Computational Thinking Concepts

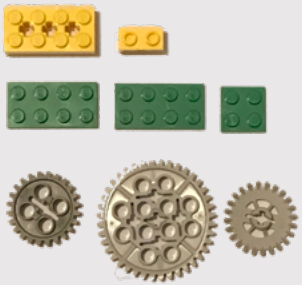
Decomposition

Managing complex tasks or situations by breaking them down into smaller, more manageable parts.

- *Encourage students to break down objects or problems into parts through a variety of tasks.*
- *Support students as they engage in the process of analysis, empowering them to approach complex tasks with clarity.*

Pattern Recognition

Identifying similarities and common aspects between things



- *Encourage students to identify and discuss patterns during tasks, ensuring students have the opportunity to create and explain their own patterns.*

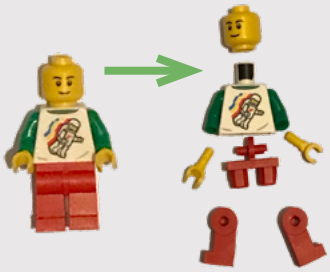
Abstraction

Reducing complexity or identifying general principles that can be applied across situations or problems.

- *Discuss with students what details are important and should be kept; what details should be omitted.*
- *Can students identify a strategy to help them across multiple problems?*

Debugging

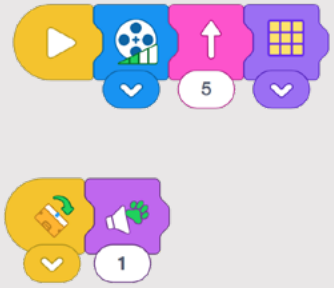
Finding and fixing errors. Sometimes it is called troubleshooting.



- *Encourage students to persevere and to "debug" when something doesn't work as expected.*
- *Support students with reasoning through a course of action for themselves.*

Algorithmic Thinking

Helps a person figure out the exact order of steps to solve a problem and then to create clear, step-by-step instructions and rules.



- *Introduce puzzles that require students to plan multiple steps ahead, like maze games where they must find the correct path.*
- *Create a dance routine by breaking down the steps, and have students follow or create their own dance algorithms.*