**Learning Scale in a Map**
**Lesson Plan:  Class 03 / DM / 01**

CS pathshala
**Bringing computational thinking to schools**

| Overall goal of the lesson | **To understand the concept of "Scale" on a Map.** |
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| **Prior knowledge required** | Concept of a "Map". |

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

| Goal: | |
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| **Description:** | |
| **Material required:** | **Physical:**<br>Each child should have a ruler and pencil, and their notebooks. Also, would be good to have a long string for measuring objects in the classroom (for the Teacher).<br><br>**Electronic:**<br>None. |
| **Procedure Details:** | 1. Explain how to draw a 4x4 grid as shown in the ppt, using the Blackboard.<br>2. Explain that the 4x4 grid is meant to represent the classroom – ie. as a **Map** of the classroom. **NOTE:** Instead, you could also use the floor tiles or number of steps measured by your footsteps, to mark out this grid. You could have, for example, one tile on the floor shown by one square in the grid.<br>3. On your 4x4 grid, show the Blackboard and Main Door. Let students also copy this out on their Map.<br>4. Now, ask each student to show his/her own Desk on their Map. **NOTE to the Teacher :** the grid shows an example location of "Your desk" (on Pg 8) – which is each student's desk. This will be different for each child. Please explain this to the children.<br>5. Explain that the distance shown between Blackboard and Main Door is a "scaled" version of the actual distance.<br>6. To explain the concept of scale, we **_change_** the grid size to show that the distance shown **_changes_**. So, if a 4x4 grid is changed to 8x8, the scale changes by a factor of 2. This means, the distance (measured in number of squares) between the Blackboard and Main door will be multiplied by 2 – so, 2 squares on 4x4 grid becomes 2x2=4 squares on 8x8 grid.<br>7. At this point, please point out to them that the distance between other objects, say Desk & Door or Desk & Blackboard have also got scaled by the same amount.<br>8. You could ask the children to map out other objects in the classroom around them.<br>9. Make sure they understand the concept by changing the grid to say 12x12 and repeat the exercise.<br>10. You could also measure the distance between the Blackboard and Main Door using a string. You could also use the floor tiles or number of steps measured by your footsteps, to measure distance. Now show them how the actual distance has been mapped to the Map using a scaled Map. |

| | 11. Instead of a string, you can ask the students to measure the distance between Blackboard and Door using their feet. They can measure the distance in "number of footsteps". |
| | 12. **<u>*NOTE*:</u>** to keep it simple, the Door has been shown to the right of the Blackboard (as seen by the student), and only the distance along one axis of the classroom has been shown. You can change this depending on actual classroom layout. |