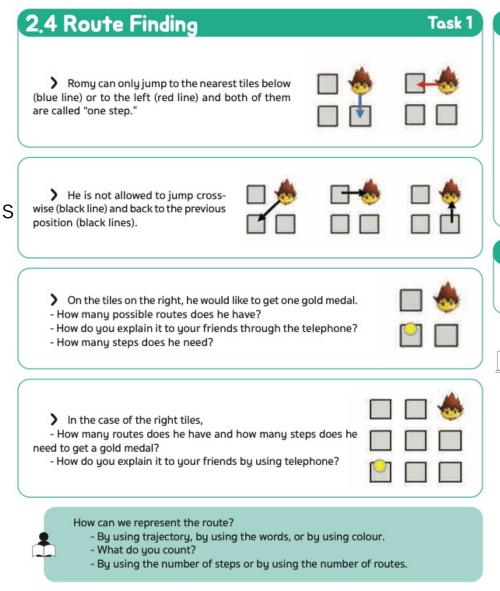
Route Finding

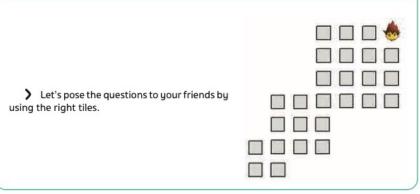
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Activity from Chapter 2, Task 2.4





Task 2

Task 3

> Let's create your own game boards by setting the rules by yourself and enjoy it

with your friends.

Let's explain the learning objective of these activities by using the following words:

- Explain the route by using the given rules through changing representations.
- Generalisation, specialisation, and inductive reasoning to find the pattern.
- Mathematisation for addition and multiplication: Finding algorism, what if and what if not for creating something new.

Route Finding

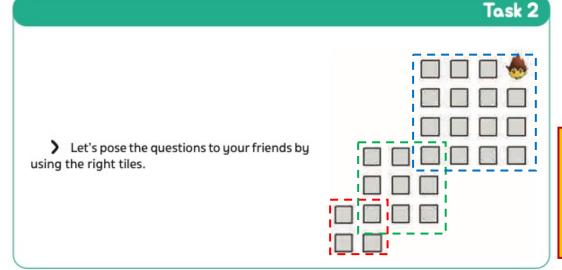
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In the case of the right tiles,
- How many routes does he have and how many steps does he need to get a gold medal?
- How do you explain it to your friends by using telephone?

Activity from Chapter 2, Task 2.4



How many steps and routes from the top-most right tile to the bottom-most-left tile?



We already know the number of steps and routes from the 2 x 2 tile and the 3 x 3. Maybe we can add them to the 4 x 4 tile.



I'm not sure. How?



Route Finding

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Activity from Chapter 2, Task 2.4

Mathematical Values, Attitudes and Habits for Human Character

Mathematical Values Seeking -

- Generality and expandability
- Reasonableness and harmony
- Usefulness and efficiency
- Simpler and easier
- Beautifulness

Mathematical Attitude Attempting to -

- See and think mathematically
- Pose questions and develop explanations
- Generalise and extend
- Appreciate others' ideas and change representations for meaningful elaborations

Mathematical Habits of Mind For living -

- Reasonably and critically while respecting and appreciating others
- Autonomously and socially
- Creatively, innovatively and harmoniously to develop citizenship
- Judiciously in using various tools
- With empowerment in predicting the future through lifelong learning

Generalizability and Expandability

Pose questions and develop explanations

Mathematical Thinking and Processes

Mathematical Ideas of:

Set, Unit, Comparison, Operation, Algorithm, Fundamental Principles, Permanence of Form, Various Representations and Translation,

Pattern, Recursion and Invariant.

Ordering,

Maxima and Minima Symmetry.

Mathematical Ways of Thinking:

- Generalisation and Specialisation
- Extension and Integration
- Inductive, Analogical and Deductive Reasoning
- Abstracting, Concretising and Embodiment
- Objectifying by representation and symbolizing
- Relational and functional thinking
- > Thinking Forward and Backward

Mathematical Activities:

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

Contents

Key Stage 1

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

Key Stage 2

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

Key Stage 3

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

Algorithm (systematic)

Pattern

Representation

Figure 1. Revised CCRLS Framework in Mathematics