**Lecture guide: Science Introduction Workshop 1 Geometry** Werner Nater

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| Day/Lesson | Topic of Lesson | Room/Duration |
| **Date:** | **Geometry: Symmetry - mirroring** | **2 x 60 minutes** |
| Goals for Students | | Teachers Focus |
| .Get a first contact to geometric drawing and construction  Learn to handle ruler, protractor and learn to measure Get an understanding of axial symmetry | | Go slowly and careful drawings an board or with visualizer |
| Remarks | |
| Student should bring rulers | |

| Phase/Goals, Content | | Activity Teacher | | Activity Students | Media |
| --- | --- | --- | --- | --- | --- |
| Time | Sub-steps (Keywords) | Organizing, Informing, Activating | Accompany Learning process | Class, Group, Person: Activity/Social Form | Resources etc. |
| 5 | What is geometry (Plain, space) | Teacher-Student discussion |  | Teacher focused, Follow the drawings and discussions | Whiteboard or Visualizer |
| 15 | Elements: Dot, straight line, distance, ray, parallel line, (curved line) area | Draw different lines, and areas and name them |  | ditto | Large scale + protractor |
| 5 | One Point: How many lines through one point? | Ask, Construction |  | ditto | ditto |
| 5 | Straight line between 2 dots (Distance) | Construction, name it |  | ditto | ditto |
| 30 | Introduce scale, measure distances, |  | Use of scale |  | ditto |
| 15 | Parallel lines | Construction | Show in room |  | ditto |
| 15 | Normal lines | Construction | Show in room |  | ditto |
| 15 | Mirroring one point on straight line Drawing a normal Using the right angel (rectangular) Measure same distances Axial symmetry | Construction |  | ditto | ditto |
| 15 | Mirroring triangle on straight line 1. Hypotenuse parallel to axis  use mirror to prove 2. Hypotenuse not parallel to axis | Construction  Transfer the triangle from board on a sheet of paper and compare the picture on the board with object | Change of direction ABC to CBA | ditto | ditto |
| If time | Identify symmetric figures | Give different figures and find symmetry axis |  | ditto | ditto |
| If time | Rotation symmetry |  |  | ditto | ditto |