Defining a code
Lesson Plan: Class 02 / PS / 17

CS pathshala
Bringing computational thinking to schools

Overall goal of the lesson	Children will learn about how symbols can be used to represent information. That when a code is defined and is known to the user, information represented using symbols can be understood by user – sometimes better and faster than the information presented in the long form or full form.
Prior knowledge required	Information of the traffic lights (red, yellow, green) and basic mathematical signs of "+", "-", "<" and ">"

MODULE 1:   **Module time:** 35 minutes

Goal:	To give a brief introduction about using symbols to represent information; to defining a code.
Description:	Children will learn about defining a code and using symbols to represent information.
Material required:	**Physical:** 1. One copy of the worksheet (Representing information using symbols – defining a code) per child. 2. Writing material to solve the worksheet: pencil and eraser. **Electronic:** PPT Presentation for Representing information using symbols – defining a code
Procedure Summary:	1. Go through the presentation and then distribute the worksheets (Representing information using symbols – defining a code) to the children. 2. Read through the worksheet and discuss with the class the importance of symbols and code.
Procedure Details:	1. Start the class with the ppt. Get them in the mood to play a simple game. 2. From slide 3 to 6, define the actions for each of the symbol on the slide. 3. Slide 7 is the summary of the rules defined on the 4 earlier slides. Get them to repeat the rules once. 4. Slide 8 is to get them ready to start playing the game. 5. Slide 9 to 23 (total of 15 slides) shows one symbol per slide. Run the first 6-7 slides of these 15 very slowly. Then increase the speed so that it will be more fun for the children. 6. On slide 24, showing one symbol at a time, get them to tell you what they were supposed to do on seeing that symbol. 7. Slide 25 – ask them if they want to play the game once more! 8. Run through slides 26 to 30. On seeing diamond on slide 30 they will be confused. 9. Discuss what happened this time around on slide 31. 10. Ask them if they knew what to do on the Diamond. 11. Get them to talk about how they knew what to do on the other shapes. That a rule was defined for the previous four shapes. No rule was defined for the diamond. 12. On slide 32, reiterate the point – again list the shapes and the actions defined for each shape. 13. On slide 33, explain how, because we had defined what is to be done on each shape, we didn't need to call out the action for them to do it. That only the shape could be shown and they knew what to do. 14. Explain that what we had defined was a code! 15. Slide 34 – explain what it means to define a code. Also explain how a different code or many different codes can be defined for the same thing. 16. Slide 35 – this is another possible code. Get them to talk about more codes they can define.

	17. Slide 36 – ask them if they can think of examples of code. Discuss this. Then explain how (1)'+', (2)'-', (3)'<' and (4)'>' are really codes for (1)add the number on left and right of the symbol, (2)subtract the number on the right from the number on the left of the symbol, (3)number on left of the symbol is less than number on the right of the symbol and (4) number on left of the symbol is greater than the number on the right of the symbol respectively.
	18. Slide 37, 38 and 39 – talk about traffic lights – another example of using symbols. On slide 37, first ask them what it looks like. Then explain what it means. On slide 38, explain how it does not matter if the lights are horizontal or vertical but the colors matter.
	19. Now move onto the activity sheet.
Assessment :	Answer questions on the activity sheet
Information Broadcast:	In Computer Science, the children learnt about representing information using symbols – defining a code.