Introduction to S111

This item contains selected online content. It is for use alongside, not as a replacement for the module website, which is the primary study format and contains activities and resources that cannot be replicated in the printed versions.

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Contents

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1 Welcome to S111

Welcome to S111 *Questions in science* and, if this is the first module you have studied with The Open University, welcome to the University!

Questions in science is an introduction to science, based on asking questions. Scientists have enquiring minds and ask questions all the time. Albert Einstein, one of the most famous scientists ever, wrote rather humbly in a letter to a colleague, in 1952:

> I have no special talents. I am only passionately curious.
>
> Albert Einstein (1879–1955)

This quote is apt for this module as you do not need any special talents to study S111. Although you will need some maths and computing skills, the main requirements are time, curiosity and a keen interest to learn and discover more about science.

The module is designed around a series of 11 questions that form the title and subject of 11 topics, starting with 'Can you make a hole in water?' As you work your way through the topics you will:

- learn scientific principles and concepts
- learn and practise skills that will help with your study
- undertake practical work in all of the scientific disciplines covered in S111:
  - astronomy and planetary science
  - biology
  - chemistry
  - Earth and environmental sciences
  - physics
- learn how the sciences can be brought together to look at the world in an interdisciplinary way
- develop your ability to formulate your own answers to topic questions.

S111 is written as an online module, with hands-on practical experiments, and we hope that as you study this module you will appreciate the opportunities it offers in terms of multimedia and interactivity. We have really enjoyed putting this module together and hope that you enjoy studying it, but before you go any further it is important to check that you really are ready to study S111.

Activity 1 Am I ready to study S111?

You should allow about 1 hour for this activity.

Before you start, we would like you to consider carefully whether or not you are prepared to study S111. There are some essential maths and computing skills that you should be confident in before you study this module. But the most important thing you will probably need to study S111 is time, so do think carefully about how you will fit the time to study into your life.

Please take the time (even if you have already completed it) to complete the Are you ready to study S111? quiz again.

Then come back and answer one further question (note that this question is for your personal use and reflection only):

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2 Where to start

Working through this introduction will take you about 14 hours – a week has been allocated in the study planner. Doing the activities will prepare you well for your study of S111 and will also give you a sense of what it will be like to study an online module.

Starting a new module or qualification can be both exciting and daunting, but don't worry – you will find plenty of help and support.

Your tutor should be in touch with you by telephone or email so make sure you check your OU email regularly and be prepared for telephone calls from an unknown phone number – it could be your tutor.

Activity 2 Getting to know the OU

You should allow about 1 hour for this activity.

To get started and to familiarise yourself with studying science at The Open University, take a brief look at Your OU induction, where you will find a video introduction to science as part of the Science, Technology, Engineering and Mathematics (STEM) faculty. There is also a 'Survival guide' that has study tips from OU students. Although some of the tips relate to books, the same principles of notetaking and highlighting etc. apply to online materials.

Before you start on the activities, we thought you might be interested to hear from four of the S111 authors, discussing what inspired them to start studying science and where their study has taken them (Video 1).

Video content is not available in this format.

Video 1 Dr Nicolette Habgood, Dr Claire Kotecki, Professor David Rothery and Dr Mark Brandon, S111 authors, discuss what inspired them to study science. (2:54 min)

2.1 Questions, questions and yet more questions

It is common in science that trying to answer one question can raise more questions than answers. That's how science progresses – by asking questions, looking at the evidence, drawing a conclusion and then by asking questions of that conclusion and testing it again to see if it is worth retaining.

It is also common to hear scientists admit that the more they know, the more they realise how little they know, as they discover yet more questions for which they need answers.

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You will realise that science does not have all the answers, nor should it, since scientific research is based on new questions, progressing scientific ideas and theories. Many of the topics you will study combine more than one science discipline to answer the questions being posed. This *interdisciplinary* approach to science will help you to draw together your knowledge and think about each question in different ways, in a similar manner to how professional scientists treat their own research and how it is applied to challenges in the world around us.

The philosophy of S111 *Questions in science* is to get you thinking and questioning like a scientist. To develop your scientific thinking skills you will undertake a number of experiments, some of which you will design yourself. In addition to the experiments there are a variety of activities, including videos, audios and animations, all designed to engage you actively in your learning.

