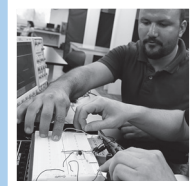
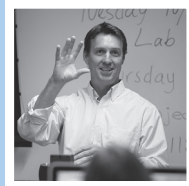


# Work place Core Skills Unit

## PROBLEM SOLVING SCQF level 6 Assessment Support Pack



### What are Core Skills?

Core Skills are skills and abilities which everyone needs in their work. This is true for every job in every workplace.

The Core Skills are:

- Communication
- Numeracy
- Information and Communication Technology
- Problem Solving
- Working with Others

Employers look for Core Skills when they are appointing new staff. They also expect their existing staff to have these skills.

Core Skills are important because they help you work effectively in your present job and also prepare you for jobs which you will do in future. Developing your Core Skills helps you deal with today's rapidly changing world and improve your career prospects.

## Part 1: Information for assessors

### What is involved?

The Unit is designed for the workplace and the content should involve tasks and skills that are suited to the requirements of the candidate's working environment.

The focus of the Unit is on transferable problem-solving skills:

- ◆ critical thinking (investigating)
- ◆ planning and organising (planning and solving)
- ◆ reviewing and evaluating (checking and evaluating)

These skills should be useful to candidates in their current and future jobs, as well as in their social and personal lives.

The Unit is designed for those who have significant skill and experience in using problem-solving skills within the workplace, eg at managerial level. The Unit might be suitable for candidates who are currently working towards an SVQ/NVQ at level 4.

Problem Solving tasks can be combined with the other Core Skills Units: Communication, Numeracy, Information and Communication Technology, and Working with Others. If you adopt this approach, records must be kept for each Unit.

## Guidance on the Unit

Candidates at SCQF level 6 are required to develop an approach to deal with complex problems in a workplace context. Candidates will work with a high degree of independence and initiative on the tasks but may ask you for clarity on anything within the Unit that they do not understand. They may need some guidance to identify a suitable problem that meets the level of the Unit, problem-solving strategies, and suitable evaluation criteria either from you, or from a supervisor or other workplace mentor.

The 'What do I need to do' section of the Unit lists the knowledge, understanding, and competence that candidates must have and what they need to do to prove this. You may want to discuss these with the candidates. The following notes give detailed pointers on the things candidates need to know and be able to do.

### What candidates need to do

#### Investigating

Candidates will apply critical thinking as the first stage of the problem-solving process. They will investigate and analyse a complex problem to identify the main factors that affect the problem. These factors will include identifying the causes of the problem, looking at why the problem has arisen, and who is involved. The candidates will identify the relative and comparative importance of these factors and their effect on the problem. They will be able to use problem-solving techniques such as brainstorming or mind-mapping to develop and justify an approach to solving the problem. They will be able to undertake primary and/or secondary research; this may involve colleagues, customers, suppliers, or outside experts. They will evaluate the situation and devise and justify a strategy to deal with it. The strategy may involve an approach that is new to the candidates or may be a modification of an existing approach.

Candidates will need to know about the systems and procedures in their workplace (including health and safety) and be aware of the personnel structure of the organisation. Candidates will need to know what resources are available to them, and any time constraints and limitations so they can carry out the plan. They will also need to know about external factors that influence their organisation's operation.

## Planning and solving

Candidates will use the results of their critical thinking to devise an action plan to deal with the key factors affecting the problem. The action plan will clearly identify what tasks need to be carried out and the relationships between them. It may include tasks that can be carried out simultaneously and the candidates will identify who is to carry out the tasks.

In devising the action plan, the candidates will take into account any workplace limitations and issues relating to managing time and people. The candidates will be able to use Gantt charts if required. Candidates will identify and obtain the resources needed to carry out the action plan. Obtaining resources may also involve implementing procedures and input from others in the workplace.

Once the action plan has been devised the candidates will carry it out and either undertake tasks themselves or supervise the completion of tasks where these have been allocated to others.

Candidates will monitor and review the progress of the action plan continuously and undertake an interim review if appropriate. The action plan will be amended in accordance with the findings of these ongoing reviews.

