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**Children's understanding of large-scale mapping tasks: an analysis of talk, drawings, and gesture.**

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Summary: This research examined how children represent motion in large-scale mapping tasks that we referred to as “motion maps”. The underlying mathematical content was transformational geometry. In total, 19 children, 8- to 10-year-old, created motion maps and captured their motion maps with accompanying verbal description digitally. Analysis of the responses included a fine-grained coding of their drawing, oral description, and hand gestures used while describing. In addition, the classroom teacher (second author) also assessed the drawings and the oral responses. Results indicate that low achieving children produced fewer objects in their drawings, fewer gestures, and fewer verbal descriptions when engaging in a large-scale mapping task compared to high achieving children. Moreover, these children were found to use a series of connected small-scale maps to construct the larger-scale representation.

*Classification:* G52 C52 C32

*Keywords:* children; drawing; dynamic representations; gesture; motion map; spatial thinking; static representations; transformational geometry; verbal descriptions

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