'I hear and I forget, I see and I remember, I do and I understand.'

Confucius, Chinese philosopher and reformer (551 BCE–479 BCE)

You will find that you learn much better if you interact with the module material rather than simply read it. This includes:

- taking notes as you study
- undertaking practical experiments
- doing all of the activities
- engaging in discussion with your tutor and peers
- participating in tutorials.

Your study of S111 will enable you to develop your independent learning skills. As you progress you will be able to ask questions and determine answers for yourself, based upon the concepts and knowledge you learn.

2.2 StudentHome

Every time you sign in to the OU website using your OUCU and password you should be automatically taken to StudentHome. Your StudentHome page is specifically tailored to your own needs and interests.

Activity 3 Exploring StudentHome

You should allow about 10–15 minutes for this activity.

Take this opportunity to explore StudentHome if you haven't done so already and identify the following areas:

- Profile – here you will find your own personal information, such as contact details. Make sure this is all correct.
- Study – this is where you will find key study links and tools for the modules you are currently studying.
- Library – your gateway to a wide range of online resources.
- Careers – here you will find out what Careers and Employability Services can do to help you plan and build your future.
- Community – the central hub for all things OU.

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- Help Centre – a very useful ‘one-stop shop’ for general advice you may need for your studies. Here you will also find disability support information.

You will cover some of the more important areas in StudentHome as you work through the material in this introductory week, including:

- help and support
- study skills
- computing skills
- notetaking techniques
- making notes online.

2.3 The S111 module website

S111 is studied online. There are no printed books or DVDs.

The S111 module website is where you will find all of the online study materials, activities, lists of equipment, material for practical experiments, and tutorial and assessment information specific to S111 (Figure 1).

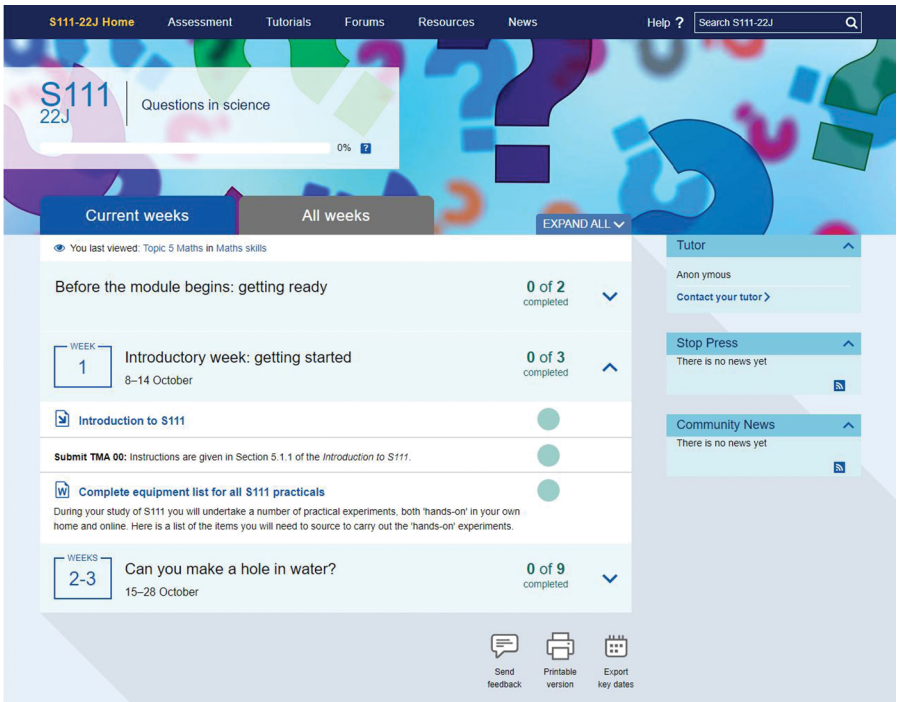

Figure 1 The S111 module website (showing week 1 expanded).

Activity 4 Exploring the S111 module website

You should allow about 10–15 minutes for this activity.

Take this opportunity to explore the S111 module website. Identify and explore the areas listed, adding a tick to the checkbox when you have done so.

