

WorldSkills London 2011

Teaching Resource Pack

Unit 9: Computing and Information Technology



worldskills
London 2011

Showcasing skills
that shape our world





Unit 9: Computing and Information Technology

Session Overview

Background

WorldSkills London 2011 competition will be held at ExCeL London from 5-8 October 2011

In this resource pack learners will:

- Visit a careers event and/or skills competition
- Obtain information relating to potential careers in specialist skills areas
- Use the information to reflect on possible career choices in the Computing and IT industry

Starter Activity:

Working in pairs, learners evaluate their understanding of the Learning Cycle by applying it to a careers activity.

Learning Activity:

Learners carry out detailed research into career pathways and job roles. In addition, learners carry out salary and wage calculations.

Reflective Activity:

Learners are encouraged to reflect on their involvement in careers research and the skills required. They are encouraged to think about setting and reviewing targets and any changes they would make to ensure they successfully complete all of the set activities.

Developmental Activity:

Learners review their role and their feelings and attitudes towards the task. They are encouraged to question and challenge themselves in providing an appraisal of the development of their knowledge and skills.

Note:

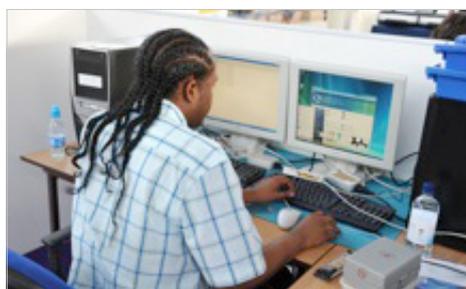
The activities featured in this teaching and learning resource are based on visiting an external event such as a careers exhibition and/or skills competition. The materials can of course be adapted for use in a variety of teaching and learning situations.



Learner Checklist

Learners can:

- Apply the Learning Cycle and the associated learning processes to carrying out research into careers.
- Reflect on their use of their skills and identify learning from their reflections of completing a careers activity.





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Session Planner

The following suggested plan is based around 4 x 60 minute practical activity sessions which could take place at a careers event or skills competition such as WorldSkills London 2011 (www.worldskillslondon2011.com).

The sessions focus on developing learners' research and investigative skills by encouraging them to identify potential career and job opportunities within the Computing and Information Technology industry. The activities can be adapted to focus on particular skill areas as required.

Topic	Timing	Learning Outcomes	Teaching Activities	Learning Activities
Session 1 Identifying careers in Computing and Information	60mins	Learners understand the process of carrying out effective research and can identify, obtain and record sources of information appropriately.	Facilitation of practical research at a careers event or skills competition.	Research and gather information on the types of job roles within given career categories.
Session 2 Identifying skills and qualities needed for careers in Computing and Information Technology	60mins	Learners can identify and produce a checklist of the skills and qualities required to undertake identified professional roles.	Facilitation of group discussion on the generic skills and qualities required to undertake professional roles.	Production of a checklist identifying job roles and responsibilities and the knowledge, skills and qualities required for the role.
Session 3 Calculating pay rates for jobs in the Computing and Information Technology industries	60mins	Learners are able to carry out routine calculations required to determine the yearly, monthly or weekly incomes for identified jobs after Income Tax and National Insurance deductions.	Review of mathematics underpinning salary/wage calculations. Provision and review of appropriate worked examples.	Research into wage/salary expectations for identified roles. Calculation of salaries/wages.
Session 4 Reflecting on learning	60mins	Learners are able to reflect on all aspects of the practical sessions and identify what they have learned.	Facilitation of paired/group activities around the Learning Cycle and reflecting on the learners experience of the practical activities.	Completion of set activities which encourage learners to reflect on their experiences and identify learning.



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Activity Brief:

In this section you will begin to research and investigate possible careers and job roles in Computing and Information Technology which are of specific interest to you. You will be given a project brief (see below) and will be required to complete a series of activities. Your tutor and/or advisors will be able to assist you.



