

South West Mathematics PD Providers Conference Wednesday 18th September 2019 Programme

10:00 Welcome and introduction to the day: Neil Vincent, Chris Gould and Ruth Trundley

10:15 Key Note 1: Mike Askew

Mathematics and representations: from 'putting to' to 'emerging from'

Commonly we talk of representations representing someone or something. In this session Mike will explore taking a different perspective on representations in mathematics teaching and learning: that mathematical representations are not representations 'of' anything, but that representations are the very means through which mathematical ideas come into being. This perspective makes a subtle shift in thinking about the roles of concrete, pictorial and symbolic 'representations'; from asking, 'what is the best way to represent *this mathematics*' to asking 'starting from this representation what mathematics might *come out*'?

11:30 Break

11:45 Groups discussion: implications of Key Note 1

12:05 Key Note 2: Colin Foster

Developing fluency with representations

In this session, Colin will explore how students can develop their fluency with a variety of important mathematical representations. He will examine how both single and multiple representations can enable students to appreciate mathematical structure and build connections between important mathematical ideas. He will draw on his current research with colleagues in Japan, where principled, systematic use of representations across topics and ages seems to generate coherence across the mathematics curriculum, and he will consider what we might learn from this.

1:15 Lunch

2:00 Groups discussion: implications of Key Note 2

2:20 Key Note 3: Helen Williams and Mike Ollerton

Representation and thinking through Cuisenaire

In this session Helen and Mike will work on how Cuisenaire rods might be used to access a range of mathematical ideas for learners across the Primary/Secondary spectrum. The underlying themes of this session are:

- How we might use the same manipulative to represent many mathematical relationships
- How we might deepen students' own relationships with mathematics.

3:20 Groups discussion: implications of Key Note 3

3:40 Reflection and evaluation

3:45 Conference end