

**SEAMEO Basic Education Standards(SEA-BES):**  
Common Core Regional Learning Standards(CCRLS)  
for  
Mathematics

(SEABES –CCRLS in Mathematics)

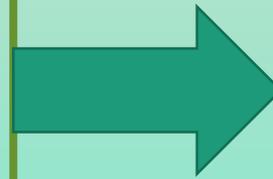
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# Aim of SEA-BES CCRLS in Science and Mathematics

“To provide world-class learning standards in Science and Mathematics, including 21<sup>st</sup> century skills that can be used as benchmarks in SEAMEO Member Countries to ensure all students have access to fundamental knowledge, skills and values in order to be socially responsible, globally competitive and sustainable.”



**SEA-BES  
Common Core Regional  
Learning Standards  
(CCRLS)  
in Mathematics  
Framework**

# SEA-BES CCRLS in Mathematics Framework

## Importance of mathematics

- to acquire mathematical literacy and manage living economically
- to establish a thinking society, being critical, innovative to handle challenges and for better living
- to support learning of other subjects such as science and STEM related fields
- to develop 21st century skills and competency through math as a science of patterns
- To design with data for technological advancement and business model
- To develop logical reasoning as a habit of mind for sustainable development through viable argument in understanding each other

# General structure of the CCRLS in Mathematics

The interwoven components include:

- ✓ content knowledge and skills
- ✓ Mathematical processes
- ✓ Values, attitudes and habits for human characters

How to organise the strands



Maths Framework

Figure 3: CCRLS Framework for Mathematics and Aims of Mathematics Learning

**Mathematical Values, Attitudes and Habits for Human**

**Mathematical Values:**

Generality and Expandability  
Reasonableness and Harmony  
Usefulness and Efficient  
Simpler and Easier  
Beautifulness

**Mathematical Attitude attempting to:**

See and think mathematically  
Pose question and develop explanation such as why and when  
Generalize and extend  
Appreciate others' idea and change representation to conceptualize

**Habits of mind for Citizen to live:**

Reasonably and critically with respecting and appreciating others  
Autonomously  
Creatively and innovatively in harmony  
Judiciously using tools such as ICT  
Empowerly in imagining the future

**Mathematical Thinking and Processes**

**Mathematical Ideas for:**

Set, Unit, Compare, Operate, Algorithm, Fundamental principle, and Varied representation such as table, diagram, expressions, graph and translations.

**Mathematical Thinking:**

Generalization and Specialization  
Extension and Integration  
Inductive, Analogical and Didactical reasoning  
Abstracting, Concretizing and Embodiment  
Objectifying by representing and symbolizing  
Relational and Functional thinking  
Thinking forward and backward

**Mathematical Activities for:**

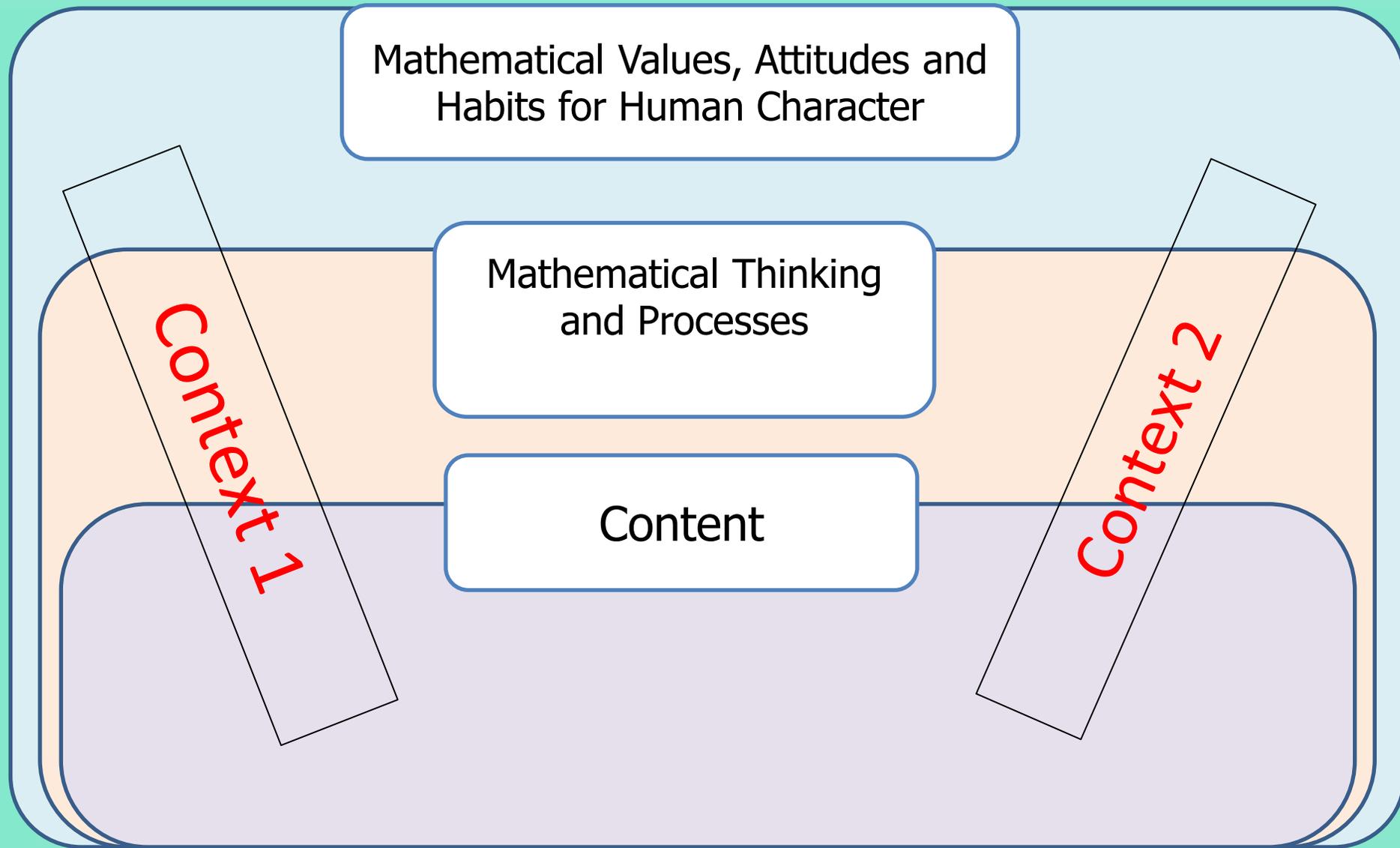
Problem Solving  
Exploration and Inquiry  
Mathematical Modeling  
Conjecturing, Justifying and Proving  
Conceptualization and Proceduralization  
Representation and Sharing

