Workshop on

Enhancing Computational Thinking Skills and Coding for STEM Educators

11 APRIL 2026

SEAMEO RECSAM
Penang, Malaysia

Mode: Online

Target Participants:

- Preschool educators and early childhood practitioners.
- Primary school teachers.
- Secondary school teachers (including ICT, mathematics, and science educators).
- Teacher educators, curriculum developers, and education officers.

ORGANISED BY :

Southeast Asian Ministers of Education Organization
Regional Centre for Education in Science and Mathematics
Jalan Sultan Azlan Shah, 11700 Gelugor, Penang, Malaysia

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RATIONALE

As computational thinking becomes increasingly important in modern education, educators need effective approaches to integrate these skills into classroom teaching across different educational levels. Many teachers may require practical guidance, suitable teaching strategies, and appropriate assessment methods to implement computational thinking and coding effectively. Therefore, this online webinar aims to equip educators with practical strategies, classroom-ready activities, assessment methods, and pedagogical insights to support the integration of computational thinking skills and coding in teaching and learning from preschool to secondary education.

INTRODUCTION

Computational Thinking (CT) is a fundamental skill that enables students to approach problems systematically by breaking down complex tasks, identifying patterns, developing step-by-step solutions, and evaluating results. These skills are not limited to computer science but support learning across various subjects, including mathematics and science, by strengthening logical reasoning and problem-solving abilities. Coding provides a practical and engaging way to apply computational thinking skills, allowing learners to transform ideas into interactive outcomes and fostering creativity, collaboration, and a deeper understanding of concepts.

OBJECTIVES

Through hands-on activities, real classroom examples, and collaborative discussions, this workshop aims to:

1. Enhance educators' understanding of the computational thinking skills concept and their relevance across different educational levels.
2. Demonstrate practical classroom activities, unplugged and digital coding approaches, which are appropriate for different levels.
3. Introduce assessment strategies and methods to assess CT skills.
4. Encourage educators to design CT-integrated lessons to apply Computational Thinking skills in their classroom.

WEBINAR STRUCTURE AND METHODOLOGY

The webinar will be conducted online and will include:

- Interactive sessions.
- Demonstrations of CT and coding activities.
- Discussions and sharing feedback based on teaching levels.
- Question-and-answer sessions.

Active learning strategies such as sharing and reflective discussions during the session will be embedded to enhance participant engagement.

CONTENT FOR THE WORKSHOP:

1. Core components of Computational Thinking skills.
2. Demonstrate unplugged and coding activities (Algorithm Games and Scratch programming).
3. Assessment strategies and methods to assess CT skills.
4. Designing a lesson plan for a CT-integrated lesson.

EXPECTED OUTCOMES

By the end of the workshop, teachers/educators will be equipped with practical ideas, resources, and strategies to foster critical thinking, creativity, and digital literacy in their classrooms, helping students not only learn to code, but also learn how to think. The participants are expected to:

- Acquire a clear understanding of computational thinking concepts.
- Identify appropriate CT skills and coding activities for their respective teaching levels.
- Apply practical assessment strategies and methods to integrate CT into their classrooms.
- Acquire a clear understanding of designing a CT integrated lesson plan.

DURATION AND MODE OF DELIVERY

Duration: 3 hours

PROGRAMME

Time	Activities	Person in charge
09.30 – 10.00	Registration	ICT Team & MC
10.00 – 10.15	Opening and Briefing	MC & Dr. Warabhorn Preechaporn
10.15 – 10.45	Computational Thinking Skills concept and activities	Dr. Wan Noor Adzmin
10.45 – 10.50	**Break**	**Group Photo Session**
10.50 – 11.20	Scratch programming and activities	Dr. Warabhorn Preechaporn
11.20 – 11.50	Assessment Strategies and Methods	Dr. Parvinder Singh Amar Singh
11.50 – 12.20	Computational Thinking (CT)-integrated lesson plan	Dr. Warabhorn Preechaporn
12.20 – 13.00	Q & A, Evaluation, and Closing	Facilitators & MC

WORKSHOP FACILITATORS

Dr. Warabhorn Preechaporn is a Mathematics Education Senior Specialist in SEAMEO RECSAM. She holds a doctorate in Computational Science from Walailak University, Thailand. She has 26 years of teaching experience as a mathematics teacher in Nakhon Si Thammarat, Southern Thailand. She is currently in the Training & Research Division, SEAMEO RECSAM, where she has facilitated and supervised the training courses for educators from the SEAMEO member countries and countries from the African continent. She has moderated and presented papers at international conferences. Her interests are in dynamic mathematics software such as GeoGebra, Scratch, Problem-Based learning the 4 Core Areas (PBL4C), Computational thinking, and coding with Scratch to create interactive activities, Lesson Study, and Mathematical Explorations through Paper Folding and the 3-D straw models.

Dr. Wan Noor Adzmin Mohd Sabri, obtained her Ph. D. in Instructional Leadership from University Malaya. She has 34 years of experience in the field of education, her areas of expertise are IBL in mathematics, STEM education, multigrade classroom pedagogy, assessment, computational thinking skills, Instructional Leadership, and Instructional Design. As a Mathematics Education Specialist, she is currently employed with SEAMEO RECSAM. Additionally, she has conducted research on STEM community learning spaces, preschool STEM education and computational thinking skills.

Dr. Parvinder Singh Amar Singh is a senior education specialist at SEAMEO RECSAM, Penang, Malaysia. Obtained his Ed. D. in Science Education from University Sains Malaysia in 2007. Have 34 four years of teaching experience in the field of science education, which comprises 6 years of experience in primary school science, 11 years of experience in secondary school science, and 17 years of experience in degree-level for science education and research methods in the Teacher Education Institute. Has a passion for delivering pedagogical content knowledge in science subjects, research methods, action research, developing research instruments and rubrics, teaching functional work skills focusing on practical and communication skills, applying teaching and learning pedagogies for cognitive skills development in science, delivering inquiry-based science curriculum, STEM education & practicing inventive thinking skills for creative problem-solving. Have substantial in-depth experience in academic research and scholarly writing for journal articles and thesis supervision. Latest research conducted entitled: Research Study of the Southeast Asian Teacher Education Programme (SEA-TEP) in Malaysia; Enhancing Teacher Capacity in STEM through Professional Development: A Case Study of the SEA-TEP Program in Malaysia & Enhancing Teacher Capacity in STEM through Professional Development: A Case Study of The SEA-TEP Program in Malaysia.

REGISTRATION & CLOSING DATE

To enrol, please register online by **10 April 2026** via **https://forms.gle/S5FJHyYMUr1E5oY57** or scan the following QR code.

SCAN ME

FOR ENQUIRIES

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