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Additional information on using your module website is available in the Computing Guide.

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3 Support while you study

There is a lot of support available to you while you study S111, via:

- your tutor
- your Student Support Team
- tutorials
- forums
- library services
- computing support.

Do make the most of this support.

3.1 Your tutor

Your tutor will be in contact by phone and email, if they haven't already, to introduce themselves and welcome you to the module. So do watch out for an unknown number calling you, as it may well be your tutor.

You are one of about 20 students allocated to your tutor. You can contact your tutor by email, phone or by posting a message on your tutor group forum. They will:

- support your learning throughout the module
- mark your assignments and provide feedback
- provide tuition at tutorials
- help you achieve your potential in your S111 studies.

Your tutor is your first point of contact for any queries directly related to the content of S111, including assignments and tutorials.

OU tutors are extremely dedicated and want to help you with your studies, so don't hesitate to contact them for help or advice. Do be aware, though, that OU tutors often teach on several modules or at other universities and therefore only spend part of their working week supporting this module. Please have realistic expectations about how quickly your tutor can respond to any queries. Tutors are asked to check their email at least two or three times a week, and to let you know if they will be away from their email for more than three days. Often the response will be much quicker than this, though.

It is very important that you let your tutor know if there are any difficult or unexpected circumstances affecting your studies as soon as possible. They will be able to offer guidance and support to help you keep on track.

You can contact your tutor at any point during your studies for help with the study materials and for module-specific queries. For more general queries about OU study choices, student loans, etc. contact your Student Support Team.

3.2 Your Student Support Team

Your Student Support Team works with tutors to provide information, administrative support and specialist advice to students on a wide range of issues, including:

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- getting started with your studies, e.g. how to prepare and gain confidence
- disability, health problems or learning difficulties affecting your studies
- planning a program of study, such as what module to take next
- studying with English as an additional language
- any query you have regarding deferring or stopping your study of S111.

Further information about the role of your Student Support Team is available from the Help Centre.

3.3 Tutorials

Tutorial support on S111 is offered mostly through online tutorials. There are different types of tutorials designed to support you throughout your study:

- **Day school** – the face-to-face day school at the start of the module allows you to meet other S111 students, as well as S111 tutors, in person. It offers a general introduction to studying science at The Open University and some of the key skills needed. If you can't make the day school face-to-face, you can book onto the online day school alternative, delivered in your online tutorial room. Please note that the online alternative is delivered in two parts and you should sign up for both parts.
- **Tutor group tutorial** in your **online tutor group room** – this is an online tutorial for you, your tutor and other students in your tutor group. You will see the first of these tutorials advertised in the tutorial booking system once you have been allocated to your tutor. Your tutor will let you know of any others.
- Other **online tutorials** in your **online tutorial room** – these tutorials are open to students across a number of tutor groups. There will be a tutorial for each of the topics, as well as several tutorials on maths skills throughout the module.
- **Module-wide tutorials in your online module-wide room** – these tutorials are open to all students in your presentation. They will be more in the style of a lecture than facilitative, due to the number of students expected to book.
- **Labcasts** – these events are open to all students studying S111 and offer a great opportunity to engage with current research and topical issues in science. Links to labcasts are on your study planner and there is no need to book to attend.The series of labcasts will enable you to discover more about: interdisciplinary science, biology, chemistry, Earth and environmental sciences and physical sciences. These will be delivered by OU researchers and academics. Attending these labcasts may help you to decide your qualification pathway or choice of future career.

All online tutorials will be 1–1.5 hours long and use an online audio conferencing system. You will need to have access to a computer with a headset (i.e. headphones with integrated microphone) for your tutorials.

Tutorials are a valuable part of our modules and we encourage you to participate in as many as you can; you will find it invaluable to meet up with other students and share experiences and knowledge.

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Activity 5 Booking onto tutorials

You should allow about 10 minutes for this activity.

If you haven't already booked in for tutorials then please do so now. You can find the tutorial booking system from your StudentHome page. All tutorials have a written description and purpose and there may be a number of possible options for you to book.

Make a note in your diary so that you can plan ahead for tutorials that you have booked.

