CoolThink@JC 賽馬會運算思維教育
Inspiring digital creativity 啟發數碼創意

A Curriculum Framework for Hong Kong Students

01 CT Concepts

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Computational Thinking Concepts: Fundamental Coding Concepts

< **Sequences / >**: identifying a series of steps for a task*

< **Events / >**: one thing causing another thing to happen*

< **Repetition / >**: running the same sequence multiple times*

< **Conditional / >**: making decisions based on conditions*

< **Parallelism / >**: making things happen at the same time*

< **Naming / >**: naming variables and functions descriptively to make them distinguishable from each other

< **Operators / >**: support for mathematical and logical expressions*

< **Data manipulation / >**: storing, retrieving and updating values*

< **Elementary data structures / >**: the basic ways data are formatted and stored

02 CT Practices

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Computational Thinking Practices: Problem-solving Skills

< **Algorithmic thinking / >**: articulating the solution to a problem in well-defined rules and steps

< **Decomposition, abstraction, generalisation / >**: exploring connections between the whole and the parts*

< **Testing and debugging / >**: making sure things work — and finding and solving problems when they arise*

< **Being incremental and iterative / >**: developing a little bit, then trying it out, then developing some more*

< **Reusing and remixing / >**: making something by building on existing projects or ideas*

03 CT Perspectives

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Computational Thinking Perspectives: Identity and Motivation

< **Personal interest in coding / >**: a desire to learn more about coding and its application

< **Willingness to engage further in coding / >**: becoming intrinsically motivated to start new coding projects

< **Positive perception of coding / >**: to see coding and its products as valuable to society

< **Confidence in coding / >**: developing the self-confidence to understand and build with code

< **Digital empowerment / >**: developing the ability to see problems in the world as solvable through code

< **Computational identity / >**: seeing oneself as being able to enhance the world through coding

* Brennan & Resnick, 2012.
This is a draft of the CoolThink@JC Curriculum Framework as of October 2016

*I*nspiring *D*igital *C*reativity

CoolThink@JC is created and funded by The Hong Kong Jockey Club Charities Trust, and co-created by The Education University of Hong Kong, Massachusetts Institute of Technology, and City University of Hong Kong. CoolThink@JC aims at inspiring students to apply digital creativity in their daily lives and preparing them to tackle future challenges in any fields. Promoting computational thinking (CT) education can move students beyond mere technology consumption and into problem-solving, creation and innovation. This 4-year initiative will train 100 teachers for the benefit of 16,500 upper primary students at 32 schools. Insights and curricular materials from this initiative will be shared openly with educators across the territory.

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