

NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**STATEMENT OF STANDARDS**

UNIT NUMBER: 7190045

UNIT TITLE: WORKSTART: MECHANICAL SKILLS

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME

1. SELECT AND CARE FOR MATERIALS AND EQUIPMENT SUITABLE FOR AN ACTIVITY RELATING TO MECHANICAL SKILLS

PERFORMANCE CRITERIA

- (a) Materials and equipment which are essential to the activity are identified correctly.
- (b) The purpose of essential materials and equipment is described correctly in terms of the activity.
- (c) The care of essential materials and equipment is demonstrated correctly.

RANGE STATEMENT

Materials and equipment: raw materials; machine tools; hand tools; holding and guiding devices.

Care of materials and equipment: cleaning; storage.

EVIDENCE REQUIREMENTS

Performance evidence for Performance Criteria (a) and (c) and for each critical class in the range statement should be gathered from direct observation of the candidate in the learning environment. Evidence should be gathered of the candidate's competence in selecting materials and equipment for two activities.

The raw materials selected should include two or more of the following: paper, wood, ferrous metals, non-ferrous metals, plastics. At least one of the raw materials must be metal.

The machine tools selected should include one or more of the following: mill, lathe, drill.

The hand tools selected should include two or more of the following: saws, scriber, centre punch, drills, files, hammers, dividers, spanners.

Holding and guiding devices should be selected where appropriate. The holding and guiding devices selected should include one or more of the following: jigs for drilling, templates for marking off, fixtures or stops for machine tools.

Evidence for Performance Criterion (b) cannot be derived from performance evidence alone. Evidence for Performance Criterion (b) should be gathered from the candidate's answers to questions. The candidate should be allowed to provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

OUTCOME

2. PERFORM AN ALLOCATED ACTIVITY IN A LEARNING SITUATION WHILE SUPERVISED

PERFORMANCE CRITERIA

- (a) Skills which are appropriate to the activity are demonstrated correctly.
- (b) The allocated activity is carried out with sequencing, timing and organisation which comply with instructions.
- (c) The point of completion for the allocated activity is recognised from instructions.
- (d) The allocated activity is completed to the standard given in the instructions.
- (e) The allocated activity is carried out in accordance with health and safety instructions specified for the learning environment and the activity.

RANGE STATEMENT

The range for this outcome is fully expressed within the performance criteria.

EVIDENCE REQUIREMENTS

Performance evidence for each Performance Criterion should be gathered from direct observation of the candidate in the learning environment. Evidence should be gathered of the candidate's competence in performing two activities.

The skills demonstrated should include two or more of the following: filing, drilling, turning, use of templates for marking off, use of jigs and fixtures for holding and guiding.

Where the candidate's knowledge and understanding cannot be inferred from performance evidence alone, for example, understanding the reasons for correct sequencing, timing and organisation, additional evidence should be gathered from the candidate's answers to questions. The candidate should be allowed to

provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

OUTCOME

3. DESCRIBE HEALTH AND SAFETY INSTRUCTIONS

PERFORMANCE CRITERIA

- (a) Health and safety instructions applying to the learning environment are described accurately.
- (b) Health and safety instructions applying to allocated activities are described accurately.

RANGE STATEMENT

The range for this outcome is fully expressed within the performance criteria.

EVIDENCE REQUIREMENTS

Evidence for both Performance Criteria should be gathered from the candidate's answers to questions. The candidate should be allowed to provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

Evidence should be gathered of the candidate's knowledge and understanding of health and safety instructions relating to two separate activities.

OUTCOME

4. DESCRIBE THE EXPERIENCE OF COMPLETING AN ACTIVITY IN A LEARNING SITUATION IN TERMS OF MEETING PERSONAL TARGETS

PERFORMANCE CRITERIA

- (a) Personal targets are stated accurately in terms of relevance to the activity.
- (b) The extent to which personal targets are met is described accurately.
- (c) The learning gained during the activity is stated accurately in terms of its relationship to future education or training.

