



Science

Short Course

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Centre name:

ASDAN tutor:

**Sheffield
Hallam
University**

Centre for
Science
Education

Developed in association with the Centre for Science Education at Sheffield Hallam University, with grateful thanks to them for authoring and providing content expertise.

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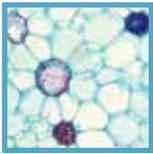
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Science Short Course

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Achieving your Short Course

How long will the Short Course take?	Hours	Credits
You have the option of accrediting up to 60 hours of Science activities. For every 10 hours, you are awarded one credit, for example:	10	1
	30	3
	60	6

These credits can contribute towards other programmes and qualifications.
The **Science Short Course** can lead to:

ASDAN Personal Development Programmes
(Bronze, Silver, Gold or Universities)

ASDAN Qualifications (Levels 1 and 2)

AoPE (Award of Personal Effectiveness) Levels 1 and 2
CoPE (Certificate of Personal Effectiveness) Levels 1 and 2

and could eventually lead on to:

ASDAN Qualifications (Level 3)
CoPE (Certificate of Personal Effectiveness) Level 3

What must I do?

Read through these introductory pages carefully.

Look at the modules and challenges and decide which challenges you wish to complete – your tutor will be able to help you decide.

Create an evidence portfolio to safely store all the material you'll need to have in place before your tutor can claim your Short Course certificate.

Plan, organise and carry out your chosen challenges, collecting evidence as you go and storing it safely in your evidence portfolio.

Before asking your tutor to check your work and claim your certificate make sure your portfolio contains the following:

1. A student book
2. A completed Record of Progress (page 5)
3. Evidence for each challenge completed
4. The correct number of Short Course Skills Sheets (see pages 43-50)
5. A completed Summary of Achievement (yellow centre pages)
6. A completed Personal Statement (yellow centre pages)

What will I need?

- Your own copy of this Short Course book
- A portfolio (file or folder), into which you will put your evidence

Information for tutors

To download A Quick Guide to Short Courses, go to:
members.asdan.org.uk/my-courses/short-courses

This contains step-by-step guidance for delivering any Short Course, from registering with ASDAN to certification.



Recording Your Skills

Recording your skills

Next to each challenge is a set of tick boxes where you can record the skills you have been developing during the activity.

These help you link your achievements to the national standards for these skills.

Science activities provide an excellent opportunity to develop the skills of:

- Learning
- Teamwork
- Coping with Problems
- Use of IT
- Use of English
- Use of Maths

The importance of Key/Core Skills

These are an everyday part of adult and working life. You need to be able to make yourself understood when speaking and writing, planning your own learning, working with others, carrying out basic calculations and using information technology.

Every job needs some or all of these skills and they are just as useful in Further and Higher Education.

Learning

This skill is about how you manage your personal learning and development. It is about planning and working towards targets to improve your performance and reviewing your progress.

Teamwork

This skill is about how you work with others when planning and carrying out activities to get things done and achieving shared objectives. This will involve working with a group of people.

Coping with Problems

This skill is about recognising problems and doing something about them. It is about using different methods to find a solution and checking to see if they work.



Use of IT

This skill is about being able to make the best use of computers and other items such as printers, scanners and digital cameras. Being familiar with how to use this equipment is vitally important, not only in the workplace but also in the home.

Use of English

This skill is not only about how you talk to people but also about the ways you find out information and let other people know about your views and opinions. It also includes all aspects of writing and reading.

Use of Maths

This skill is about your ability to use numbers. If, for example, you've measured or calculated something you will have used numeracy skills. Being able to use numbers is a skill highly valued by employers; many of the challenges in this Short Course will give you opportunity to practise your numeracy skills.



Sample

Module 1
Human Machine



Module 1

Human Machine

Section A: Complete at least FOUR challenges over 10 hours (1 credit)

- 1** Use an infrared thermometer to map the skin temperature of either a person's face or arm and hand.
Present your findings as a coloured diagram and add labels to explain your findings.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

- 2** Collect diagrams from the Internet to show how short sight can be treated with spectacle lenses or by laser surgery.
Present the images in a way that clearly explains how laser treatment is a cure whereas wearing spectacles just treats the symptoms.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

- 3** Measure the diameter of the pupil of someone's eye in different light intensities. Repeat your measurements with one of their eyes completely covered.
Describe the patterns you notice in your results and suggest an explanation for your findings.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

- 4** Measure the effectiveness of at least three different materials at insulating against sound.
Design a pair of ear defenders that can reduce sound by 10 decibels. Provide test evidence to justify your design.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths



Module 3

Chemical Change

Sample

Module 3

Chemical Change

5 Use a spirit lamp containing different hydrocarbon fuels, and a beaker of cold water, to measure the heat given out by different fuels.

Find out how many carbon atoms are combined to form a molecule of each fuel. Describe the pattern between the heat produced by a fuel and the number of carbon atoms it contains.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

6 Make three different indicator solutions – from red cabbage, spinach and turmeric. Compare how each one reacts to changes in pH using dilute acids and alkalis.

