



THEME		ENGINEERING GRAPHICS AND DESIGN			
SCHOOL:		DATE	Day	Month	Year

CYCLE / WEEK	1	2	3	4	5	6	7	8	9	10	TERM	1	2	3	4
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THEME	LOCI
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INTEGRATION WITH OTHER SUBJECTS

Business Studies	Manufacturing	✓	Human Science	Mathematics
Commerce Studies	Engineering	✓	Social Science	Computers
Management Studies	Technology	✓	Arts and Culture	Physical Sciences
Service Studies	Languages		Agricultural Sciences	Life Sciences

CONTEXT	CRITICAL OUTCOMES (CO's)	DEVELOPMENTAL OUTCOMES (DO's)
Civil	✓ 1. Problem solving 2. Teamwork	1. Learn more effectively 2. Responsible citizens
Mechanical	✓ 3. Self-management 4. Research and critical analysis	3. Culturally & aesthetically sensitive 4. Explore education & career opportunities
Electrical	5. Effective communication 6. Science and technology	5. Entrepreneurship
	7. The world as a set of related systems	
	Skills	Knowledge
		Values including Attitudes

NCS PRINCIPLES	ASSESSMENT		
	LTSM (resources used in teaching & learning)	TEACHING & LEARNING STRATEGIES (Learning Activities)	ASSESSMENT ACTIVITIES (Assessment Activities / Tasks) TOOLS METHODS
Social Transformation	Observation ✓	Show & Demonstrate ✓	Rating Scales ✓ Self Assessment
Outcomes-based Education	Environment	Explain the Technology	✓ Observation Sheets Peer Assessment
Higher knowledge & Skill	Models ✓	Explain the Terminology	✓ Checklists Group Assessment
Integration & Applied competence	CAD – Software ✓	Producing free hand drawings	Task Lists ✓ Teacher Assessm. ✓
Progression	Audio Visual ✓	Self made Models	✓ Memo/Mask ✓ External Assessm.
Articulation & Portability	Worksheets ✓	Design	Rubrics / Grids ✓
Human rights, Inclusivity, Environmental & Social justice	Drawing Instruments ✓	Class discussion	EVIDENCE COLLECTION
Valuing Indigenous Knowledge Systems	Transparencies / OHP ✓	Group discussion	Observation
	Chalkboard / Posters ✓	Group work	Test - based
Credibility, Quality & Efficiency	Other (specify)	Individual work	✓ Task based

CONTENT: LEARNING OUTCOMES(LO's) AND ASSESSMENT STANDARDS(AS's)

LO1	LO2	LO3	LO4
11.1.1 Relationship environment	11.2.1 Identify Problems	11.3.1 Code of Practice	11.4.1 Interpretation Drawing
11.1.2 Human Right Issues	11.2.1 Research	11.3.2 Projects multi/pict.	11.4.2 Drawing Principles
11.1.3 HIV/AIDS	11.2.3 Final Solution	11.3.3 CAD Drawings	11.4.3 Multi & single view
11.1.4 Communication	11.2.4 Present solution	11.3.4 Basic design	11.4.4 Pictorial Drawings
11.1.5 Entrepreneurship	11.2.5 Evaluation	11.3.5 Drawing Techniques	11.4.5 Sectioning multiview
11.1.6 Electronic impact on Comm.		11.3.6 Sectional Views	11.4.6 Design Process
		11.3.7 Graphic Comm.	11.4.7 CAD
		11.3.8 Loci	11.4.8 Loci

Lesson / Period Breakdown per Topic

Prior Knowledge:

Teacher Activities	Learner Activities	Evidence	Time	Date Comp.
Topic: Helix	Apply the principals of the HELIX in civil and mechanical context in advanced applications such as spiral chutes, coil springs and square thread. Emphasise the direction	Presentation drawings Models may be done	10	
Topic: Cams	Apply the principals of the CAM to a relevant advanced mechanical context using only uniform motion. Emphasise the direction and follower (roller & wedge shaped).	Presentation drawings		

<u>Intervention Strategy</u>		<u>DATE TOPIC / THEME COMPLETED</u>
<u>Enrichment:</u>		
<u>Remedial:</u>		



QUESTION 2: LOCK (HELIX)

A farmer needs to replace some of the old fence poles with new ones. He knows from past experience that to dig the holes for the poles is a time-consuming job. He decides to design a tool that can help him speed up the job of digging the holes. He supplies the design of a tool to make a hole that will help him drill holes into the ground.

Given:

The inner shaft of the tool and the starting point for an auger.

Specifications:

The lead (ONE full turn) is 450 mm.

