

## PLAN

STEPS	TASK/ACTIVITY	INTERACTION	TIME	Graphic/Resources	FEEDBACK
1	Pre-task – Introduction to trig points and task	<b>T - S</b>	5 min	Advance organiser	
2	Choosing points on the contour-line map	<b>S - S</b>	5 min	Contour-line map	
3	Preliminary drawing	<b>S - S</b>	10 min	Use of ruler and triangles	Teacher is looking at the students
4	Survey with a theodolite	<b>T - S</b>	35 min	Instruments	Teacher is checking operations
5	Writing down formulæ	<b>S - S</b>	5 min		
6	Calculating sides of triangles and coordinates	<b>S - S</b>	15 min	Use of scientific calculator	Teacher is looking at the students
7	Describing a Transverse Mercator map	<b>T - S</b>	5 min		
8	Describing prospective transformation of coordinates	<b>T - S</b>	10 min		
9	Drawing and reporting about how to recognise trig points	<b>S - S</b>	15 min		Teacher is listening to the students
10	Review and repeat	<b>T - S</b>	15 min		Teacher is listening to the students

Follow-up: keeping in touch with the land office to find out more trig points in the area.

## Learning outcomes

Students KNOW the use of trig points, ARE ABLE TO draw a survey planning layout on a contour-line map, measure angles and distances and write them down in a field-note form, make calculations, ARE AWARE that no new building can be made without being related to trig points and they have to cooperate in a group.

## Assessment

Can the learners identify trig points, recognise elevations and slopes in a map, tell how a survey must be carried out, use pocket calculators and computers to the planned purpose, cooperate in a group?

## Communication

Students know the names of classroom objects – paper, ruler, pencil, eraser – and learn new words – protractor, peg, target, prism –. They can use structures – set up, turn, look at, axis of collimation, unloading of data – and functions – describing accuracy of measurements –.

They learn to label parts of the instruments they use, to describe the necessary steps in a survey and in calculations, to state how to make calculations and how to verify and approximate unknowns' values.

## Cognition

Learners identify outstanding points on the ground and reason about ways of choosing visual connections between them. They can classify trig points by their correspondent range of accuracy.

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