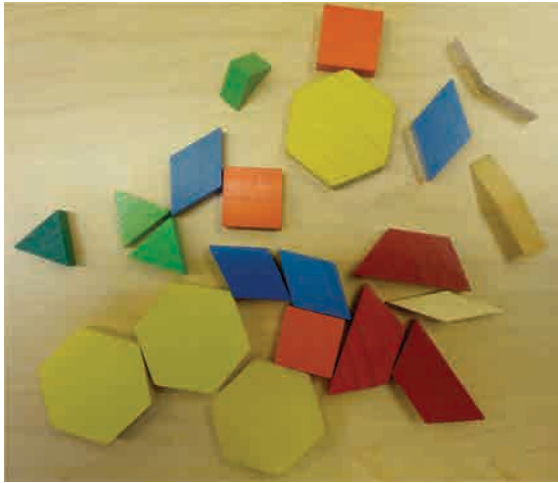


APPENDIX XX

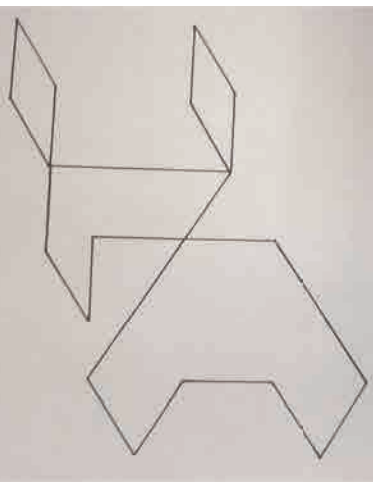
Harrison Clinical Interview Tasks Descriptions

1. Composition and Decomposition of Geometric Shapes

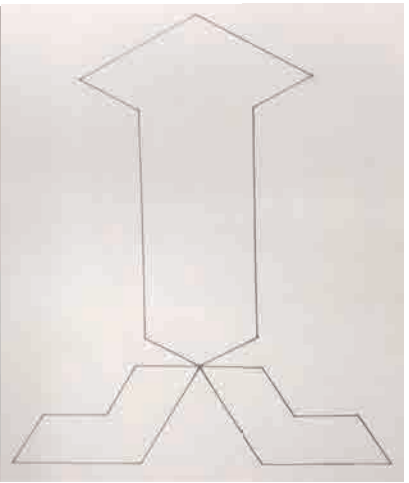
Students were presented with an assortment of geometric shapes (see 1a) and an accompanying outlined image (see 1b and 1c). Students were asked to fill the outlined image with the pattern blocks. If needed, students were encouraged to fill in all of the white space inside the outline. This task was used to gain a better understanding of how young children perceive space and demonstrate composition and decomposition of 2D shapes.



1a



1b



1c

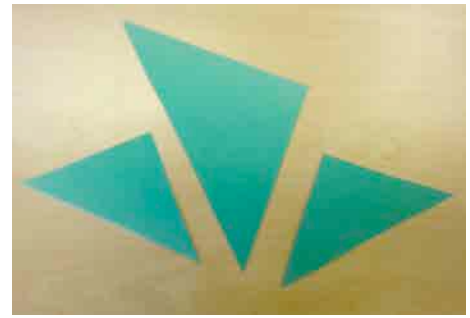
2. Triangle Puzzle

In this task, students watch as the interviewer cuts or ‘decomposes’ a square into triangular partitions. This task was used to gain understanding about students’ approaches to spatial reasoning, shape composition, and conservation.

Students were presented with a square piece of paper and asked to identify its shape. With the child watching, the interviewer cut the square into two equal sized triangles. The interviewer asked the child to identify the two new shapes and then placed the two triangles in front of the child. Students were asked to put the two triangles back together and make the original square shape.



Once completed, the interviewer presented the child with another square piece of paper and went through the same process as above, but instead of cutting the triangle into the two triangles the interviewer cut the square into three triangular pieces.



If the child was able to compose a square with three triangular pieces, the process was repeated a third time with four triangular pieces.

Figure 1 shows the three ways the square was cut to create the 2, 3, and 4 triangular puzzle pieces. When placing the triangular pieces in front of the child, the interviewer was careful to arrange in the pieces in a way that did not give away the solution.