## Checking and evaluating

Once all the tasks specified in the action plan have been completed, the candidates will evaluate how effective each stage of their problem-solving approach was. They will do this by choosing criteria and evidence gathered from the implementation of the action plan to review each stage of the process, ie analysing the situation and planning and organising the task.

The candidates will consider the evidence, make their evaluation, and suggest modifications or alternatives for improving future problem-solving strategies, justifying their evaluation and recommendations from the evidence they have gathered.

## How do candidates show they have achieved the Unit?

The Unit requires the candidates to provide evidence for each of the three tasks.

### Task 1: Investigating

Investigate and analyse why a complex problem, situation, or issue has arisen in their workplace. Devise a course of action to deal with it.

### Task 2: Planning and solving

Plan, organise, and carry out the course of action. Monitor the effectiveness of the planned course of action and adjust as necessary.

### Task 3: Checking and evaluating

Devise criteria to evaluate how well their approach to the problem-solving activity worked in practice. Use criteria and evidence gathered from the implementation of the action plan to draw conclusions and make recommendations for improvements and alternative ways of dealing with similar situations in the future.

Candidates must use only one problem situation to prove that they can do all of the tasks in the Unit. They should not gather evidence from different problem situations for different tasks.

## Assessment requirements

The problem, situation, or issue should be one where variables may be complex or unfamiliar, relationships need to be clarified, and the context may be unfamiliar.

The action plan should include a large number of variables in an unfamiliar context where relationships may be unfamiliar. It is likely to involve more than one concurrent strand, allowing for some of the tasks to be carried out simultaneously. Candidates must monitor and adjust the action plan as necessary.

Resources used will be less familiar to the candidates and may involve a search. These might include sources of information, set procedures, people, money, equipment, and physical resources.

Once the action plan has been devised the candidates will carry it out and either undertake tasks themselves or supervise the completion of tasks where these have been allocated to others.

Candidate will choose criteria for reviewing and evaluating the strengths and weaknesses of their approach to problem solving. Criteria may include making a correct analysis of the original causes of the problem, keeping to time, appropriate allocation of tasks and use of resources, and making effective amendments to the original action plan as required

Candidates will gather evidence to support and justify their evaluation. Examples of evidence are comparisons with other systems, market research, product testing, and quantitative and qualitative research findings.

## Gathering evidence

It may be appropriate for you to gather written evidence produced by the candidates while carrying out the practical tasks. However, written evidence is not essential and is inappropriate if it disadvantages the candidate.

You may wish instead to observe the candidate carrying out a task and use oral questioning. This requires you to create and complete a record of questions asked and candidate responses.

From the candidate's point of view it is useful to have the means of keeping all the work of this Unit together. You can help here by providing a workbook that includes all the evidence-gathering items. An alternative would be to provide worksheets that can be made into a portfolio or e-portfolio.

If you have chosen to integrate the problem-solving work with other Units being undertaken by the candidate, it may be possible to assess the problem-solving process as part of a larger single activity. In this case you must keep separate records for this Unit.

You should try to identify naturally occurring opportunities for assessment where possible. Some of the exemplars in this pack could be used or contextualised for this purpose.

The assessment process is likely to involve one or more of the following:

- ◆ observation
- ◆ recording
- ◆ oral questioning

When assessing by observation, you must keep a detailed checklist. Similarly, if you use oral questioning, you must keep a record of both the questions and the candidate responses. All evidence, whether produced by the candidate or a record made by yourself, must be retained, signed, and dated by you.

## Planning

You should work out where opportunities for meeting the Unit standards are likely to arise. Where possible, these should be built into the assessment process.

You should explain and discuss the assessment process with the candidates so that they are clear about what is expected of them.

