COMPUTATIONAL THINKING

Answer the following

1. What is Computational thinking? Where is it used?

Computational Thinking is a problem-solving thought process, which includes logical reasoning, devising step-by-step solutions, and designing systems.

Using Computational Thinking for Programming

When you are developing an I.T. application, **Computational thinking enables you to work out exactly what to tell the computer to do** and then convert the solution into a programming language.

2. What is the first element of computational thinking? What does it define?

Analysis: Analysis is the process of understanding the problem and conditions, and defining the goals.

3. What is abstraction in context of computational thinking? How is it used in solving problems?

Abstraction: Abstraction is the process of filtering out details or components of the problem to focus on the relevant ones.

Abstraction focuses on essential features and avoids unnecessary complexity. As in the ▬▬ example, While searching on the Internet and talking to experts, Aaryan gets various inputs, and then finds the solution that seedlings can be planted at home at a lesser cost.

4. How does computational thinking help to develop the key skill of debugging in children?

DEBUGGING: In the process of trying various possible solutions and finding the most appropriate one, children learn to find and fix errors. In the given example, Aaryan broke down the project in to smaller tasks and assigned the duties to the volunteers. This way if there is an error in the procedure, it will be easy to identify where the error has occurred and rectify it.

5. What are patterns? Why is it important to observe patterns?

Pattern Recognition: Observing patterns, trends, and similarities in the data is known as pattern recognition. When you discover patterns, it becomes easier to make predictions and create rules to solve other problems.

Pattern Recognition means observing patterns, trends, and similarities in data. Recognising patterns help us make predictions and use the techniques that have been proven to solve similar problems in the past.