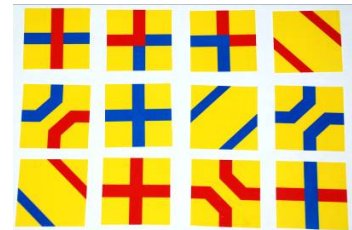

Track Puzzle



What's it about?

The Material

These are square cards. Two tracks are depicted on each card. There are four different track directions; however both tracks on each card will follow the same route. Each track can either be blue or red. This means that there are 12 different cards. It is possible to lay the Track Puzzle pieces next to each other in



such a way that the red lines and the blue lines always follow on from each other. A large area can be „mapped – out” in this way. Equally a different pattern can be created (Eg. only using pieces with right angled tracks, all one colour, or only diagonal tracks).

What should be stimulated?

Guiding Principle of Space and Planes

- 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
- Designing patterns
- Copying patterns
- Continuing patterns
- Describing patterns

Suggestions for the use of the material

Free Access

What can be done?

The children can either work alone or in groups.

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

- Suggestions for observation*
- Does the child make a plane or linear pattern with the puzzle pieces?
 - Does the child follow a particular route?
 - Does the child pay attention to the colour of the tracks?
 - Does the child pay attention to symmetry?
 - Does the child cover one big area or several small areas with the puzzle pieces?

How to continue?

The objects which the child has created can serve as a starting point for further activities.

Material The puzzle pictures created by the children

Task A child should copy one of the pictures.

- Suggestions for observation*
- Is the child able to copy the picture correctly?
 - Does the child pay attention to using the right colours?

Task The child who made the picture removes one (or more) pieces of the puzzle. A different child fills in the gaps.

- Suggestions for observation*
- Has the picture been returned to its original format?
 - Did the child use the right colours?

Task The child/The children should work out which is the longest track in the puzzle picture.

- Suggestions for observation*
- How does the child/do the children go about determining how long the tracks are?
 - Can the child/the children explain the decisions they are making?

Following Instructions

What can be done?

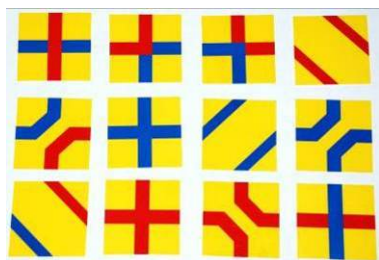
The children can either work alone or in groups.

Learning about and ordering the Track Puzzle

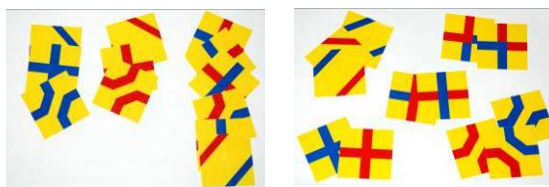
Material

Track Puzzle

Task



- The children have to find the (12) different cards in the Track Puzzle. (“How many different cards can you see?”).
- Each child should examine the 12 cards and put them in order.
- The child should try to explain the criteria he/she has used when ordering the puzzle pieces.



Suggestions for observation

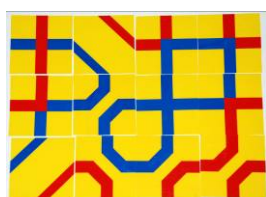
- Can the child find all 12 different cards?
- What criteria does the child use when ordering the cards (colour, pattern ...)?
- Can the child verbalize the method he/she has used when sorting the cards?

Discovering Patterns

Material

Track Puzzle

Task



- The child should lay a pattern with 10 (20, 30) puzzle pieces.
- The child should look at the whole pattern and figures and pick out and describe continuous tracks and routes.

Suggestions for observation

- Has the child been consistent with the colour scheme (red next to red)?
- Is the child able to spot „mistakes” made in the colour scheme?



Orientation

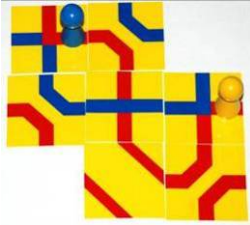
Material

Track Puzzle

Social form

(Individual or) working with a partner

Task



- The children should lay a Track Puzzle with 15 to 20 puzzle pieces.
- The children should randomly place two play figures on the pattern.
- The children should now work out if the two figures are standing on the same track.

Suggestions for observation

- Does the child mentally go along the track or does he/she use his/her finger to map out the route?
- Is it difficult for the child when the tracks overlap each other? Can the child still see the track as being continuous?

Spot the Difference

Material

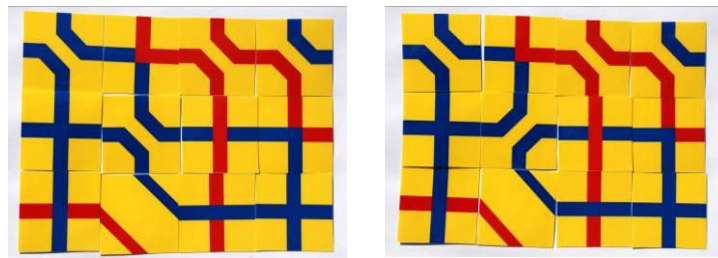
Track Puzzle

Social form

Working with a partner

Task

- The children should both lay the same pattern.
- One child changes one piece of the puzzle without letting their partner see which one.
- The partner now has to discover which piece of the puzzle was changed.



At the end the change is corrected and the roles are reversed.

Suggestions for observation

- How does the child look for the change? Does he/she compare columns or lines? Does the child keep the whole picture in view?
- Do the children recognize figures in the pattern?
- When making a change does the child pay attention to the colours used?

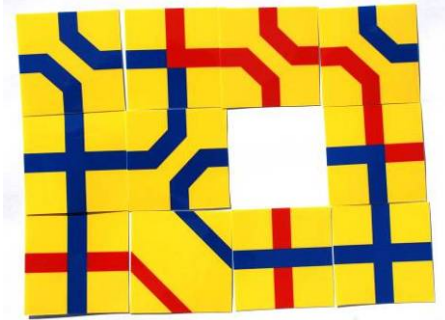
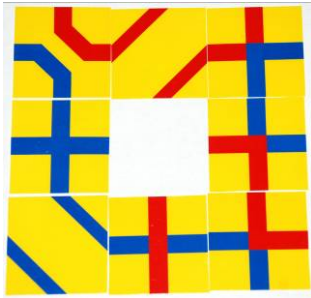
Complementary

Material

Track Puzzle, Puzzle picture templates with gaps

Task

The child has to find the puzzle piece to fill the gap



The child should give an explanation about why a particular piece fits in the gap or alternately why no pieces fit.

Suggestions for observation

- Does the child find various solutions to a task?
- Does the child explain his/her decision experimentally („I tried all the pieces and none of them fit“) or based on logic („No piece can fit the gap because there are no pieces with three red connections.“)

Documentation

- Freehanded documentation
- Documentation with the help of photographs