Write a report to explain which indicator would be the best substitute for litmus solution.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

7 Observe the shape of a sample of different crystals and analyse their properties in terms of shape and symmetry. Look for patterns in your observations and test out your theories on how crystal shapes are determined.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

8 Other agreed challenge:

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths



Module 6

Performance in Sport

Sample



Module 6

Performance in Sport

Section B: Complete ONE or TWO challenges over 10 hours (1 credit)

1 As a group design a fitness test based on a shuttle run in a gym. Create a presentation to explain how the test could be used to measure the fitness of members of a hockey team. Include some model data in your presentation.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

2 As a group measure how far each student in your class can jump from a standing position. Investigate how closely the distance jumped correlates with the length of the student's femur. Analyse the results and present your findings to the class.

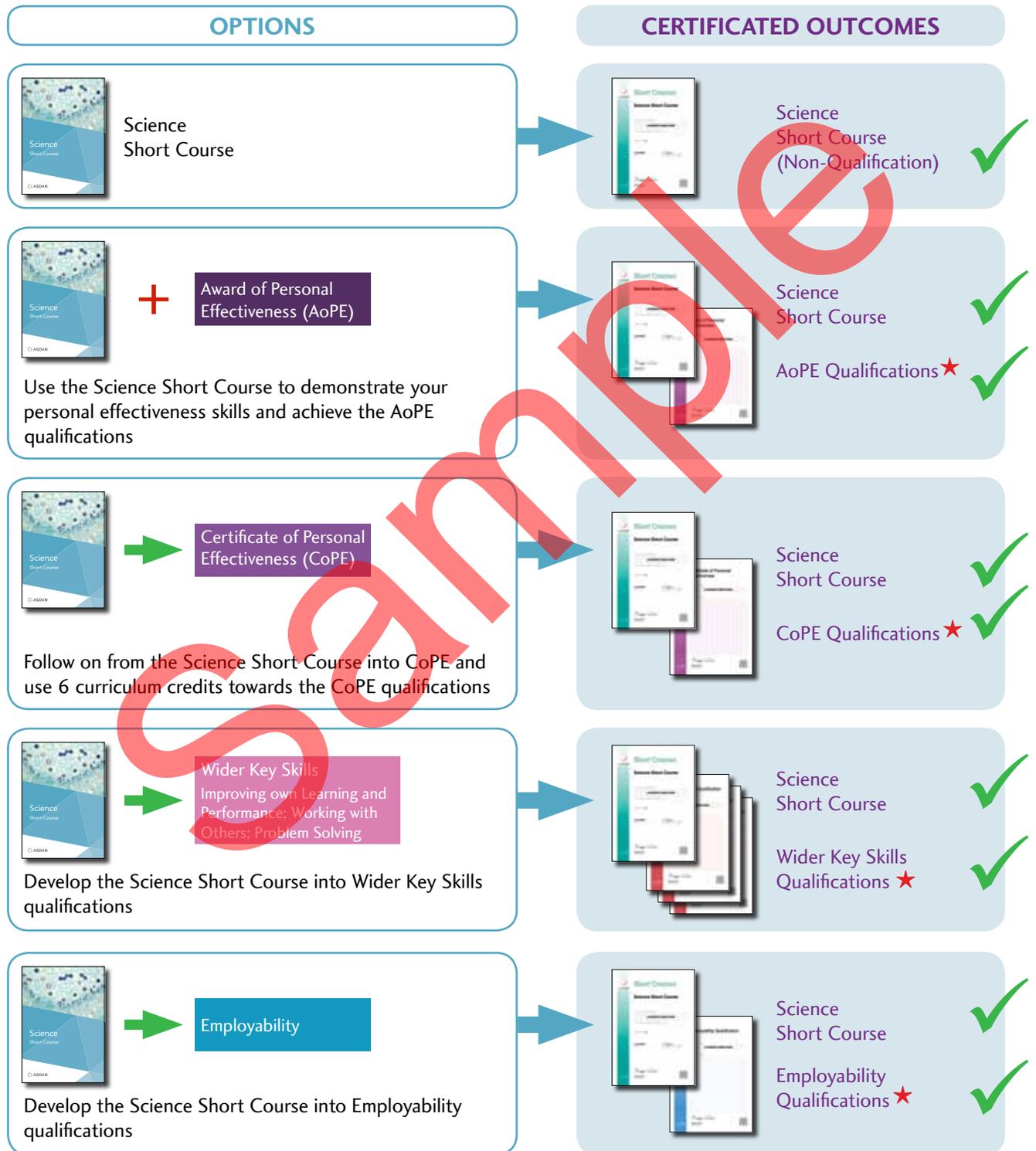
- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

3 Investigate the cooling effect of aerosol sport muscle cooling sprays. Think about the speed of cooling, the duration and the amount of cooling. Write a 'Which?'-style consumer report on which brand is best value for money.

- Skills I used:**
- Learning
 - Teamwork
 - Coping with Problems
 - Use of IT
 - Use of English
 - Use of Maths

Adding Value

Your Science Short Course is recognised with an ASDAN certificate, and has a credit rating to reflect the time you have spent on Science activities. This course can also be linked to other programmes and qualifications, which add value and give you further options for continuing to develop your skills and experience.



★ If you are aiming to achieve any of these qualification outcomes you should seek advice from ASDAN before starting your Science Short Course.

Sample



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