



SNS COLLEGE OF TECHNOLOGY

**An Autonomous Institution
Coimbatore - 35**

Accredited by NBA – AICTE and Accredited by NACC – UGC with 'A+ Grade
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DEPARTMENT OF AGRICULTURE ENGINEERING

19AGT201 – SURVEYING AND LEVELING

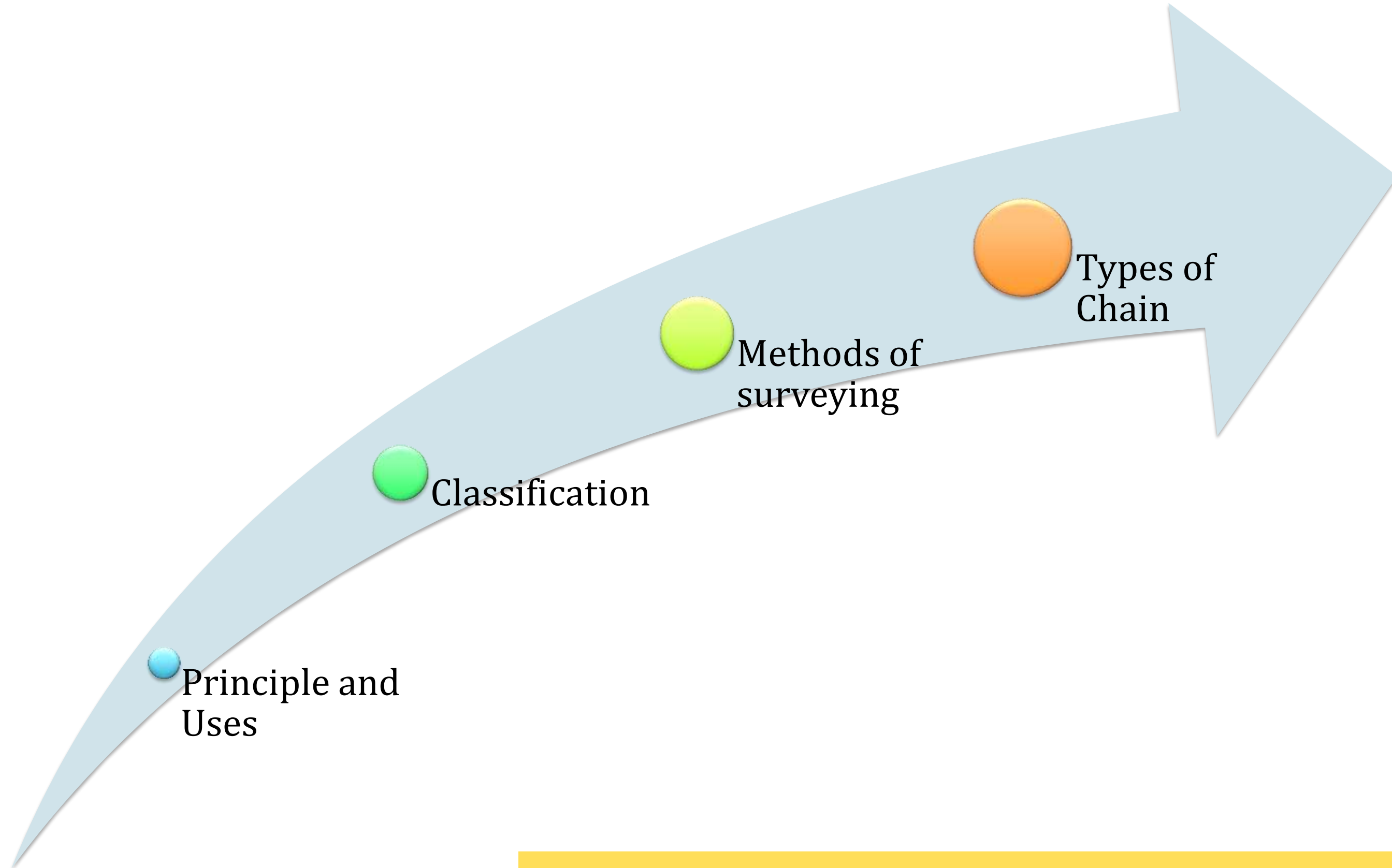
II – YEAR III SEMESTER

UNIT 1 – PRINCIPLES OF SURVEYING

TOPIC 5 – RANGING



Last Class Review





Types of Tapes



Cloth Tape or Linen Tape:

- They are woven linen and varnished to resist moisture.
- They are generally 10m, 20m, 30m long and 12 to 15 mm wide.

