

## Primary Mathematics

### **Key Learning Theories for Teaching Mathematics** | PDSLE13 |

3 Credits 

In this session, five key learning theories are discussed to help participants understand how primary students can learn mathematics to achieve conceptual understanding for mastery. Effectively adopting these key learning theories in classroom teaching will help to develop students' thinking and problem-solving skills, among other 21<sup>st</sup> century competencies.

### **Differentiated Instructions for the Teaching of Primary Mathematics**

| PDSLE08 |

3 Credits 

In this webinar, participants will learn to plan for differentiation for advanced and struggling students. Differentiation in terms of content, process and product will be discussed. Participants will learn DI strategies to teach effectively and to design assessment tasks and enrichment tasks using the textbook.

### **Mathematical Problem Solving** | PDSLE12 |

3 Credits 

Problem solving is an integral part in mathematics learning. It is intended to hone students' problem-solving skills and to gain a deeper insight in the contents they have learnt. Nonetheless, it is also an area that poses tremendous challenge to the minds of the students, especially when it comes to solving non-routine problems. In this webinar, we identify key components and skill sets required in problem solving and address how all these can be integrated to enable students to solve problems more effectively.

### **Designing Activity-based Lesson in Primary Mathematics** | PDSLE18 |

3 Credits 

Jerome Bruner's theory of representation provides an underpinning for an activity-based lesson. In this webinar, we address key aspects of an activity-based lesson to make it purposeful and not simply going through the motions of activity.

### **Teaching of Arithmetic Operations on Fractions** | PDSLE21 |

3 Credits 

Fraction is a harder concept for students to grasp. The concept is based on part-whole relationships but the main hindrance in learning fractions lies in the extension of the four arithmetic operations from whole numbers to fractions. In this webinar, we address key points in teaching operations on fractions so that not only they master the arithmetic on fractions but also understand the rationale of these operations instead of rote learning a mechanical process.

## Primary Science

### **Alternative Conceptions: When Thinking You Are Right Can Be So Wrong**

| PDSLE10 |

3 Credits 

Often, children learn science, influenced by their daily experiences that may lead to them having alternative conceptions (as distinguished from scientific conceptions or misconceptions). When these alternative conceptions are not addressed, they hinder the learning of scientific conceptions. In this webinar, we explore 5 sources of alternative conceptions and use the A.B.B.A. approach to engender conceptual change.

### **Laboratory Activities of Process Skills and Practices as Inquiry Teaching Partners in Science** | PDSLE15 |

3 Credits 

In this module, participants will leverage on laboratory activities to conduct inquiry-based investigations and fair-tests. Age-appropriate science process skills will be illustrated in examples provided. Participants will select one investigation of their choice and share how inquiry is included in the design of the investigation.

### **Technology as Inquiry Teaching Partner in Science: Using Simulations and Videos** | PDSLE17 |

3 Credits 

In this module, participants will be introduced to the meaningful use of emerging technologies for scientific inquiry. Participants will explore the use of science simulations and videos to facilitate meaningful scientific inquiry. Specifically, they will learn to identify and locate websites for age-appropriate simulations and video resources and integrate them in the teaching-learning process.

### **Assessment For, Of and As Learning in School Science** | PDSLE23 |

3 Credits 

In this session, participants will be introduced to “assessment for, of and as learning” in science. Participants will examine the different types of assessment items that will focus on performance and higher order thinking as well as the use of use of technologies for assessment. Participants will be guided to design age-to-appropriate assessment items to facilitate the teaching and learning processes. Formative assessment will be covered in the training.

## Primary STEM

### **Learning Through Exploration on STEM Trails** | PDSLE20 |

3 Credits 

A STEM trail creates opportunity for exploratory learning experience beyond classroom. On a STEM trail, students learn how science, technology, engineering and mathematics can be used synergistically to explore and handle problems in a real-world environment. In this webinar, we address what it takes to make a trail effective and fun for students to extend and enrich their learning experience. We illustrate STEM trails with examples.