## Part 2: Exemplar assessment tasks

Note for assessors

You can use the exemplar assessments given in this section in several ways:

- ◆ to illustrate to candidates the type of materials that could be used to generate evidence
- ◆ to identify the type and amount of evidence that candidates should have gathered in their portfolio
- ◆ to help identify the level of complexity in evidence required for the Core Skills at this level
- ◆ to help you to identify/create an assessment related to the candidate's own work environment
- ◆ as an off-the-shelf assessment, although every effort should be made to source/provide candidates with assessment materials that relate to their specific area of work



## Exemplar assessment

Company management is becoming concerned at falling levels of productivity on the shop floor accompanied by increasing absenteeism and lateness. You are asked to investigate the reasons for this situation and present your findings and recommendations to management. You should:

- 1 Look at the situation and decide on the factors that are causing the problem.
- 2 Decide on the relative and comparative importance of these factors.
- 3 Use problem-solving techniques to analyse the problem.
- 4 Develop and justify an approach to solve the problem.
- 5 Work out an action plan to deal with all the key factors involved in the problem. You will need to decide on the necessary tasks and who will do them; decide which tasks would be done simultaneously; work within any limitations in the workplace; manage time and manage people.
- 6 Choose and obtain the resources you will need. You may need to use equipment, money, and information from other people, and find out the procedures for obtaining these.
- 7 When your plan is complete put it into practice, reviewing and amending as appropriate.
- 8 Choose criteria to judge how effective each aspect of the action plan has been. These might include considering if you correctly analysed the causes of the problem originally; did you devise an action plan to deal with these effectively; did you keep to time; did everyone carry out their allotted tasks.
- 9 Gather evidence relevant to your chosen criteria with which to judge the effectiveness of every aspect of the problem-solving activity. These might include making comparisons with other systems, market research, product testing, or quantitative or qualitative research findings.
- 10 Decide on the effectiveness of every aspect of your problem-solving activity, using the evidence you have gathered to justify your decisions.
- 11 Recommend alternative ways of solving similar problems in future and justify your recommendations from the evidence you have gathered.

## Marking notes

At this level there is no one definitive solution provided as there will be more than one solution to the problem. The examples given are indicative of the possible answers.

### Task 1: Investigating

At this level candidates will be able to identify the factors that affect the problem, assess the relevance and comparative importance of them, and decide what effects the problem is causing. There might be many factors relating to the problem in the exemplar and the candidates will identify these, relate them to the causes of the problem, and decide why the situation has arisen. Factors may relate to the people involved or to things such as equipment and premises. The candidates will assess the relevance of these factors and their comparative importance to the situation. In the example it would be likely that factors concerned with wages, working conditions, and communication with management would be considered most relevant and important, while factors such as a lack of organised social or sporting activities may be seen as less important. The effect of the problem in the example is likely to be identified as falling productivity in the company, which may lead to decreasing profit and a loss of jobs. The candidates will use problem-solving techniques to help clarify the issue and decide on an approach to take. Mind-mapping could be used to analyse the problem and brainstorming used to find approaches to deal with the problem. It may also be useful for the candidates to sub-divide the problem into its component parts to help clarify and analyse the situation. Looking at the exemplar problem, eg candidates may carry out an initial investigation into the increase in absenteeism and lateness to find out when these started, who is involved, which areas of the workplace are involved, and when they occur. The falling levels of production may similarly be fully investigated. Research findings can then indicate relationships between these factors and provide the basis for formulating an approach to solving the problem. An approach to solve the problem will involve a further detailed investigation into the problem, which will yield both quantitative and qualitative information. This may involve gathering information from internal and external sources and personnel. The candidates will then analyse findings and make further investigations into the relative costs of alternative actions. Final recommendations will be drawn up based on these and presented to management. Candidates will justify the approach developed either by referring to the resources available or by a comparison with alternative approaches.

## Task 2: Planning and solving

Resources might include specialist software; photocopier, and meeting rooms, and a timescale should be made clear in the action plan. People involved who may have tasks allocated to them or provide information might be the candidate's line manager, junior colleagues, health and safety personnel, colleagues, and outside experts.

When the action plan is complete the candidates and others appointed to carry out tasks will implement the plan. The candidates will manage the implementation of the plan and review and amend it as required. If required, an interim review of the implementation of the action plan can be made and the action plan amended if necessary. Reasons will be given for any adjustments to the original plan.

