Dr Wan Noor Adzmin Binti Mohd Sabri Mathematics Education Specialist













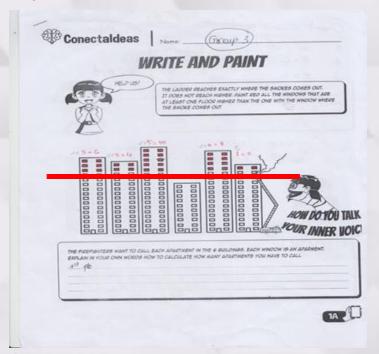


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Chapter 3

Classroom STEM Activities

Example: FIRE EMERGENCY



Task 1: A simple task on painting the window using the instruction given in the book

Task 2: Relate to the fire problems in this task.

Students are asked to think mathematically to solve the problems.

Task 3: STEM activity

Fire extinguisher – relate with the four disciplines : Science, Technology, Engineering, Mathhematics











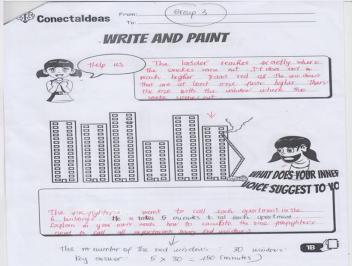
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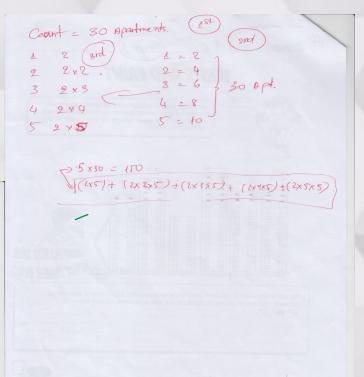
Computational Thinking skills and Mathematical Thinking

- Pattern recognition could be seen from the Task 1 and Task 2
- Algorithmn will be observed in the STEM activities

where students are asked to follow exactly the instructions

given to create fire extinguisher













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Reflections

What can students learn from these activities?

- **Contents: Numbers and Operations**
- Mathematical thinking and processes Operation,

Algorithm.

- **Inductive Reasoning**
- **Exploration and Enquiry**
- Simpler and easier
- See and think mathematically
- Pose questions and develop explanation
- Creative, innovative and harmoniously to develop citizenship

Mathematical Values, Attitudes and Habits for Human Character Mathematical Values **Mathematical Attitude** Mathematical Habits of Mind Attempting to -For living -See and think mathematically Reasonably and critically while Generality and expandability Pose questions and develop respecting and appreciating others explanations Autonomously and socially Reasonableness and harmony Generalise and extend Creatively, innovatively and Usefulness and Appreciate others' ideas and harmoniously to develop citizenship efficiency change representations for Judiciously in using various tools Simpler and easier meaningful elaborations With empowerment in predicting Beautifulness the future through lifelong learning **Mathematical Thinking and Processes** Mathematical Ways of Thinking: Mathematical Ideas of: Set. Unit. Comparison. Generalisation and Specialisation Operation, Algorithm, Extension and Integration

Fundamental Principles

Various Representations

Pattern, Recursion and

Maxima and Minima

Permanence of Form.

and Translation,

Invariant.

Ordering,

Symmetry.

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

Objectifying by representation and

Inductive, Analogical and Deductive

- Relational and functional thinking
- Thinking Forward and Backward

Abstracting, Concretising and

Contents

Key Stage 2

Reasoning

Embodiment

symbolizing

- Extension of Numbers & Operations
- Measurement & Relations
- Plane Figures & Space Figures
- Data Handling & Graphs

- Mathematical Activities:
- Problem Solving
- Exploration and Enquiry Mathematical Modeling Mathematisation and
- Programming Conjecturing, Justifying and Proving
- Conceptualisation and Proceduralisation
- Representation and Sharing

Key Stage 3

- Numbers & Algebra
- Relations & Functions
- Space & Geometry
- Statistics & Probability













