
Coloured dice



What's it about?

The Material

These are standard six-sided dice in the colours red, yellow, green and blue.

While three-dimensional constructions are the most obvious application for the dice, because of the variations in colours and the numbers shown, the possibilities for utilisation are increased. The dice are primarily conducive to sorting and counting but they also encourage two and three dimensional building. So when using the dice it is possible to take into consideration the colour and/or the numbers, or neither of these features.

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 axis symmetry and figure displacements

Guiding Principle of Patterns and Structures

- Sorting and Structuring
- Designing a pattern
- Constructing a pattern
- Developing a pattern
- Describing a pattern

Guiding Principle of Numbers

- Determining numbers with the material
- Breaking down numbers with the material
- Counting with the numbers on the dice

Suggestions for the use of the materials

Free Access

What can be done?

The children can either work alone or in groups. Each child should be provided with around 200 dice (50 of each colour).

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

Suggestions for observation

- Are the dice sorted (according to colour, the numbers on the dice, or a combination of both)?
- Is the child interested in the shapes the dice are forming or is he/she counting the numbers on the dice?
- Does the child create a pattern? Does he/she stick to the rules of the pattern? Is the pattern based on colour, the shape being formed, or on a combination of both?
- Is the child/Are the children building two or three-dimensionally?
- Are the children using the dice to play games? Are new games being discovered during the course of the activity?
- Does the child want to document what he/she has produced?



How to continue?

The activities begun by the children can serve as a starting point for further activities.

Starting point

The children's own patterns (two or three-dimensional)

Social form

Working with partners

Impulse

- A child should explain the rule of his/her pattern.
- Another child should repeat the pattern.
- Another child should continue the pattern.
- Another child should explain the rule of the pattern.
- The child should document his/her pattern. The picture or photo can be used as an example for other children.

Suggestions for observation

- Can the child explain the rule of his/her pattern?
- Can the child repeat the pattern?
- Can the child continue a pattern? Does he/she recognize the basic rule of the pattern? Can he/she verbalize the rule?

Starting point

The dice are sorted according to colour

Task

The child has to work out if he/she has sorted the same number of dice in each of the colours.

Suggestions for observation

- How does the child go about determining the quantity?
- Does he/she compare the amounts – without counting – by putting into pairs (one-to-one comparison)?
- Does he/she count the dice individually, in stages, with or without touching them?

Following Instructions

What can be done?

Copying a Pattern

Material

Dice in each colour

Social form

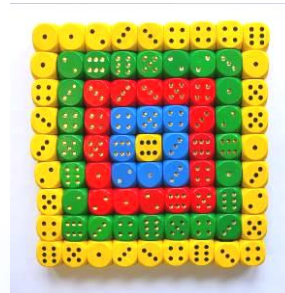
Individually or working with a partner

Task

- The teacher creates a pattern.
- The child should copy the pattern.
- The child should work out the rule by which the pattern was arranged and then should continue the pattern.

Partner work

- A child creates a pattern. Another child repeats it.
- A child creates a pattern. Another child continues the pattern.
- The child/children should verbally describe the pattern.
- The end product can be documented on a sheet of paper.



Suggestions for observation

- Can the child repeat the pattern?
- Does the child lay the dice in columns or line by line?
- Does the child recognize the rule by which the pattern was arranged?
- Can the child describe the pattern verbally?
- Can the child continue the pattern?
- Does the child take into consideration the colour, the number and/or the alignment of the dice when he/she is copying a pattern?

Quick glance

Material

One die (two dice)

Social form

Working with a Partner

Task

- A child throws a dice behind a screen.
- Just for a short time the screen is moved away so that the partner can see the dice.
- The partner has to say what the number on the dice is.

Suggestions for observation

Is the child (always) able to say what number was on the dice?

Documentation

- Freehanded documentation of the constructions
- Describing pattern in text form
- Documentation with the help of photographs