The inner diameter of the auger is 300 mm.

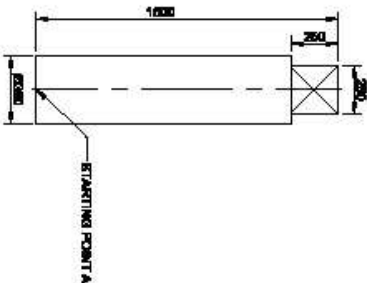
The outer diameter of the auger is 600 mm.

Instructions:

- Draw the given shaft to scale 1:10.
- Draw TWO full turns of a right-hand auger starting at position (A) indicated in the front of the shaft.
- Show ALL necessary construction.
- NO hidden detail is required.

[20]

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A



SHAFT DETAIL AND STARTING POINT

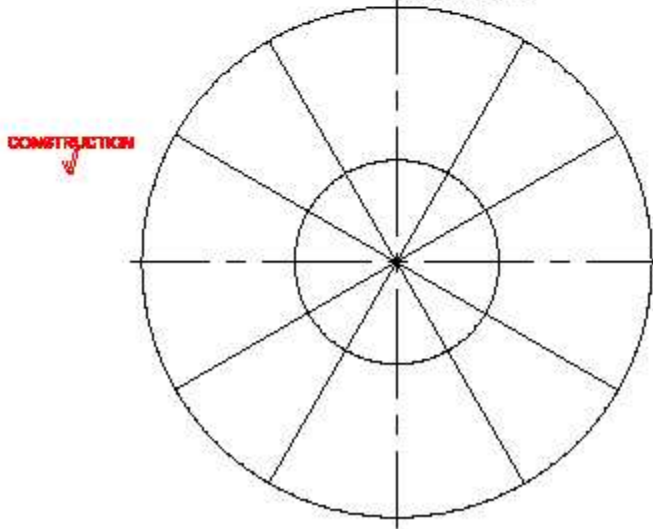
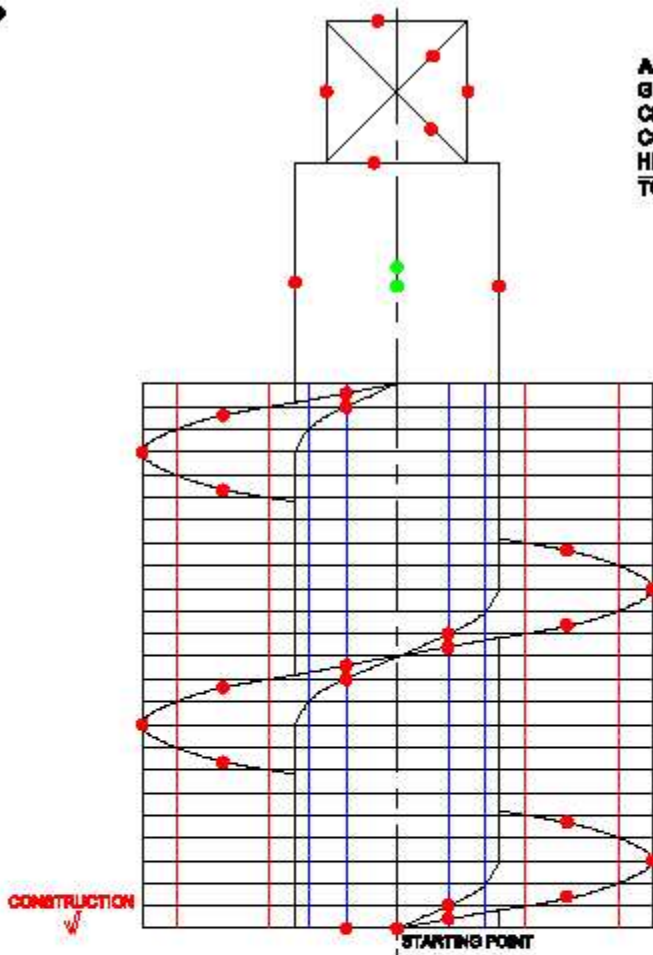
ASSESSMENT CRITERIA

GIVEN	= 6
CENTRE LINE	= 1
CONSTRUCTION	= 4
HELIX	= 10
TOTAL	= 20

EXAMINATION NUMBER	
EXAMINATION NUMBER	3



ASSESSMENT CRITERIA	
GIVEN	= 5
CENTRE LINE	= 1
CONSTRUCTION	= 4
HELIX	= 10
TOTAL	= 20



QUESTION 2 PAPER 2
GRADE 11 EXEMPLAR 2007
MEMORANDUM

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