3.3.1 Online tutorials

Online tutorials take place in online rooms using Adobe Connect and allow you to talk 'live' over the internet to your tutor and other students from your module. Tutors can use online tutorials to give live presentations on an electronic whiteboard and explain concepts. You can use the other features – audio, chat, written messages and an on-screen whiteboard – to work together with other students and share software applications.

Taking part in an online tutorial may be a new experience for you, but don't worry, it will be the same for most of the other students in your group.

You may also have access to some recordings of tutorials. If you are unable to attend live or wish to review a tutorial you attended, these are excellent resources to help with your studies.

Activity 6 Getting set up for online tutorials

You should allow about 30 minutes for this activity.

To make the best use of your online tutorials you should acquire a simple, inexpensive headset that incorporates headphones and a microphone. These are available at most large supermarkets, any computing store or online for around £10–£15. A webcam is not required.

Before your first visit to an online tutorial you will need to download and install the relevant software known as 'Adobe Connect add-in' onto your computer. This process could take about 15 minutes or longer depending on your internet connection. You will also need to allow time to set up your audio equipment for the tutorial.

Go to Adobe Connect to find instructions on installing the Adobe Connect-add-in, a video that briefly shows how to set up Adobe Connect on your computer, and some of its features. This page also contains instructions on how to join online rooms, so familiarise yourself with this process now so that you are ready for your first online tutorial. If you have problems you should contact the OU computing helpdesk (see Section 3.6).

While you can join an online tutorial via a tablet or smartphone, they have only very limited functionality, so you may not be able to participate in several aspects of the tutorial. To

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ensure you get the most from the tutorial, we recommend you join online tutorials using your laptop or computer with a headset.

3.4 Forums

While studying S111 you will have access to electronic forums where you can post messages to ask questions or discuss the module or online activities. Forums are rather like a group email system or social networking site; you can send messages to a forum and these can be read by all members of the forum.

There are four types of forum in S111; the first three are accessible from the link in the top banner of the module website.

1. **Tutor group forum**
   - your tutor posts messages here and you can communicate with your tutor and other students in your tutor group
   - this forum is accessible only to your tutor group (about 20 students) and your tutor
   - it opens shortly before module start
   - it is the place where you post experimental results and comment on other student's posts
   - you should check the forum at least a couple of times each week.
2. **Cluster forum**
   - S111 tutors and students post messages here for a number of student groups studying S111
   - tutors post tutorial information
   - you can ask questions relating to the tutorials
   - you can chat informally with students other than those in your tutor group.
3. **Module forums**: these forums open and close at specific times:
   - *Module forum: Welcome* will be open for four weeks at the start of the module, where you can introduce yourself to your fellow students
   - *Module forum: 'Discover…'* series of tutorials, staffed by academics and researchers from that subject area, will be open around the time of the 'Discover more about'…tutorials.
4. **Qualification forum**
   - if you are studying for a qualification there is a qualifications forum on your Qualification website (accessible from StudentHome) where you can ask questions about your qualification and future module choices.

You may find it useful to subscribe to these forums by selecting the 'Subscribe' button at the end of the page. By subscribing, any forum posts will be sent to your chosen email account, so you can easily keep track of any new messages. However, if the forums are very busy this may overload your personal inbox, so you may prefer just to visit them at least once a week, rather than subscribing.

Please remember that the OU has a responsibility to maintain a friendly, supportive educational online environment where all students feel confident about participating in tutorials and forums. When working in shared online spaces, it is important that you

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respect and follow the guidance for appropriate conduct and content online in the OU Computing Guide.

3.5 Library services

As an OU student, you have exclusive access to a collection of online information resources via the Library Services website. These include academic books and journals, newspapers, encyclopaedias and dictionaries that will help you with your assignments, along with material to help you develop your general study skills (see below). If you are unsure about where to start looking for information, browse through the list of sources selected for your subject area in the 'Library Resources' section of the module website.

You can access the online library resources 24 hours a day, seven days a week, through your module website or directly through the Library Services website. You will need your Open University Computer Username (OUCU) and password to log in. We recommend that you explore the website as soon as possible to familiarise yourself with what is available.

Improving your skills

If you are new to using online information resources and would like advice about where to start then you may find the 'Getting started' section on the Library website useful.

