern with 4x10 tiles.)
- The child removes one (or two or three) tiles from his/her pattern.
- The child looks at his/her partner's pattern and tries to determine which tile pieces are missing.

Suggestions for observation

- Is the child able to create a pattern? Can he/she maintain regularity?
- How does the child explain his/her solution?
- Can the child recognize the rule of the pattern without laying the tiles, or does he/she have to try it out?

Finding fragments

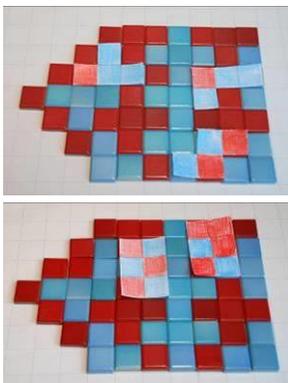
Material

Mosaics from one child or several children, flip chart paper, a blue and a red pen.

Social form

Working with a partner

Task



- The children choose a section of the mosaic and draw it on graph paper. The section chosen can either be rectangular or have a different shape.
- The children exchange their mosaic shapes and search to find where the section belongs in the original pattern. It is possible that the section can be found several times.

Suggestions for observation

- Does the child look for the section in a horizontal and a perpendicular direction?
- Does the child search for the mosaic section by positioning and trying out the cut-out or by mental deduction?
- Does the child check the solution?



Following Instructions

What can be done?

The children can either work alone or in groups.

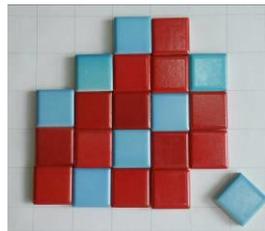
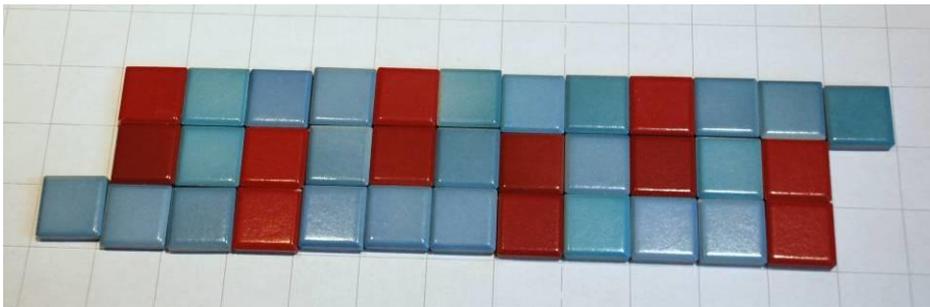
Copying patterns I

Material

Tiles, cards with pattern templates

Task

- The child has to copy the pattern.
- Encourage the child to formulate the rule according to which the design is created and then the child should continue the pattern.



Suggestions for observation

- Is the child able to copy the pattern?
- Does the child lay the pattern in columns or in lines?
- Does the child recognize the rules by which the pattern has been designed?

Copying patterns II



Material

Tiles, a sheet of checkered paper with a bordered area made up of 4x4 (5x5, 6x6) boxes, a red and a blue pen, flip chart paper

Task

- The child should create a pattern by colouring the boxes in the bordered area red or blue.
- The children should exchange their drawings and then copy the pattern with tile pieces onto the flip chart paper.

Suggestions for observation

- Does the child succeed in transferring the picture to an actual pattern?
- Does the child have motoric difficulties when colouring or laying the tiles?
- In which way does the child create the pattern (line by line, by columns, no recognizable system)?

Arranging tiles

Material

2 blue tiles and 1 red tile, a sheet of paper with squares, a blue and a red pen

Task

How can you arrange 2 blue tiles and 1 red tile? Find as many different ways as possible and draw them on the sheet of paper.

It is possible to perform this task using an increasing number of tiles and therefore with an increasing number of possibilities.

Suggestions for observation

- Does the child work systematically?
- Can the child transfer the pattern to the paper?
- How many variations does the child find?
- Which possibilities does the child take into consideration? Do the tiles touch at the edges, at the corners, or not at all?
- Does the child work on one level or dimensionally?
- Are the patterns found all different or can two patterns be rotated to mirror-image each other? How does the child define the equality or the diversity of patterns?

Documentation

- Freehanded drawings
- Description/ Design in text form
- Documentation with the help of flip chart paper
- Documentation with the help of photographs