RANGE STATEMENT

The range for this outcome is fully expressed within the performance criteria.

EVIDENCE REQUIREMENTS

The candidate should be allowed to provide evidence by the use of his or her normal mode of communication which may be verbal or non-verbal and may include one or more of the following: speech, writing, word processing, signing, lipreading, braille, computer-assisted communication.

ASSESSMENT

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Accurate records should be made of the assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

SPECIAL NEEDS

In certain cases, modified outcomes and range statements can be proposed for certification. See references at end of support notes.

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NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**SUPPORT NOTES**

UNIT NUMBER: 7190045

UNIT TITLE: WORKSTART: MECHANICAL SKILLS

SUPPORT NOTES: This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

NOTIONAL DESIGN LENGTH: SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 40 hours. The use of notional design length for programme design and timetabling is advisory only.

PURPOSE This unit is designed for the candidate who is developing the basic skills necessary to complete supervised activity relating to mechanical skills. The candidate may be expected to benefit from delivery in a supported learning environment. The unit can be used for reference purposes during introduction to vocational guidance.

The unit is also designed to enable the candidate to transfer the skills from a supported learning environment to a learning environment which is oriented towards the world of work. It may also be useful when deciding on future progress. The unit forms part of the National Certificate Workstart Award. It could also be used as a free standing unit.

SQA publishes summaries of NC units for easy reference, publicity purposes, centre handbooks, etc. The summary statement for this unit is as follows:

This module will introduce you to activities which are carried out relating to basic mechanical skills. On completion of the module you will be able to select the correct equipment to carry out activities and carry out some allocated tasks safely, under supervision. You will also be able to describe what you have learned to do and explain if your personal learning targets have been met.

CONTENT/CONTEXT The candidate should achieve the level of competence of someone who can demonstrate the basic skills underpinning vocational competence. The skills should be acquired in a supported learning environment, such as that provided by a secondary school.

This unit should be seen in the context of the wide range of skills needed for achievement of the National Certificate Workstart Award and should be integrated into practical activities in the learning environment.

The candidate's basic skills could be enhanced by the use of templates, jigs, fixtures and machine stops.

A complex task can be broken up into small attainable operations and by using aids such as templates, jigs and fixtures, the skill requirement needed to complete an activity can be much reduced thus increasing the scope of activities which could be selected.

It is suggested that the unit should be delivered in a workshop environment which allows the candidate to practise basic mechanical skills, and which allows for practical sessions of a minimum of one hour in order to allow time for the realistic practice of basic mechanical skills. Tutors/trainers should use their expertise to provide detailed guidance to the candidate in his or her selection of activities, materials and equipment.

Corresponding to Outcomes:

1. The candidate should be made aware of the range of materials used in the activity and the reasons for their use eg lightness, ease of working. The candidate should be able to identify tools used in the activity and describe their function.

The candidate should be able to identify the location of equipment required, and should be able to clean and store the equipment.

2. The activities should be limited to simple practical tasks. The candidate should be guided by the tutor/trainer on the selection of tasks on the basis of any statutory restrictions and on the feasibility of the tasks being undertaken within the timescale of the unit. The candidate should be aware of the correct sequencing, timing and organisation required to complete the activity and should be able to make a statement concerning the importance of correct sequencing, timing and organisation.

The candidate should be shown the mechanical skills required and the use of equipment. This would be demonstrated by the instructor followed by graded simple exercises by the candidate leading to the attainment of the skills required being performed in the correct sequence, timing and organisation to complete the activity.

3. The candidate's understanding of health and safety instructions should be developed from an appreciation that regulations, generally, follow a real need. The discovery, for example, that certain materials or working practices are regularly causing illness or accidents leads to the introduction of regulations governing the use of these materials or the carrying out or modifying of the practices. The regulations will merely codify the rules that a sensible and caring person would wish to follow in the working environment in order to avoid harmful consequences.