Fibre tape :

- These tapes are similar to linen and plastic coated tapes but these are made of Glass Fibre.
- These tapes are don't stretch and shrink due to temperature.
- It is available in 20m, 30m and 50 m length.





Types of Tape



Metallic Tape :

- A linen tape reinforced with brass or copper wires to prevent the stretching or twisting of fibres is called a metallic tape.
- It is commonly used for taking offsets in chain surveying.

Steel tape :

- It is made up with steel material and commonly available in 20 m, 30m or 50m length.
- It is graduated in mt and cm.

Invar Tape :

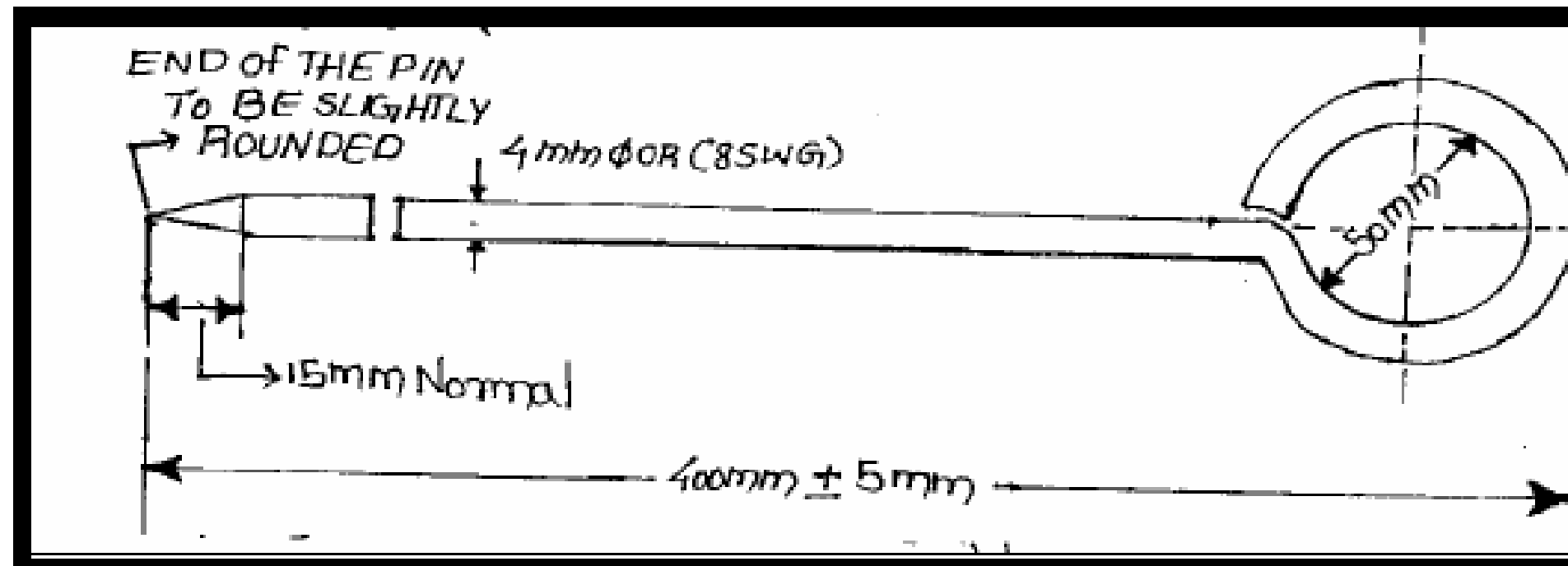
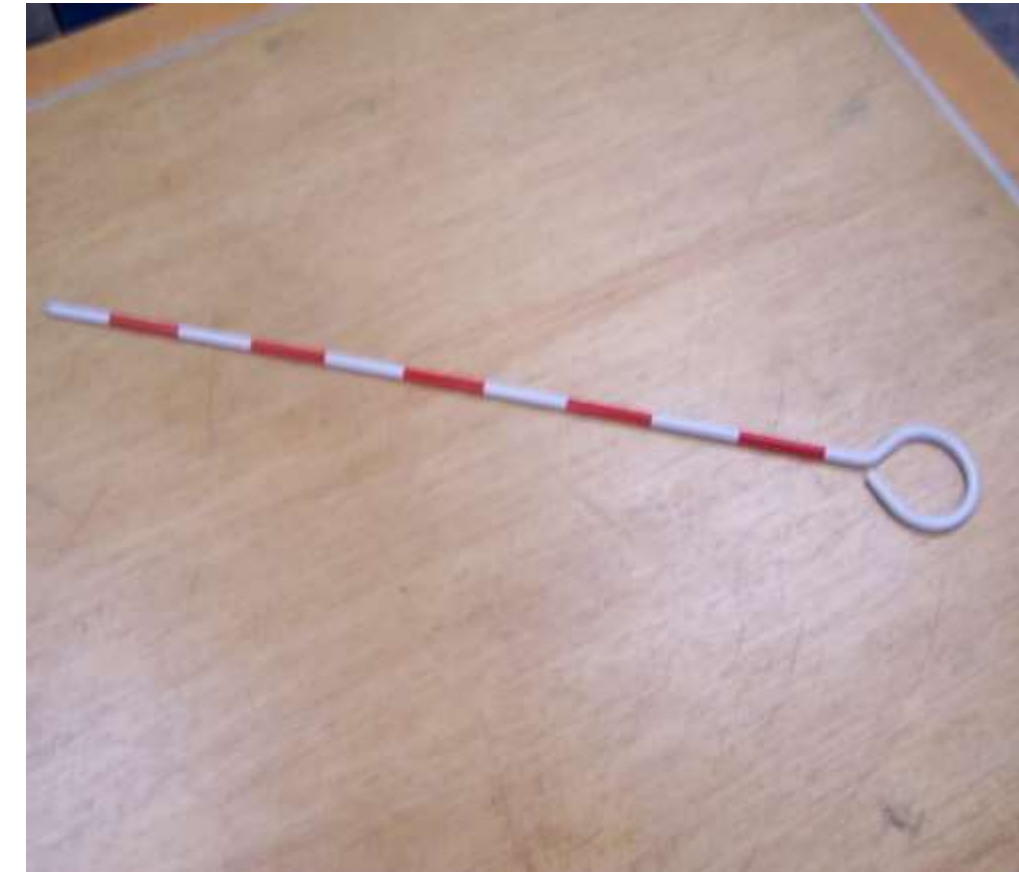
- It is made of an alloy of nickel 36 % and steel 64 % having very low thermal expansion.
- These are 6mm wide and generally available in 30m, 50m and 100m.





Arrows

- Arrows are made of tempered steel wire of dia 4mm. One end of the arrow is bent into ring of diameter 50mm and other end is pointed.
- Its overall length is 400mm. Arrows are used for counting the number of chains while measuring chain line. And it is also used to established a intermediate station.





Ranging Rods or Offset rods

- Ranging rods are used for ranging some intermediate points on the survey line.
- It is generally 2 to 3 m in length and are painted with alternate bands of black and white or red colors with length of each equalizing 20 cm.
- The offset rod is similar to the ranging rod with the expectation that instead of the hook, a flag is provided at the top.





