

## RATIONALE

Nurturing thoughtful minds among students is an up most important goal in education put forward to teachers in this challenging era. In the learning of mathematics, reasoning is seen as a powerful way to develop insights about patterns and structures in both real-world and mathematical situations (National Council of Teachers of Mathematics, 2000). These insights will help students to see that mathematics make sense and is not just a school subject to be learned for examination. Despite the importance of reasoning, many school students at the primary and secondary levels are learning mathematics with a take-for-granted mindset. The mathematics taught to them is accepted without any doubt simply because the teacher is considered as an authority in the subject who is always right. No mathematical argument is seen important in their acquisition of mathematical knowledge. In contrast with take-for-granted mindset, students with a reason-based mindset will always seek for a reason for any mathematical pattern and structure presented to them. Thus, this virtual colloquium will discuss how reason-based learning in mathematics can promote the development of mathematical reasoning among primary and secondary students.

## ABOUT THE VIRTUAL COLLOQUIUM

This virtual colloquium consists of two online sharing sessions. The first session focuses on (a) comparison between reason-based learning and take-for-granted learning in mathematics, and (b) importance of reason-based-learning in mathematics. The second session focuses on how mathematics teachers can promote mathematical reasoning ability among their students. Several exemplar learning tasks for reason-based learning in primary and secondary mathematics will be shared.

## OBJECTIVES

- Compare take-for-granted learning and reason-based learning in mathematics
- Argue for the importance of reason-based learning in mathematics
- Critique and evaluate exemplar tasks for reason-based learning in mathematics

## FACILITATORS



Mr Gan Teck Hock is a Specialist in mathematics education of the Training Programme Division, SEAMEO RECSAM. He has more than 30 years of experience training mathematics teachers in Malaysia. His areas of interest in mathematics instruction include promoting mathematical reasoning among school students in Malaysia.



Ms Teh Kim Hong is a Specialist in mathematics education of the Training Programme Division, SEAMEO RECSAM. She served many years as a teacher educator specialising in mathematics education. Other than her passion in lesson study, she is keen in sharing the approach of teaching mathematics through problem solving with local teachers to promote higher order thinking.