## Task 3: Checking and evaluating

At this level candidates will be expected to choose criteria to judge how effective every aspect of their problem-solving activity has been. Candidates will gather evidence relevant to the chosen criteria with which to judge the effectiveness of all aspects of the problem-solving activity. Evidence relating to the evaluation might include making comparisons with other systems, market research, product testing, and quantitative and qualitative research. An example of this from the exemplar assessment might include using evidence from surveys carried out with staff and from in-depth face-to-face interviews to support the selection of the most relevant variables that affected the problem and which suggest actions to work towards a solution to the problem. The candidates will be able to decide how effective every aspect of the plan has been, basing their decisions on the evidence they have collated, which will also be used in justification of candidates' evaluations. The candidates will then be able to recommend alternative ways of solving problems in future and justify these from the evidence gathered. Recommendations could include improvements to the process, the need for further evidence, or the use of an alternative strategy.

## Part 3: Exemplar recording documentation

This section gives some examples of forms that could be used by the candidates and/or assessor to gather evidence and record assessment decisions.

You are encouraged to adapt these materials to suit you and your candidate's preferred approach, ie boxes can be made bigger, format can be changed to a non-table format, font size etc.

### Assessment plan

You should work out where naturally occurring opportunities for meeting the standards are likely to arise and, where possible, build them into the assessment process.

You should explain and discuss the assessment process with candidates so they are clear about what is expected of them.

### Record sheets

Record sheets are provided for each of the three tasks:

Task 1: Investigating

Task 2: Planning and solving

Task 3: Checking and evaluating

The candidates can provide written answers on these forms. Alternatively, if you use oral questioning, you may use them to write down the candidates' answers.

### Assessment checklists

Candidates could use the assessment checklists as a means of cross-referencing evidence in their portfolio to the Unit.

Assessors could use the assessment checklists to record assessment decisions and any relevant comments.

### Summary checklist

The summary checklist could be used to record the assessment decisions from the assessment checklists on a single form.

## Assessment plan

Problem Solving (SCQF level 6)

Candidate: \_\_\_\_\_

Task to be assessed: \_\_\_\_\_

Proposed date of assessment: \_\_\_\_\_

Proposed method of assessment	Tick	Notes
Assignment or project		
Observed performance		
Witness testimony		
Written questions		
Oral questioning		
Product evaluation, eg written document		
Previous evidence		
Other evidence		

Details agreed and signed by:

Assessor \_\_\_\_\_

Candidate \_\_\_\_\_

Line manager (if required) \_\_\_\_\_

Date \_\_\_\_\_

## Record sheet

Problem Solving (SCQF level 6)

Task 1: Investigating

Candidate name: \_\_\_\_\_

Date: \_\_\_\_\_

### Task 1: Investigating why a problem, situation, or issue has arisen

What is the problem, situation, or issue?

What are the main factors affecting the problem? For example, what are the causes of the problem, why has the problem arisen, and who is involved? State the effect of the problem.

What are the most important factors and why?

What approaches are you going to take to address the problem and why?

Who will you need to help you with this?

Assessor's comments

## Record sheet

Problem Solving (SCQF level 6)

Task 2: Planning and solving

Candidate name: \_\_\_\_\_

Date: \_\_\_\_\_

### Task 2: Work out an action plan to deal with the problem and carry it out

Use the rows overleaf to help you make a plan to address all the key factors affecting the problem. You can also provide additional information to supplement your plan. Your plan should show what tasks need to be done and the order in which they should be carried out.

Some tasks will need to be carried out simultaneously and you will need to identify who carries these out; this could be you or someone else. You should identify any workplace limitations and how time and money will be managed. You should identify the resources you will need to use such as personnel, equipment, and physical resources, and any procedures that need to be followed to obtain these, eg completing order forms or requesting personnel time. Keep detailed records of the implementation of the tasks in your action plan, making clear that you are reviewing and amending it as appropriate.

When your plan is complete, check with your assessor before putting the plan into action. Keep a record of what you do and when you do it as you complete the different tasks.

What needs to be done and in what order? Identify any tasks that can be done simultaneously.

Who will do the tasks?

What resources are needed? Identify the procedures required to obtain any resources.

Any limitations, such as time or cost?

Record of what is done. You should make it clear how people and time have been managed and review the outcome of each task.