There is a range of online training sessions available if you would like to make better use of Library resources in your studies. These include a session on how to find information for your assignments.

S111 also includes information literacy activities that will help you to find, evaluate and manage information. These will not only benefit your studies, but provide you with key workplace skills that employers value.

Getting advice and guidance

The 'Help and Support' section on the Library Services website includes a series of guides about using the online library resources, which provide clear answers to the questions that students most commonly ask.

The Library Services helpdesk is also available seven days a week to help you use their website and to advise you on finding and using information for your studies. Outside office hours, the helpdesk is staffed by librarians in the United States. Full contact details for the Library Helpdesk, including a link to 'chat with a librarian', are available on the home page of the Library Services website.

3.6 Computing support

You will find information about most aspects of using a computer for OU study from the *Computing help* link in the Help Centre. We particularly recommend exploring the sections on *Choosing hardware and software for your studies* and *Computing tips and techniques*.

Your computer may already have many of the general applications you need for S111 but, if not, the OU Computing Guide explains how to get a variety of software downloads and discounts. For S111 you may need to download the following:

- a compatible web browser, such as Mozilla Firefox or Google Chrome
- OU free access to Office 365

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- Apache OpenOffice, a free programme that includes a word processor and spreadsheet software
- Adobe Reader, which enables you to read files in PDF format.

If you can't find the answer to an IT problem in the Help Centre on StudentHome, the Computing Helpdesk may be able to help with:

- installing and running module software
- other OU IT services and applications
- usernames or passwords
- access to module websites and other online facilities.

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4 Studying S111

S111 is delivered entirely online and this may be a new and different way of studying for you. There are a number of skills that you can develop to help and later in this introduction you will learn techniques for reading and making notes online. The Computing requirements section in the module description provides key information regarding studying S111 online; in addition, there are some key tips for online modules:

Do you have a good enough internet connection?

You will require a reasonably fast internet connection. If you're still using dial-up (with a noisy modem that connects your computer to the phone line to use the internet), you should upgrade to broadband if you can, because a dial-up connection is too slow and will delay your study progress.

Search online for 'internet speed test' to find a website to test your connection, and follow the instructions. Make sure that there's no other activity on the line when you do the test. If the result is less than 1 Mbps you should investigate how you can improve things. For more information on your options see Choosing an ISP.

Two screens are better than one

Consider getting a second monitor or a larger computer screen. It isn't essential, but you'll frequently have both your web browser and your word processor open at once as you take notes on the module material or when you write an assignment. Many modern laptops, and some desktop machines can run a second monitor, and it's worth checking if yours does. You will need to be able to use the *extended desktop display* as the mirrored desktop mode simply shows the same material on both screens. You might be able to use an old monitor from a previous computer, or buy one second hand. Older monitors sometimes need an adapter to connect to your machine, and other technical problems might arise, so do some checking first.

If you have a small screen and can see only one window at a time you'll find yourself constantly switching from one application to another. See the article on Switching between open applications for efficient methods of moving between open applications. This site also gives advice on switching between apps on a tablet or other devices.

Use of a mobile phone, tablet device or Chromebook

It is also possible to access some module materials on a mobile phone, tablet device or Chromebook. However, as you may be asked to install additional software or use certain applications, you'll also require a desktop or laptop as described above.

4.1 Organising your study time

S111 is a 60-credit module equivalent to 600 hours of study, or 20 hours of study per week for 30 weeks. To help you pace yourself, each topic has been designed to consist of 40 hours study in total, spread over two weeks. Following every two topics there is an assessment week.

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Your pace of study may be different to that suggested, and different to your fellow students; for example, you may find some areas less or more challenging, or you may have to fit your study around other commitments. However, the 'timetable' set out should provide a well-paced progression through the material. Try not to fall too far behind the advised schedule. If you have any concerns about your study, contact your tutor straight away – **don't wait until it's too late**!

The study planner on the module website will help you to progress through your studies so that you don't miss anything. You can also use the bar at the top of the module website to help you track your progress as you study.

An important thing to do when starting a new module is to get organised. If you have done an Open University module before, you will already have some experience with distance learning and are probably aware of the challenges that it sometimes poses. You will also know that to make the most of an Open University module it is necessary to try to keep things under control, plan and manage time well.