Assessment



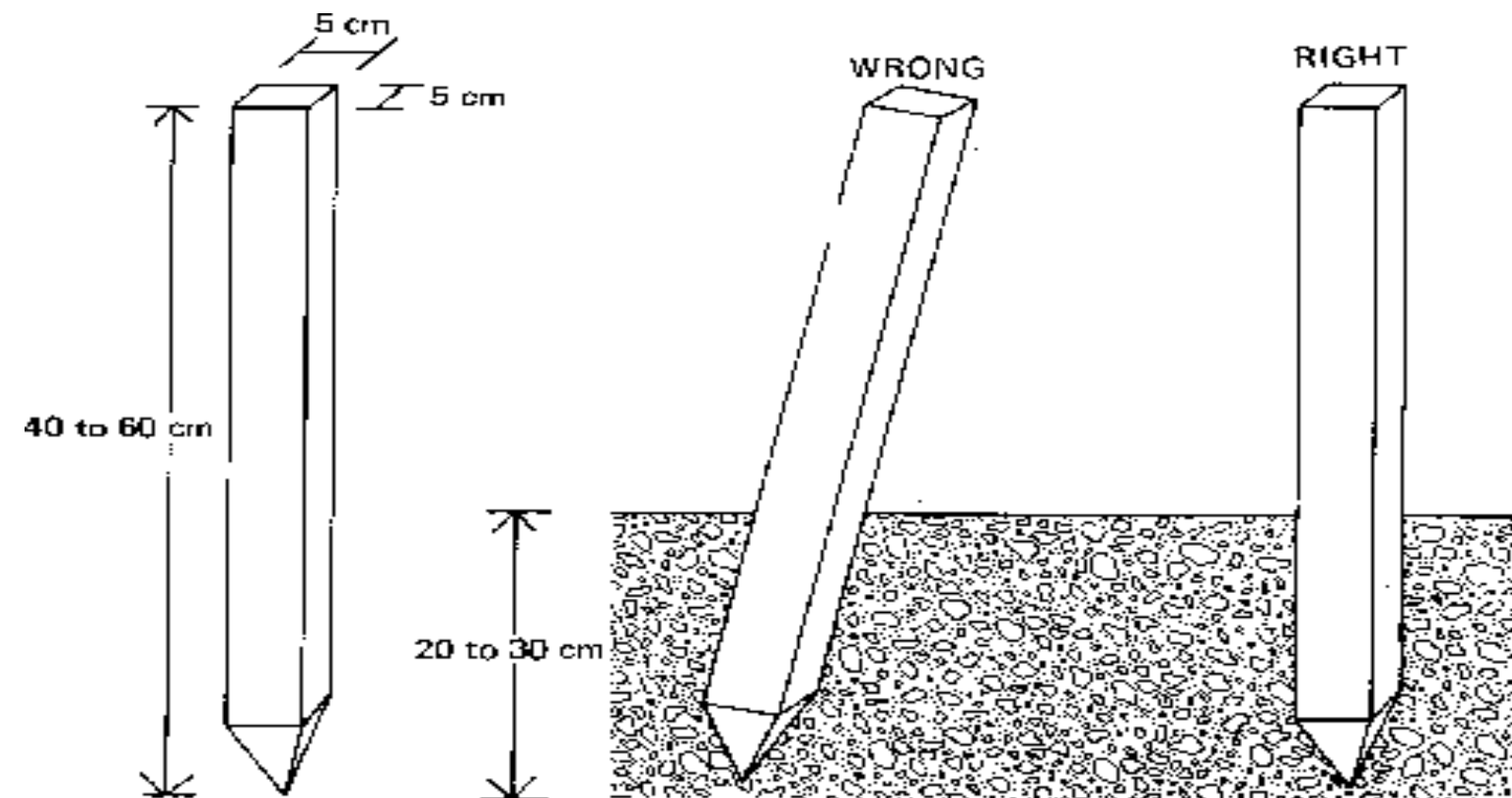
- Whether tape used or chain used for surveying





Pegs

- Pegs are made of timber or steel and they are used to mark the position of the stations or terminal points of survey line.
- Wooden pegs are 15cm long and driven in to the ground with the help of hammer.





