

*No. 4 Oi Ying LEUNG (MPhil/Y1)*

**The relationship between spatial ability and math performance. The mediating role of number magnitude and Relation to Operands**

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The current study aims at investigating the relationship between spatial ability and children's math performance, as well as exploring whether the relationship is mediated by the number magnitude and the understanding of the Relation to Operands principle ( $A + B > A$ ). A sample of 273 fourth-graders were tested for their spatial ability, number magnitude (NM), understanding of the Relation to Operands (R-to-O) principles and their math performance, as well as a list of control variables (e.g. IQ and working memory). The result showed that children's spatial ability significantly predict math performance, even after controlling for the potential confounding variables. The relation was fully mediated by the NM and the understanding of the R-to-O principle. This finding, in addition to supporting the link between spatial ability and math performance, further indicates that the ability to associate number symbols with magnitude and the ability to detect the Relation to Operands principle maybe the mechanism underlying the relation.