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| **Achievement** | **Achievement with Merit** | **Achievement with Excellence** |
| *Demonstrate understanding of basic concepts from computer science.* | *Demonstrate in-depth understanding of basic concepts from computer science.* | *Demonstrate comprehensive understanding of basic concepts from computer science.* |
| **the concept of an algorithm;**  **describing** the key characteristics and roles of algorithms, *own words about a precise unambiguous specification of how to accomplish some computational task in a finite number of well-defined steps*.  describing the key characteristics and roles of programs *used for computers.. an algorithm is distinct from a computer program*  describing the key characteristics and roles of informal instructions *used for humans and can be ambiguous and not precise*  **describing** *in own words* an algorithm for a task, showing understanding of the kinds of steps that can be in an algorithm,  and determining the cost of an algorithm for a problem of a particular size *An algorithm has a cost (the number of steps it will perform) for a task* | **explaining** how algorithms are distinct from related concepts such as programs and informal instructions  **showing understanding** of the way steps in an algorithm for a task can be combined in sequential, conditional, and iterative structures  and determining the cost of an iterative algorithm for a problem of size n *one task.. with more than one input to determine cost* | **comparing and contrasting** the concepts of algorithms, programs, and informal instructions  **determining and comparing** the costs of two different iterative algorithms for the same problem of size *n* *Different algorithms for the same task may have different costs* |
| **the concept of a programming language;**  **describing** the role and characteristics of programming languages, *in own words…. A programming language is a precise, formal language for writing programs that can be run on a computer; it is distinct from pseudocode and natural language.*  including the different roles and characteristics of high level languages and low level (or machine) languages, *in own words… There are different levels of programming languages;*  and the function of a compiler *in own words …programs can be translated from high level to low level (or machine) languages* | **explaining** how the characteristics of programming languages, including the different characteristics of high level and low level (or machine) languages, are important for their roles  **explaining the need** for programs to translate between high and low level languages | **comparing and contrasting** high level and low level (or machine) languages,  and explaining different ways in which programs in a high level programming language are translated into a machine language *in own words about compiler and interpreter/translator* |
| **The concept of a user interface and its usability**.  **describing** the role of a user interface *in own words.. A user interface is the part of a computer or electronic system that a human user interacts with to control the system*  and factors that contribute to its usability. | **explaining** how different factors of a user interface contribute to its usability *in own words.. The usability of an interface is the key characteristic for evaluating an interface* | **discussing** how different factors of a user interface contribute to its usability by **comparing and contrasting** related interfaces. |

Achieved 🡪 identify… describe

Merit 🡪 explain

Excellence 🡪 compare and contrast

**Concept of algorithm**

Description in own words of an algorithm, implies knowledge of algorithm

Cost is number of steps or comparisons (or time) - not looking at efficiency of system

Search - comparisons: Sort - comparisons and swaps

**Programming languages**

Roles - for human, for machine

Characteristics of syntax, specific grammar and layout - an example is good

Common features of input and output; calculations; instructions for transfer of control; assignment/storage/variables; comments

For A need to identify function of compiler, for M need to explain the need for compiler, for E need to have compiler and interpreter

**Human Interface**

A 🡪 identify an interface and some factors of usability

M 🡪 explain how factors contribute to its usability

E 🡪 compare and contrast two related interfaces