Plumb-Bob

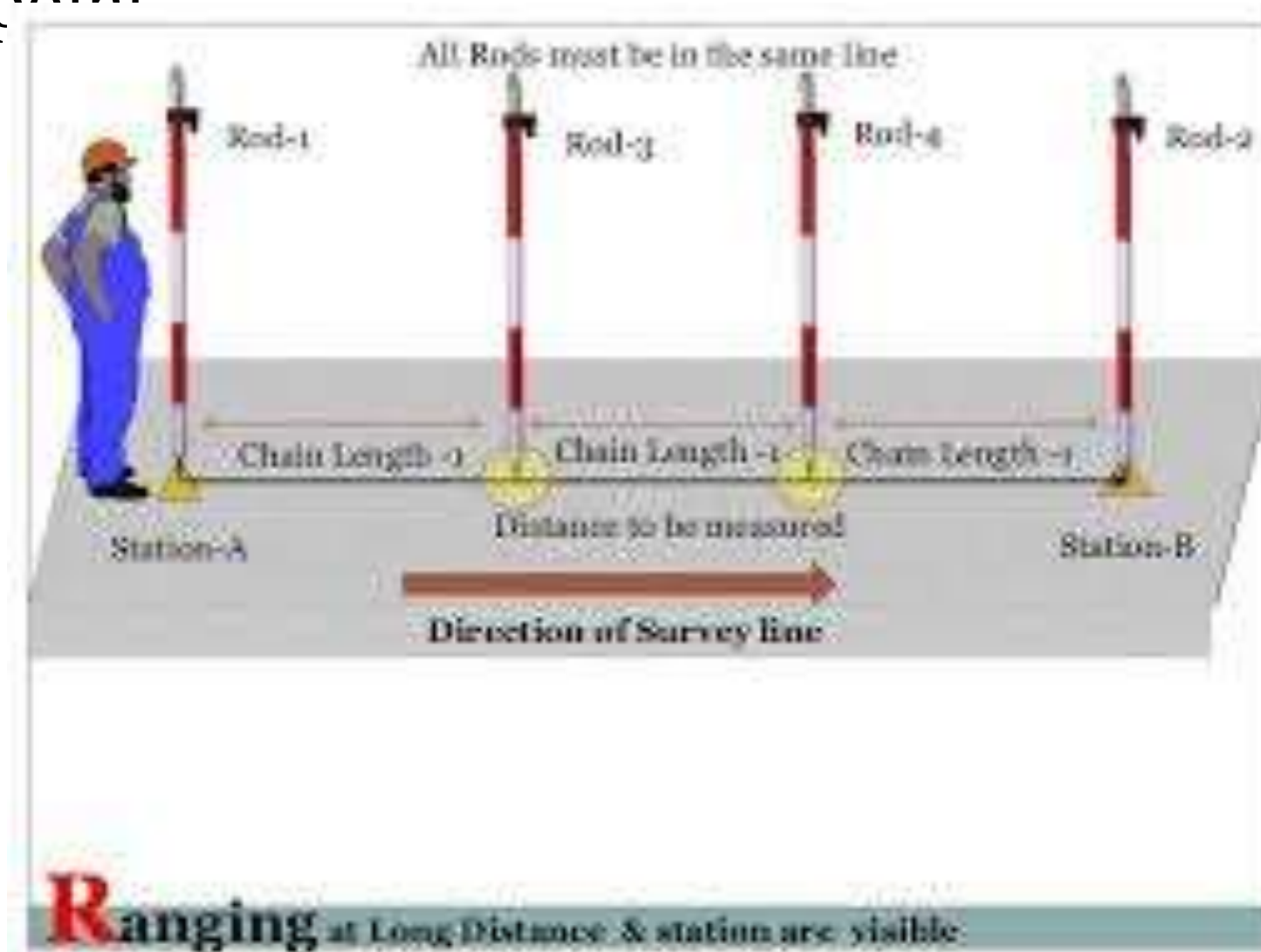
It is used to transfer points on the ground. It is also used for fixing the instruments exactly over the station point marked on the ground by checking the centre of the instrument whether coincides with the centre of the peg.