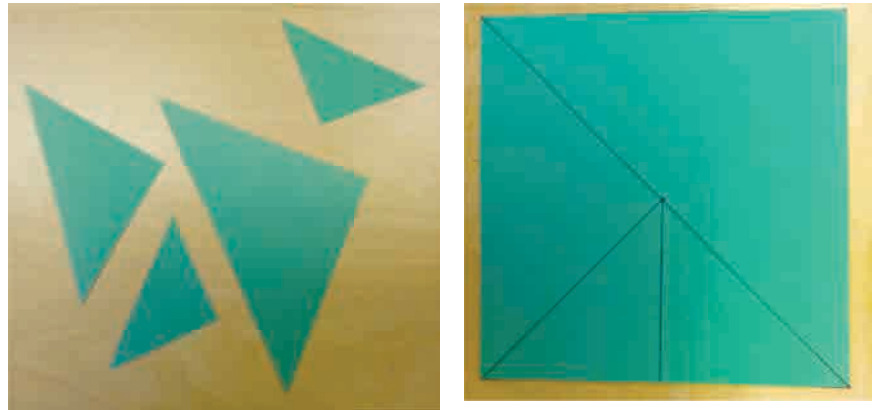


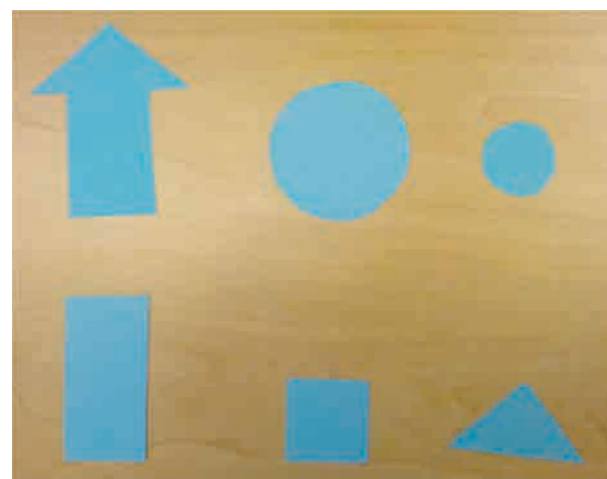
Figure 1

3. Memory for Geometric Arrangements

In this task, students were briefly presented with an arrangement of different shapes and asked to recreate geometric arrangements from memory. This task provided insight into the sort of geometric details young children attended and remembered (e.g., number, shape, size, location, orientation, direction).

Students were presented with six different shapes and asked to identify them. Each pile consisted of four identical shapes.

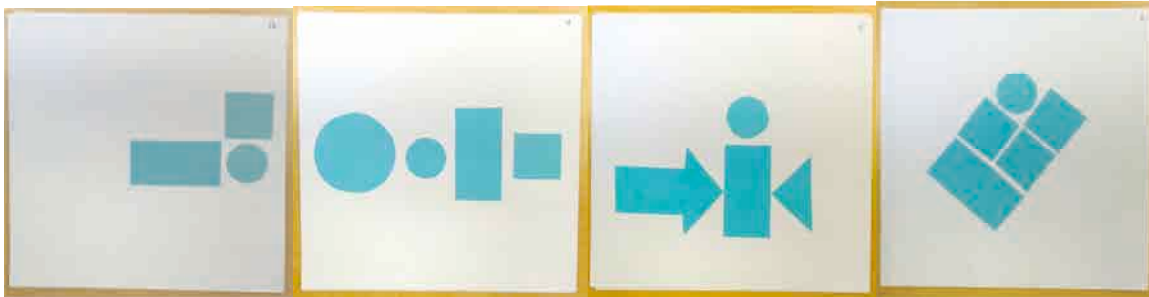
Students were then shown a geometric arrangement of shapes on cardstock and were told they had 5 seconds to try to remember the arrangement. The interviewer then hid the cardstock from view and asked the child to recreate the arrangement on a blank cardstock using any of the shapes made available at the beginning.



In total, students were shown 9 different geometrical arrangements of increasingly difficulty:



1a 1b 2a 2b 3a



3b 4a 4b 5

After completing the deck, students were re-shown the arrangements one at a time and asked to reflect and comment on the difficulty of the item. This provided insight into the student's metacognition, thinking about their thinking, and the opportunity to verbalize specific strategies used.