



# Learning Scale in a Map

## Lesson Plan: Class 04 / DM / 01



<b>Overall goal of the lesson</b>	To understand the concept of “pairwise relations” and how to represent them in terms of graphs.
<b>Prior knowledge required</b>	

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

<b>Goal:</b>	To understand how to represent pairwise relations in terms of Graphs.
<b>Description:</b>	Children will learn how to represent pairwise relations in terms of graphs – where related objects form nodes, and the relation is represented as an edge connecting the nodes.
<b>Material required:</b>	<p><b>Physical:</b> Notebooks, pen &amp; paper exercises.</p> <p><b>Electronic:</b> None.</p>
<b>Procedure Details:</b>	<ol style="list-style-type: none"> <li>1. Explain what “relation” means, by examples. Ask children to make a note of relations in their lives – like parent, friends, brother-sister.</li> <li>2. Explain that “relation” can also be between living/non-living things like : school bag – and notebooks it carries; or water bottle – and water it carries; or student – and her desk; table-and chain;</li> <li>3. Explain what “pair” means – a set of 2 things.</li> <li>4. Then bring in the concept of “pairwise” relation. This means relation between 2 things or people.</li> <li>5. Ask the kids to make a list of pairwise relations they can think of. Allow them talk about their lists.</li> <li>6. Introduce the concept of representing pairwise relations by diagrams or figures or what are called “graphs”. Take one simple example to do this – as shown in the ppt.</li> <li>7. One example shown in the Food chain, where there are pairs of “producer” and “consumer” relationship shown: e.g. Sunlight help Plants produce food; Or Soil helps plants produce food; Plants are eaten by Animals; etc..</li> <li>8. The next example shows pairwise relations of things around the classroom. Encourage the children to think of more such examples around them.</li> <li>9. Next example shows their classmates – each student is shown as a “NODE” or a “dot”. And each student is connected to his/her friend by a “line” or “edge”.</li> <li>10. Let them think about the questions posed on Pg 15 (in <b>RED</b>) for sometime. They should be able to list all the pairs of nodes which are connected by lines/edges, as Friends. And the ones which are not connected, as “not friends”.</li> <li>11. The graph on Pg 15 shows all “friend relations” in the class, while the graph on Pg 13 shows friends of only 1 particular student in the class. So each student’s graph which shows only his own friends, will look different. But if all these graphs are combined into 1 graph, to show all the friend relations in the entire class, then we will get something like Pg 15. This needs some explanation via simple examples.</li> </ol>