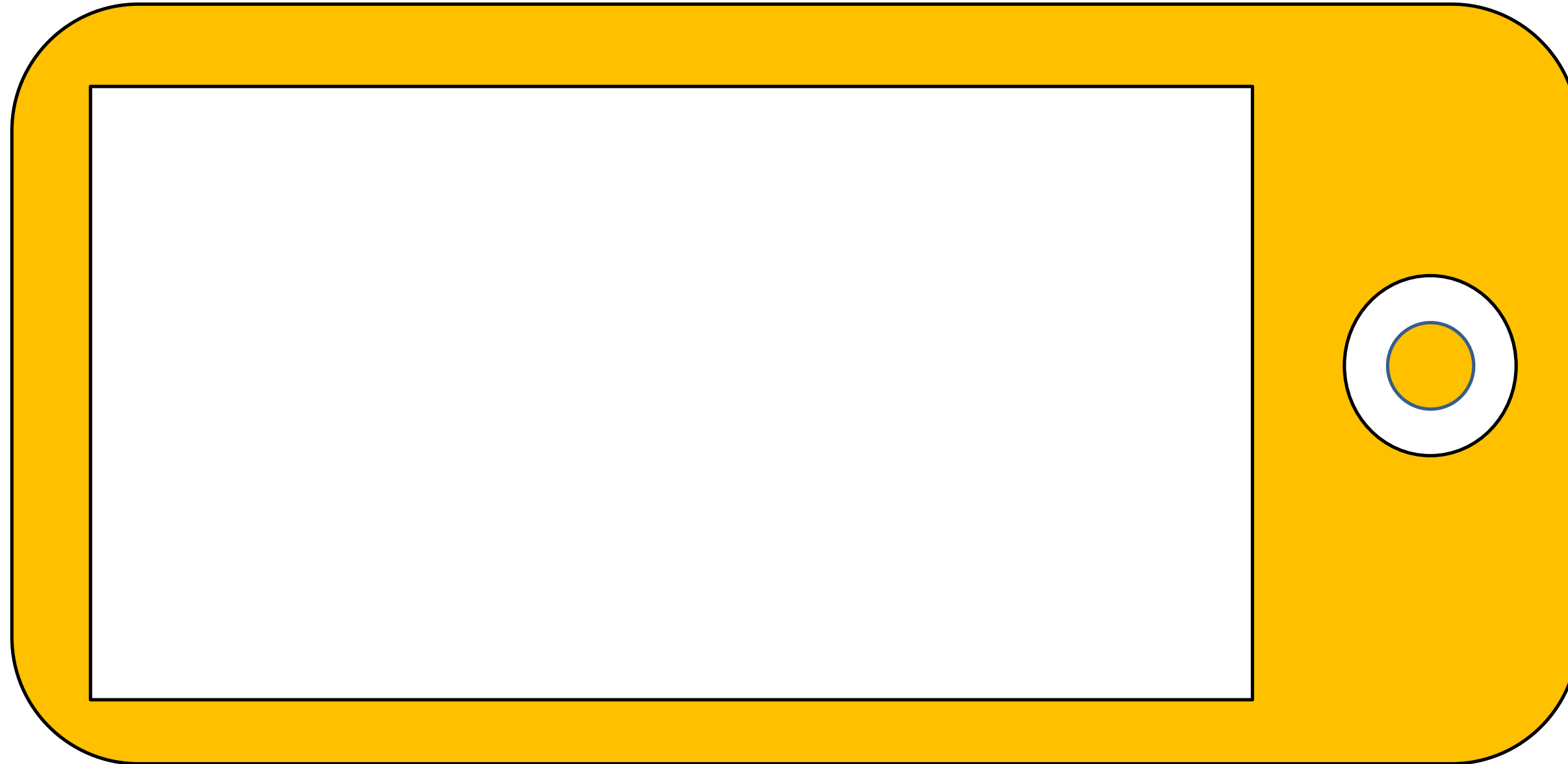
Ranging

- Ranging-the process of establishing intermediate point on a straight line between two end point





Reference Videos





See You at Next Class!!!!