# **Algorithms Comprehension Check**

For questions 1-5, match each vocabulary term to the correct definition:

|  |  |
| --- | --- |
| 1. Code | a. a description of a computer program written in human language |
| 2. Programming Language | b. instructions written in a programming language |
| 3. Pseudocode | c. used to find specific information in a list of data |
| 4. Search Algorithm | d. a set of symbols and rules that programmers use to write computer programs |
| 5. Sorting Algorithm | e. used to put a list of data in a particular order |

1. Code – b
2. Programming Language – d
3. Pseudocode – a
4. Search Algorithm – c
5. Sorting Algorithm – e
6. What is an algorithm and how is it used in the world of computers?
7. What does “efficient” mean and why is it important for algorithms to be efficient?
8. Compare bubble sort algorithms to insertion-sort algorithms.
9. Who was Ada Lovelace and what was her claim to fame?
10. How are the algorithms discussed in this book related to algorithms you use to do math, like addition, subtraction, multiplication, or division?

# **Algorithms Comprehension Check Answer Key**

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1. Code – b
2. Programming Language – d
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6. What is an algorithm and how is it used in the world of computers?
   1. An algorithm is a set of step-by-step instructions. Algorithms are used a lot in math but are also used to tell computers what to do. Algorithms must be clear and easy enough for a computer to understand so it can follow the instructions.
7. What does “efficient” mean and why is it important for algorithms to be efficient?
   1. An efficient algorithm is one in which the steps allow the program to complete its task in a way that is quick, but also takes up the least amount of the computer’s power. It is important for algorithms to be efficient because this allows programs to run with fewer errors and allows a device to run multiple programs without running out of power.
8. Compare bubble sort algorithms to insertion-sort algorithms.
   1. Sorting algorithms are used to organize data in a particular set of information. Sorting algorithms make it easier for us to make sense of the data we have. Different sorting algorithms are beneficial in different situations. For example, a bubble sort algorithm sorts data by comparing pairs and organizing them appropriately. An insertion-sort algorithm is often seen as more efficient than a bubble sort algorithm. In an insertion sort, each item is checked one by one and placed back into the correct position.
9. Who was Ada Lovelace and what was her claim to fame?
   1. Ada Lovelace was an English noblewoman who, in the 1800’s, wrote an algorithm for programming a computing machine. She is known for writing one of the very first computer programs every written!
10. How are the algorithms discussed in this book related to algorithms you use to do math, like addition, subtraction, multiplication, or division?
    1. Even though this text is all about computers and programming code, the algorithms described here are not all that different from those we use in math class. Algorithms are just a set of steps to follow in order to get a desired outcome. In math, we use algorithms to make sure we add, subtract, multiply, divide, and more correctly.