Scenario

With over 150,000 people expected to visit the WorldSkills London 2011 (www.worldskillslondon2011.com), a new hotel is currently in development next to ExCeL London and is expected to be open to the public in the autumn of 2011. In order to manage the needs and expectations of its guests the hotel intend to develop and implement a high spec computer system using state of the art computer technology. In order to achieve this, the hotel will require staff with high level skills in Computing and/or Information Technology.

You have been assigned as a member of the human resources team at ExCeL London, and your role is to identify the particular jobs required to ensure that the hotel can provide and operate the most up to date computer system currently available. You have been asked to focus specifically on the job roles needed to design the computer hardware and software for the new system as well as jobs which focus on networking and maintenance of computer systems. You are required to obtain as much information as possible and present your initial findings by completing the tables below. You will then use this information to produce a more detailed report once you have completed your research.

The Computer Network Managers are responsible for ensuring that the hotel meets all the computing and IT required to ensure the smooth running of the hotel. This will include ensuring that the all computers are fully operational and maintained and that internet access is available throughout the hotel. You will be responsible for identifying the key roles in Computing and IT for which staff will be required and these could include Computer Technician, Computer Programmer/Software Developer and Web Designer, for example.

Thought Box:

There are many job roles in Computing and IT. How do you intend to obtain the necessary information? Discuss this problem with one of your peers. Produce a list of the actions you need to take to complete this project.

Thoughtbox:

Remember to keep a record of your discussions as the information obtained will help you with the activities in this unit.

Learning Outcomes

In this activity you will:

- Identify the range and type of job roles within computing and IT.
- Identify the skills and qualities required to undertake these roles.
- Work out salaries and wages.

Using the Learning Cycle

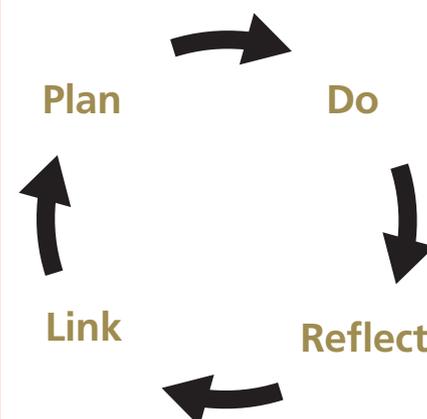
In this activity you will be applying the Learning Cycle to the given problem. Below is a brief description of the different stages as discussed in unit 4:

Doing: This involves carrying out and being aware of all the activities you are involved in during a project or task.

Reflecting: This involves looking back and summarising what you have done or what has taken place in the project or assignment.

Linking: This stage involves making links and connections with previous knowledge and/or skills and identifying possible solutions.

Planning: This will involve you identifying what you have learnt in order to make improvements, which involves reviewing and deciding the next steps, structuring what you do in a new way and setting targets.





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Starter Activity

By carrying out appropriate research at a careers or skills event (such as WorldSkills London 2011) identify the range of jobs for the following skills areas.

[Your teacher/ tutor and/or an Event Advisor can assist you with this at the event]

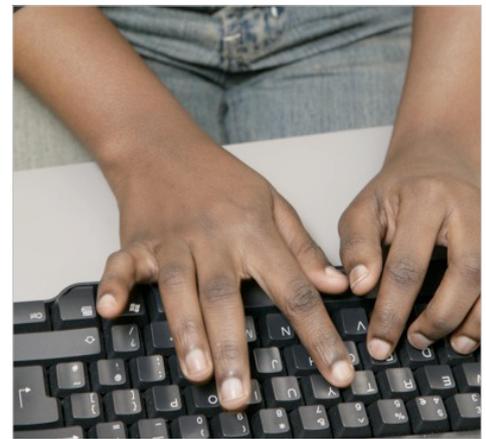


Skill area	Job roles
Computer Networking	
Computer Programming/ Software Development	
IT Support	
Web Design	

Thought Box:

What do we mean by roles and responsibilities? Is there a difference?

