

KEY SKILLS

Problem solving Level 4

The key skills are the skills which are most commonly needed to succeed in a range of activities – at work, in education and training and in everyday life. In developing the key skill of problem solving, you will learn to use and adapt your skills confidently and effectively in a range of settings and contexts.

Progression

The key skills qualifications are designed to enable you to progress at your own pace. Each level of the key skill above level 1 incorporates and builds on the previous ones. The key skills qualifications not only recognise your current capabilities, they also require you to identify how you can further improve your skills to meet new demands at higher levels.

Part A

YOU NEED TO KNOW HOW TO

This section tells you about the techniques and knowledge associated with each key skill. It tells you what you need to learn and practise to feel confident about applying these skills in your studies, work or other aspects of your life.

Part B

YOU MUST

This section builds on Part A and describes the application of skills. It describes the skills you must show. All your work for this section will be assessed. You must have evidence that you can do all the things listed in the bullet points.

To achieve Problem Solving at level 4 you must be able to apply your skills to suit different purposes. You will show that you can:

- establish opportunities for problem solving
- manage the problem solving process
- identify ways of improving your problem solving skills.

Part A

YOU NEED TO KNOW HOW TO:

Develop a strategy for problem solving

- identify opportunities for problem solving by spending time looking at work activities, and clearly identify what you hope to achieve
- explore problems to establish their critical features, including, as appropriate:
 - re-framing each problem by broadening its focus, re-visualising the problem by creating different perspectives and reviewing changes
 - simplifying the problem and discounting misleading information
 - making comparisons with similar problems and finding analogies
 - consulting other people such as those affected by the problems, your line manager or specialists, to help inform your choice of problem
- generate different ways of tackling a problem, making use of mathematical, verbal, visual, auditory, collaborative and physical methods, as appropriate
- negotiate with your line manager and other relevant people, the approach to use, supporting your case with a cost/benefit analysis of its value and risks and, if appropriate, counter-factual arguments
- plan how you will implement your approach to the problem, to include:
 - use of planning methods such as a Gantt chart/time-line
 - consideration of opportunities and constraints that may affect your plans, including your own and others' attitudes to risk, your level of expertise and factors to do with finance, resources, health and safety and other rules and regulations.

Monitor progress and adapt your strategy for solving the problem

- manage the problem solving process by:
 - getting and making efficient use of resources, including your own and others' specialist knowledge and skills
 - applying effectively methods that you have chosen as appropriate for the task
 - keeping to health and safety and other relevant rules and regulations
- keep track of progress and systematically check results by testing, observing, inspecting, measuring and sampling, as appropriate.

Evaluate your strategy and present the outcomes of your problem solving

- bring together and clearly present the results of your approach to problem solving, including evidence to support your conclusions
- agree with appropriate people, such as those affected by the problem, your line manager and specialists, the extent to which you solved the problem
- assess the strengths and weaknesses of your strategy, including how your decisions and other factors affected the results
- identify ways of further improving your problem solving skills.

Problem solving: level 4

Part B

YOU MUST:

Provide at least **one** example of meeting the standard for PS4.1, PS4.2 and PS4.3. The example should show that you can explore at least two problems (for PS4.1), one of which must be followed through to conclusion.

PS4.1

Develop a strategy for Problem solving.

Evidence must show you can:

- 4.1.1 identify opportunities for problem solving and clearly establish what you hope to achieve
- 4.1.2 explore problems to identify their critical features and devise different ways of tackling them
- 4.1.3 negotiate with appropriate people the approach to use and plan how you will implement this.

PS4.2

Monitor progress and adapt your strategy for solving the problem.

- 4.2.1 manage effectively and efficiently the problem solving process, using appropriate methods
- 4.2.2 keep track of progress and systematically check results
- 4.2.3 reflect critically on your approach to tackling the problem and adapt your strategy as necessary to improve your problem-solving skills.

PS4.3

Evaluate your strategy and present the outcomes of your problem solving skills.

- 4.3.1 bring together and clearly present the results of your approach to problem solving, including evidence to support your conclusions
- 4.3.2 agree with appropriate people the extent to which the problem has been solved
- 4.3.3 assess the effectiveness of your strategy, including factors that affected the outcomes, and identify ways of further improving your problem solving skills.

EXAMPLES AND GUIDANCE

The following gives further guidance and examples of the techniques and knowledge in Part A.

DEVELOP A STRATEGY FOR PROBLEM SOLVING

Explore problems to establish their critical features, simplifying the problem, broadening the focus of the problem, creating different perspectives.

Generate different ways of tackling a problem by drawing on similar problems, finding analogies with other situations.

MONITOR PROGRESS AND ADAPT YOUR STRATEGY FOR SOLVING THE PROBLEM

Manage the problem solving process by obtaining the resources needed, and keep track of progress by maintaining momentum, spotting and correcting errors.

EVALUATE YOUR STRATEGY AND PRESENT THE OUTCOMES OF YOUR PROBLEM SOLVING

Clearly present the results of your approach and support your conclusions using written, oral, visual material, demonstration of a working model.

Identifying ways of improving your problem solving skills by reflecting on the process and evaluating the extent to which the problem has been solved.

For further examples and guidance on the key skills standards please refer to *The Key Skills Standards and Guidance* (order ref: QCA/04/1272).

Help with producing evidence

If producing certain types of evidence is difficult for you because of a disability or for another reason, please discuss this with your tutor or supervisor. It may be possible for you to produce evidence using alternative methods. Depending on the skill and level, these may include use of a scribe (amanuensis); Braille, voice activated software and British Sign Language. Detailed guidance is available in the document *Basic and Key Skills: Guidance for candidates with Particular Requirements* published by the Joint Council for Qualifications. This is available from your key skills awarding body.

Please ask your tutor or supervisor for further guidance.

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