

## Introduction to the Use of Lowenfeld Kaleidoblocs

By Margaret Lowenfeld

Kaleidoblocs are designed to act in the reverse direction to normal testing procedures and so to supplement them. Where in standard testing procedures endeavour is made to limit the variables and sharpen the testing objective the aim in Kaleidoblocs is to present an invariable and closely integrated and interrelated set of objects to be used in two ways.

A. Spontaneous manipulation by the subject (in a manner parallel to the use of the Lowenfeld Mosaic Test material).

B. The posing of problems concerned largely with space & perception:  
practical reasoning: memory of concrete objects and ability to see them in many positions: creative understanding of relations.

I. Kaleidoblocs consist of 26 blocks of brightly coloured wood cut in such a way as to contain in themselves simple but basic mathematical relationships.

The blocks are packed in a strong wooden box with sliding lid with a diagram of the blocks on the back of the lid. Size of the box approximately 28 x 6 x 6 cm.

II. **Composition of the materials of the test**

a) One piece 12 units<sup>1</sup> in length, 1 ½ in width with one straight side and the other curved into the segment of a circle, rising to a height of 1 ½ units at its central and highest point. This piece is called the arc and is painted white on its plain surface, blue on its curved surface and red on its sides.

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<sup>1</sup> The length of the side of the cube is taken as the unit of measurement, being ¾ inch or 1.9 cm

- b) Two pieces, each with one curved and one straight side, called the half arcs, the length of the straight side 6 units, the curved side fitting over half of the arc,  $1\frac{1}{2}$  units in width, 2 units at its highest end and  $\frac{1}{2}$  unit at its lowest end. One is painted green, the other yellow.
- c) Four right-angled triangular prisms of a height of 1 unit, the length of the short sides equal  $2\frac{1}{2}$  units, painted green.
- d) A series of 19 rectangular prisms of different sizes, shapes and colours as follows:
- i. 1 rectangular block  $5 \times 1 \times 1$  unit, painted blue.  
1 rectangular block  $3 \times 1 \times 1$  unit, painted green.  
2 rectangular blocks  $2 \times 1 \times 1$  unit, 1 painted red & 1 yellow
  - ii. 2 flat rectangular blocks,  $3 \times 1 \times \frac{1}{2}$  unit, one painted red and one blue.  
4 rectangular rods,  $3 \times \frac{1}{2} \times \frac{1}{2}$  unit, painted respectively red, green, yellow and white
  - iii. 3 cubes,  $1 \times 1 \times 1$  unit. painted respectively red, green and white.  
6 half-cubes,  $1 \times 1 \times \frac{1}{2}$  unit, painted respectively red, green, yellow and blue, the remaining two white

### III. Interrelation of the Blocks

All the pieces are geometrically related to each other as follows:-

- a) When the two half arcs are placed end to end with their curved surface fitting that of the arc, the three blocks from a rectangular block of  $12 \times 2 \times 1\frac{1}{2}$  unit.

- b)** The rectangular blocks of II.d.i. placed end to end in a line equals the length of the arc, 12 units.
- c)** The blocks of groups II.d.ii. and iii when put together to form a rectangular block also equals the length of the arc, 12 units.
- d)** Put together, the blocks of II d. compose a rectangular block of  $12 \times 2 \times 1$  unit.  
 Fitted alongside the group of arc and half-arcs (III a), a new rectangular block is formed,  $12 \times 2 \frac{1}{2} \times 2$  units.  
 If the four triangular prisms be arranged in two squares, one above the other, these fit the end of the block, and a rectangular block of  $14 \frac{1}{2} \times 2 \frac{1}{2} \times 2$  units is composed
- e)** The length of the straight side of the half-arc, 6 units can be composed four times with the blocks of group II d. in a variety of combinations
- f)** The blue 5 unit block can be composed by  $3 + 2$  units, by  $2 + 2 + 1$  units, and by combination of the smaller units. Its length equals the short sides of two +triangular prisms placed side by side.
- g)** The length of four units can be composed by the  $3 + 1$  unit, by  $2 + 2$  units, or by combination of smaller units.
- h)** The green 3 unit block can be composed of the two  $3 \times 1 \times \frac{1}{2}$  flat blocks, the three cubes, the four rods, or the six half-cubes, one piece of each group presenting fractions of  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$  and  $\frac{1}{6}$ , of the green block.
- i)** The yellow and the red 2 unit block can be composed of cubes and half-cubes.

- j) The volume of group II.d with the exception of the few rods divides into three equal blocks of units (blue blocks, red + white blocks, green + yellow blocks).

Two sets of Instructions were originally draw up, one for Adults and one for Children.

After use for a number of years both sets of Instructions have been withdrawn for revision and will be reissued as soon as this revision can be completed.

As a temporary measure this introduction has been draw up to enable work with children to begin, as good progress can be made with Section A (usually called Free Construction).

The purpose of this first part of the test procedure is to give child or adult an opportunity to employ imagination and ingenuity in the use of the materials of the test to create an object, scene or abstract construction<sup>2</sup> before having any previous knowledge or experience of the interrelations of the blocks.

### **Free Construction**

The child should be seated at a table of suitable height with all the blocks placed in a casual heap on the table, all within reach of the child and the box out of sight.

The Tester now says, "You see all these blocks, they are of different shape and of different colours. I would like you to make whatever you like with these blocks". The child is then allowed to build or to play with the blocks as he chooses.

If he completes a construction he is asked, "Would you like to tell me about this?" and the Tester may ask father non-leading questions so as to get an idea of what the child has had in mind, and if anything special occurred to him. The construction should then be

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<sup>2</sup> The terms used are those current with analysis of responses to the Lowenfeld Mosaic Test

recovered, either by drawings or by photography. If the child turns the blocks into elements in a moving scene instead of using them for a construction, the Tester should allow a reasonable time, recording what is going on and then bring it to an end.

As a rule small children will talk while they build or play with the blocks and the Tester should show his interest by making non-leading comments, and a record of the talk should be made.

### **Record and Comparison**

In the early days of work with Kaleidoblocs Dr. Bates Ames and Miss Learned of the Gesell Institute carried out a study of children from 2-6 years inclusive.

Their work we published in:

The Journal of Genetic Psychology, 1954, 84 237-270.

The Journal of Genetic Psychology, 1954, 85 3-38.

and contains many detailed analytical tables of the children's responses. These in the main, offer useful comparative material concerning the response of American children to Kaleidoblocs.

There is, however one important fact to be noted concerning this piece of work, that in presenting the material to the children the blocks were disposed in an arrangement which made clear their interrelation in size and shape and therefore invalidated one of the main purposes of this work of the test procedure. This should not be repeated.

Nevertheless the first paper gives an excellent account of age changes in response to the Kaleidoblocs blocks and the second a study in individual profiles together with comparison of the responses of the same children to the Lowenfeld Mosaic Test and the Rorschach.