ICT Programming and Logic Essentials Lesson 2

Exploring Logic and Strategy

Level ■■□

In this activity, students will attempt to solve a problem (how to win a logic game) by planning a strategy, designing and testing hypotheses, and then reflecting on their hypotheses and strategies.

1. Spend a few minutes exploring logic games with the students. You can find a variety of logic games at http://www.superkids.com/aweb/tools/logic/ttt/ or http://www.learninggamesforkids.com/logic_games/sliding_block_puzzle.html
2. Divide the students into small groups, or have each student play one of the logic games for a designated period of time, such as 5-10 minutes.

   It is recommended that you pick three or four games and assign a different game to each group so the students do not all have the same game.
3. Have the students record their moves and ideas about strategy. For example, "When I did (X), (Y) happened," or "If I do (X), then (Y) may happen and then I can (Z)."
4. When time expires, have the students create a hypothesis about how to win the game.
5. Allow the students to resume play and then try out their hypothesis a number of times. If it fails, the students should record what happened and why, and then make the necessary adjustments to develop a new hypothesis.
6. If time allows, have students switch games and attempt to use each other's hypotheses to win the game.
7. The students should record their feedback and strategy ideas.
8. Engage students in a discussion about what they learned about logical thinking, problem solving, and algorithms.

Answer: *Students had to evaluate the problem and explore solutions; create a plan or hypothesis (i.e., an algorithm) to solve the problem; evaluate or test the hypothesis; revise and repeat.*

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ICT Programming and Logic Essentials Lesson 3

Lesson 3 Quiz

Circle the correct response for each question.

1. Which programming structure continues to repeat actions while a condition remains true?
   a. Loop
   b. Sequence
   c. Selection
   d. Object

2. Which programming structure performs a set of instructions in the order they appear?
   a. Loop
   b. Sequence
   c. Selection
   d. Object

3. When a computer carries out a program's instructions, it is called _____ the program.
   a. executing
   b. declaring
   c. evaluating
   d. iterating

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