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## Overview

This standard covers the competences you need to demonstrate how to test and evaluate new scientific or technical methods and equipment for learning activities in accordance with approved procedures and practices.

You will be required to demonstrate that you can establish the testing requirements of the new methods and equipment with relevant people. You will plan and run new the new methods or equipment and record the results. You will also establish the new learning activities with the required personnel in accordance with the relevant workplace procedures.

The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

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## Performance criteria

- You must be able to:*
- P1 ensure that your work is carried out in accordance with workplace procedures
  - P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
  - P3 establish the testing requirements of the new method and equipment with relevant people
  - P4 prepare the resources required and identify the hazards and risks associated with the testing of the equipment
  - P5 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
  - P6 run and test the new methods and equipment and record the results
  - P7 evaluate the test results from the new methods and equipment for learning activities in partnership with the relevant people
  - P8 communicate the required information about the work done, in accordance with departmental and organisational procedures

## Knowledge and understanding

### *You need to know and understand:*

- K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
- K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
- K3 the scientific or technical techniques and processes you must use correctly in the workplace.
- K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
- K5 the importance of correct identification, and any unique workplace coding system
- K6 the organisational requirements for maintaining the security of the workplace
- K7 the lines of communication and responsibilities in your department, and the links with the rest of the organisation
- K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
- K9 the organisational policy and procedures on safe working practices
- K10 why it is important to follow safe operating procedures when using new equipment and materials
- K11 what are the principles and procedures for testing new equipment
- K12 what are the purposes of testing, and the specific use to which the test results are to be put
- K13 what are the relevant testing methods that can be used to achieve the purpose of testing
- K14 how to identify defective equipment and the appropriate action to take
- K15 how the equipment should be operated during testing and the precautions to take
- K16 why calibration is important and how to check calibration
- K17 what is the potential impact of the test on health, safety and the learning environment
- K18 what methods can be used for dealing with the handling, storage and disposal of materials
- K19 what cleaning materials and methods of use should be used
- K20 the methods that should be used for safe storage of the equipment
- K21 how to record and evaluate the results of the testing
- K22 how to modify the scientific or technical method, and when this may be required
- K23 what documentation should be used for new learning activities
- K24 the document control and reporting procedures that should be used
- K25 the reasons why effective communication is important, and the methods used for communicating effectively

## Scope/range

1. evaluate the results of the test with one of the following people:
  - 1.1 supervisor
  - 1.2 team leader
  - 1.3 health and safety officer
  - 1.4 manager
  - 1.5 head of department
  - 1.6 teacher or trainer
  
2. evaluate the results of the test for one of the following learning activities:
  - 2.1 timetabled lessons
  - 2.2 other supervised events
  - 2.3 outside activities
  
3. run and test methods for two of the following scientific or technical activities:
  - 3.1 biological equipment and/or instruments
  - 3.2 chemical equipment and/or instruments
  - 3.3 electronic equipment and/or instruments
  - 3.4 weighing and measuring equipment and/or instruments
  - 3.5 information technology equipment
  - 3.6 engineering machines, equipment and/or instruments
  - 3.7 other technical equipment or instruments
  
4. develop all of the following procedures for the learning activities with relevant people:
  - 4.1 equipment use
  - 4.2 cost of purchase
  - 4.3 hazards and risks
  - 4.4 services (e.g. gas, electricity)
  - 4.5 materials/consumable use
  - 4.6 learning outcomes
  - 4.7 time required
  - 4.8 scientific or technical skills
  - 4.9 curriculum/course documents
  
5. assess and give advice on two of the following hazards and risks:
  - 5.1 harmful/toxic material
  - 5.2 oxidising material
  - 5.3 biohazard material
  - 5.4 sensitising/irritant material
  - 5.5 extreme temperature item
  - 5.6 electrostatic discharge item
  - 5.7 high voltage item
  - 5.8 radioactive material
  - 5.9 manual handling
  - 5.10 highly flammable material

5.11 corrosive material

5.12 equipment safety

6. test results records should include two of the following:

6.1 hazard/safety issues

6.2 performance reports

6.3 test records

6.4 operating methods/procedures

6.5 pass/fail sheets

6.6 quality/output

results

7. record and communicate details of the work done, to the appropriate people, using:

7.1 verbal report plus one method from the following:

7.2 written or typed report

7.3 computer-based record

7.4 specific workplace documentation

7.5 electronic mail

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