The candidate should understand the need for a high standard of personal safety. The candidate should be introduced to aspects of health and safety and safe working practices which are relevant to the activities being undertaken, for example, maintaining a safe environment, importance of tidiness to reduce hazards, safe use of tools and equipment, recognising and reporting potential hazards, emergency procedures. The candidate

should understand the need to wear appropriate clothing and practical footwear.

The candidate should demonstrate safe working practice in all activities required to complete the given tasks eg the protection required from all sharp cutting edges on tools, the danger of rotating machinery, the protection of the eyes when using tools, the need for tidiness to reduce potential hazards, the location of emergency stop switches and emergency procedures.

The candidate should have a basic knowledge of first aid relevant to the activity. This might include the use of a first aid box. The candidate should be able to obtain help and guidance from a first aider.

4. The candidate should describe the experience of completing the activity in terms of his or her personal targets.

The candidate should be made aware of the vocational aspect of the unit and the standard of achievement that will be expected for the satisfactory completion of the unit. This may be done in groups or individually.

The candidate should be given time to discuss his or her progress, wishes and suitability regarding the transfer of the mechanical skills acquired.

APPROACHES TO GENERATING EVIDENCE It will be useful if the candidate has basic mechanical skills. It is not necessary for the skills to be at a nationally recognised level of competence. Wherever possible, the candidate should be encouraged to relate the outcomes in this unit to his or her own experience of daily living and to individual targets.

An integrated approach involving practical work, simulation, and the sharing of learning experiences can be used in order to develop the competences required.

The candidate should be encouraged to help in the planning and organisation of activities. This will help the candidate to grow in confidence.

Ongoing discussion and formative assessment should take place throughout the unit and remedial tuition should be provided in a suitable form when appropriate.

The possibility of transferring the mechanical skills gained to an environment with a more vocational emphasis should be considered particularly during the assessment of Outcome 4.

ASSESSMENT PROCEDURES Centres may use the Instruments of Assessment which are considered by tutors/trainers to be most appropriate. Examples of Instruments of Assessment which could be used are Practical Exercises, Personal Interviews and Short Answer Questions. When answering questions, the candidate should use his or her normal mode of communication. It is the responsibility of the centre to ensure that an accurate record of the candidate's response is retained as evidence of the candidate's competence.

Outcome 1: Practical Exercises could be used to gather evidence for Performance Criteria (a) and (c). The candidate should undertake two separate exercises. A checklist may be used to record evidence of candidate performance.

It is suggested that ten Short Answer Questions are used to cover Performance Criterion (b). Satisfactory performance will be demonstrated by the candidate answering all questions correctly.

Outcome 2: Practical Exercises could be used to gather evidence for all Performance Criteria. The candidate should undertake two separate activities. A checklist may be used to record evidence of candidate performance.

It is suggested that three Short Answer Questions are used on each occasion to gather evidence of the candidate's understanding of the reasons for correct sequencing, timing and organisation. There should be one question on each of: sequencing, timing and organisation.

Outcome 3: A Personal Interview could be used to gather evidence of the candidate's knowledge and understanding of health and safety instructions. During the interview, it is suggested that the candidate should be asked 4 questions relating to Performance Criterion (a) and 4 questions relating to Performance Criterion (b). The questions constructed by the assessor should be in a format which is appropriate to the candidate's normal mode of communication. This could include diagrams or other visual aids.

Outcome 4: A Personal Interview could be used to enable the candidate to describe his or her experiences in completing activities undertaken in a learning situation. The candidate may also wish to complete a personal profile.

PROGRESSION This unit forms part of the National Certificate Workstart Award. Successful completion of the award will facilitate the candidate's progress to the National Certificate Skillstart awards.

RECOGNITION Many SQA NC units are recognised for entry/recruitment purposes. For up-to-date information see the SQA guide 'Recognised Groupings of National Certificate Modules'.

REFERENCES

1. Guide to unit writing.
2. For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment.
3. Procedures for special needs statements are set out in SQA's guide 'Students with Special Needs'.
4. Information for centres on SQA's operating procedures is contained in SQA's Guide to Procedures.
5. For details of other SQA publications, please consult SQA's publications list.

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