**Content**

- Numbers & Operations
- Quantity & Measurement
- Shapes, Figures and Solids
- Pattern & Data Representations

- Extension of Number and Operations
- Measurement & Relations
- Plane Figures & Space Solids
- Data Handling & Graphs

- Number & Algebra
- Space & Geometry
- Relationship & Functions
- Statistics & Probability



**Interlinking of the three components with the context**

# Special features:

- The 3 Key Learning Stages
  - developmental
  - simple fundamental concepts to more complex
  - Given different names to the titles
  - Nature of the mathematics learning to fit the demand of the 21st century
  - Format of the curriculum draft

# Format

**Key Stage Number:** (Key Stage 1, 2 and 3)

**Strand:** Title of Strand under the Stage

- The description of each **strand** gives clear images for the developmental level in three Stages.

**Topics:** A set of standards is described under the topic.

- Every topic sentence begins from the **gerund form** of the verb to include mathematical practice.

- In the case of **Mathematical Process and Humanity Strand:**

In **every** stage, every standard is described under the strand without categorizing into the topics.

**Standard:** every standard is described with **gerund form** and verb to show process and adjective to cite value and attitude such as follows.

# Sample of a Standard

- **Understanding** the situations for addition up to 10 and obtaining fluency using addition in situations
  - **Introduce** situations (together, combine, and increase) for addition and explain it with manipulative and orally to define addition for operation.
  - **Develop** fluency of addition expressions using composition of numbers for easier calculation using number sense for composition of numbers
  - **Apply** addition with fluency in their life

# Future Use and the Way Forward of the CCRLS in Mathematics

- Referenced against when reviewing and developing curricula across SEAMEO
- Curricula will be developed from the standards.
- New structures will be developed to reflect philosophies, principles and practices.
- Learning experiences will be developed from the curricula.
- Guide book or exemplars will be developed to support the use for classroom practitioner.
- Pilot development ...cont.

# Future Use and the Way Forward of the CCRLS in Science and Mathematics

- Developing SEA-BES experts who can become consultants
- Developing an assessment framework based on SEA-BES CCRLS
- Setting up a committee comprising of policy makers in the respective countries to ensure the aims and objectives of SEA-BES CCRLS are achieved.
- It is a dynamic document that can be further developed every one or two years.

# Implication

- to promote in every member country the establishment of best practices to overcome differences in curriculum;
- to produce systematic discussion process for the establishment of the regional integrated curriculum and assessment;
- to use as a platform for curriculum development and professional development for all stakeholders developing teachers imbued with ASEAN ideals in building ASEAN community;
- to serve as a platform for the Southeast Asia Primary Learning Metrics (SEA-PLM).

# Prospects of SEABES CCRLS in Mathematics

- Different views about the national curriculums
  - as a cross reference
- As a new experiment platform to draw new ideas on mathematics curriculum from member countries
- As a guide for curriculum developer – ways to write curriculum
- A guide to formulate mathematics syllabus
- Teacher educators- as reference to draft curriculum
- As reference for all educators to understand curriculum document



THANK

YOU

- For integration of ASEAN community
- assessment