

*Poster Presentation:* #P2  
*Name of Student:* HUNG Wing Yiu (MPhil/Y1)  
*Name of Primary Supervisor:* Dr Winnie CHAN

### **The relation between Spontaneous Focusing on Numerosity (SFON) and mathematical performance in children**

Spontaneous Focusing on Numerosity (SFON) refers to the ability to self-initiatively focus on numerosity in the surrounding. Children with high SFON tendency pay more attention on numerosity without explicit guidance of others. Research found that preschooler's SFON is associated with different aspects of mathematic performance, such as cardinality understanding, arithmetic skills and object counting. It can also predict children's later mathematical achievement, after controlling for their nonverbal IQ and verbal comprehension. However, few studies to date have explored the mechanism behind the relation between SFON and children's mathematical performance.

The present study aims to explore the factors which contribute to the relation between preschooler's SFON and their symbolic number and arithmetic development. Previous studies have suggested that non-symbolic and mapping skills may play a role in relating SFON and children's mathematical performance. In the present study, we will further clarify whether non-symbolic and mapping skills indeed play a mediator role in explaining the relation between SFON and difference domains of early mathematical skills including number comparison, arithmetic tests, and counting. 200 children aged 4-5 will be assessed for their SFON tendency, mapping skills, enumeration skill, symbolic and non-symbolic comparison, and arithmetic skills. Digit span and listening comprehension will be included to control for children's working memory and verbal skills. It is predicted that 1) SFON would positively correlate with children's mathematical performance after controlling for age, verbal skills and working memory; 2) the relation between SFON and mathematical performance would be explained by individual differences in children's ability in non-symbolic and mapping skills. The findings will help us better understand how the early tendency to focus on numerosity is related with children's mathematical skills.