

COMPUTATIONAL THINKING AND ALGORITHMS

PART 1: COMPUTATIONAL THINKING

Choose two statements which are TRUE about computational thinking.

- Computational thinking is for people who work in science
- To use computational thinking means that I know how to think like a computer.
- To use computational thinking means only that I can make a computer program.
- To use computational thinking in practice, I need a computer.
- Computational thinking is basically solving different problems.
- To use computational thinking I must understand how a computer works.
- With computational thinking we look for answers to the questions: WHAT, HOW and WHY.

Match the steps of computational thinking with their descriptions.

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| _____ | ☛ breaking the main problem into many easier problems |
| _____ | ☛ looking for similarities between our problem and a similar problem for which we already know the solution |
| _____ | ☛ finding important parts and ignoring unnecessary parts |
| _____ | ☛ developing an algorithm |
| _____ | ☛ checking our algorithm if it is correct and if it can be improved |

❖ *evaluation* ❖ *decomposition* ❖ *finding patterns* ❖ *abstraction* ❖ *algorithmic thinking* ❖

PART 2: ALGORITHM

Algorithm is an instruction with which we solve a _____. Usually it is written as a list of _____, which lead to solving of this _____. How detailed the steps are depends on who is going to follow the algorithm: a person or a computer.

Find two more examples of algorithms for a task that we can learn in real life:

- tying shoelaces

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When we talk about an algorithm for a computer, we are talking about a _____.

A computer reads the steps from _____ to _____. Sometimes a computer can _____ them many times over. Sometimes it doesn't follow them if the right _____ isn't met.

We can present an algorithm graphically with a _____.

(picture below)