You will need to consult sources of information from a dictionary and/or the internet. Make a brief record of your findings. Your teacher/tutor will also discuss these terms in during the session.



Thought Box:

What are the health and safety issues associated with carrying out these roles?

Produce a list of any any safety measures that may need to be used.

Thought Box:

Do any of the roles listed interest you at this stage? What information do you need to find out about in relation to the job roles?



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Learning Activity 1

Activity

You are going to review the skills and qualities needed for a career in Computing and IT.

Have a discussion with someone at a careers or skills event (such as WorldSkills London 2011) who has a job that you are interested in. Find out what is involved in the job and the skills and qualities they needed to get the job. Repeat this activity for three different roles.

Record your findings in the table below:



Thought Box:

In your discussions what information are you trying to obtain? Why?

Thought Box:

In completing activities in this unit, you may find some key words which you may be not be familiar with. Consult a dictionary or ask your teacher if you are not sure about the meaning of these words.

	Job Categories					
	Computer Networking		PC Maintenance		Software Development	
Job Title						
Brief description of the job role						
Skills and qualities required for the job role						
Is the job role (Tick ✓)	Full-time		Full-time		Full-time	
	Part-time		Part-time		Part-time	
	Permanent		Permanent		Permanent	
	Casual		Casual		Casual	
	Temporary		Temporary		Temporary	



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Learning Activity 2

Activity: Pay rates in Computing and IT

In this activity you are going to find the typical rates of pay for those working in the Computing and IT industry. Typically, the information relating to pay may be quoted on an hourly, weekly, monthly or yearly basis.

Task

Using the information you obtained to complete activity 2(a) together with any relevant careers Information you have obtained, complete the table below. Remember that you are to record pay before any tax and national insurance deductions.

You must complete all sections of the table

Note: You may need to carry out calculations in which you convert from one pay rate to another

Ask your teacher or tutor for help with any calculations if required. A space is provided for any rough calculations you may need to make.



Thought Box:

You will need to carry out some calculations here and this is where you will see the importance of having good maths skills!

Use the space below
for rough calculations

	Job Categories		
	Computer Networking	PC Maintenance	Software Development
Job Title			
Hourly Pay (before Tax and National Insurance)			
Weekly Pay (before Tax and National Insurance)			
Monthly Pay (before Tax and National Insurance)			
Yearly Salary (before Tax and National Insurance)			



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Reflective Activity

This activity will focus on reflecting on your experience of carrying out research. It will help you analyse what went well with your research and areas you feel could have been developed further. Use the space below to record your thoughts on the planning and completing of the practical tasks set.

Name:	
Class/Year:	
Course/Subject:	
What research did I carry out and what information did I consider to be important?	
What were three main things I learned from taking part in this activity?	
What did I previously think was true, but now know to be incorrect/ wrong now that I have completed the activities?	
What did we not cover that I expected we should?	
What was new or surprising to me in preparing to host the event?	
What have I changed my mind about, as a result of working as part of a team?	
One thing I learned in organising an event that I may be able to use in the future is...	
I am still unsure about...	
Issues that interested me a lot, and that I would like to study in more detail	
What I most liked about this activity was...	
What I most disliked about this activity was...	
Other interesting facts I learned in completing my tasks as part of the project were.....	



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Developmental Activity

This activity will focus on getting you to review particular aspects of your role and your feelings and attitudes. You may find this section challenging!

DO ASK FOR HELP FROM YOUR TEACHER OR TUTOR IF REQUIRED!

What key ideas have I covered by completing the tasks for the careers event?	
What have I achieved in completing these tasks?	
What am I still unsure of after completing my tasks?	
What do I need to do to address the things I am unsure of?	
What do my partners in my team think of my role and contribution to the team?	
If I was to be involved in a similar task what would I do differently?	

For more information about our Education Experience Programme and how you can get involved please contact:

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