Amendments made to original plan and reasons for them.

List the evidence you have to support your planning and organising, eg comparisons with other systems, market research, product testing, and quantitative and qualitative research

Assessor's comments



## Record sheet

Problem Solving (SCQF level 6)

Task 3: Checking and  
evaluating

Candidate name: \_\_\_\_\_

Date: \_\_\_\_\_

### **Task 3: Decide how well your approach to the problem-solving activity worked in practice**

You should also note evidence you have retained to support your evaluation, eg minutes of meetings, cost analyses, market research, comparisons with other systems, product testing, and quantitative and qualitative research.

When you have completed your review and evaluation, recommend alternative ways of solving problems in future based on your experience with this problem-solving activity and the evidence you have gathered. Give reasons for your recommendations.

Now you have completed your action plan, decide on criteria to assist you identify the strengths and weaknesses of each part of your problem-solving approach. Your criteria might include was the cause of the problem correctly identified, was the course of action taken the most appropriate, were the allotted timescales appropriate to the tasks, were the resources suitable for the task, did everyone work effectively on their allocated tasks, was the plan completed within budget, and was the problem resolved. You should also decide on the effectiveness of any amendments you made to your action plan based on your ongoing review of its progress.

Use the rows overleaf to keep a record of your review and evaluation.

You should also note evidence you have retained to support your evaluation, eg minutes of meetings, questionnaires, evaluation sheets, and cost analyses.

Stages of the plan (including any amendments made)

Strengths

Weaknesses

Evidence to support evaluation

## Record sheet

Problem Solving (SCQF level 6)

Task 3: Checking and  
evaluating

Candidate name: \_\_\_\_\_

Date: \_\_\_\_\_

### Task 3: continued

Based on the evidence gathered, describe how effective each stage of your problem-solving strategy was.

Suggest alternative ways of approaching similar problems in the future, with reasons.

Assessor's comments

## Assessment checklist

Problem Solving (SCQF level 6)

Task 1: Investigating

Candidate name: \_\_\_\_\_

Date: \_\_\_\_\_

### Task 1: Investigate and analyse why a complex problem related to your work has arisen

	Evidence	Assessor initials and date	Comments
Identified the factors contributing to the problem, situation, or issue			
Assessed the relevance of these factors and how they relate to one another			
Applied problem-solving techniques			
Considered options then developed and justified a strategy to deal the problem, situation, or issue			

## Assessment checklist

Problem Solving (SCQF level 6)

Task 2: Planning and solving

Candidate name: \_\_\_\_\_

Date: \_\_\_\_\_

<b>Task 2: Plan, organise, and carry out a suggested approach to deal with the problem</b>			
	<b>Evidence</b>	<b>Assessor initials and date</b>	<b>Comments</b>
Worked out an action plan to deal with all the key factors contributing to the problem, situation, or issue			
Identified and obtained resources needed to carry out the action plan, at least two of which were unfamiliar to the candidate			
Decided on how the activity actually would be managed			
Carried out the action plan, reviewing and amending it as appropriate			

## Assessment checklist

Problem Solving (SCQF level 6)

Task 3: Checking and  
evaluating

Candidate name: \_\_\_\_\_

Date: \_\_\_\_\_

<b>Task 3: Check how well your approach to the problem-solving activity worked in practice</b>			
	<b>Evidence</b>	<b>Assessor initials and date</b>	<b>Comments</b>
Devised criteria to identify the strengths and weaknesses of the problem-solving approach			
Gathered evidence to support evaluation			
Decided the effectiveness of each stage of the problem-solving strategy, referring to supporting evidence			
Considered the results of the evaluation and recommended ways of solving similar problems in future			

## Summary checklist

Problem Solving (SCQF level 6)

Candidate name: \_\_\_\_\_

Candidate number: \_\_\_\_\_

Centre: \_\_\_\_\_

Task	Date achieved
1 Critical thinking (investigating)	
2 Planning and organising (planning and solving)	
3 Reviewing and evaluating (checking and evaluating)	
Assessor's signature: _____	Date: _____

## ADMINISTRATION INFORMATION

### Credit Value

6 SCQF credit points at SCQF level 6



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