Do not worry if this is your first module or if you sometimes struggle to get organised. Studying with the OU will help you develop time management and organisational skills, which will not only aid you in your studies, but will be of use in other areas of your life, such as in your workplace or at home. The important thing to remember is that planning your time and getting things in order is worth thinking about – the more control you take of your learning, the more likely you will be to succeed in your studies.

There are some things that you will need to study in addition to your computer and these are listed below:

- pens, pencils, eraser
- ruler
- notebook – this could be a paper notebook or electronic (see Section 6.5.1)
- file paper, or note paper
- graph paper
- scientific calculator
- digital camera or mobile phone with camera for taking photos of some of your experiments
- various items for practicals – you will find a list of the items needed for experiments in the practical tab for each topic.

4.2 Planning your study time

The amount of time each week that you will need to devote to your studies will vary slightly from week to week. In most weeks, you need to set aside around **20 hours** for your studies. This figure includes the time needed to complete both the **core (or directed) study** and the **self-directed study** tasks for each week. It is worth noting that the directed study to self-directed study ratio is 16 hours directed and 4 hours self-directed in 'topic weeks' and 4 hours directed and 16 hours self-directed in 'assessment weeks'.

Core study

The bulk of your study time each week (apart from assessment weeks) – **around 16 hours** – will be taken up with online S111 learning material, including all the activities. This core study includes:

- reading the online content

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- completing the online activities (around three to five per week)
- listening to and/or viewing audio and video material on the website
- undertaking practical experiments at home
- taking notes while you study
- engaging in collaborative activities via the online forums
- time spent in tutorials (not including the 'discover more about' tutorials, or travelling to and from the day school).

Self-directed study

In addition to your core study you will spend up to **4 hours** each week (apart from assessment weeks which will be 16 hours) undertaking self-directed study that includes:

- the time it takes to access the S111 website (e.g. setting up your computer and going online)
- the time spent in 'discover more about' tutorials
- communicating with your tutor or tutor group, or communicating with other students either via email or on the online discussion forums
- the time it takes to sort out and collate your files and notes at the end of a week's study
- reflecting on your study, such as assessment feedback
- brushing up on any study or maths skills
- any additional activities you may undertake associated with your Open University study of S111
- undertaking study of any **taking it further** material.

Taking it further

S111 also includes additional material for some of the topics, referred to as 'taking it further' (TIF). This material is not part of the core study of S111 and it is not assessed. It is included within the assessment weeks of the study planner in the module website. You may want to access this material:

- to find out more about a specific topic
- to inform your decisions on any future study intentions
- if you find you have some spare study time
- if you plan to follow a physics or astronomy and planetary science qualification (the 'maths TIFS' associated with Topics 7 and 8 are particularly important).

The aim of the next activity is to give you some tips on how to get organised and keep things under control with some forward planning using the study planner.

Activity 7 Noting key dates

You should allow about 20 minutes for this activity.

In planning your studies, it is very important first of all to look ahead and think of the module as a whole. S111 is spread over approximately 8 months.

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In order for you to plan for the weeks ahead, it would be useful to think about events in your life coming up and consider how they might affect your studies. Planning ahead helps you organise your time, enabling you to meet the needs of your studies while simultaneously managing your other commitments.

- Have a look at the online study planner or print a copy (scroll to the end of the study planner and select the printer icon.
- Highlight key TMA and iCMA cut-off dates.
- Add these key cut-off dates to your personal diary or calendar.
- Make a note of any personal significant events and commitments over the next eight months that may impact on your studies.

Have a look at the discussion to see the types of activity that could be noted.

Discussion

Here are some of the things that you might want to consider:

- holidays (do you have holidays planned already and how long will you be away?)
- significant events at work (such as deadlines or business trips)
- family birthdays
- medical appointments (either your own or those of close family members)
- weekends away visiting family or friends
- school holidays and half-term breaks
- computer availability at critical times such as TMA submission (e.g. if you have shared access to a computer).

Try to identify which events have flexible dates. While you can't change some dates, such as birthdays or a hospital appointment, you might be able to shift a visit to friends by a week or postpone a day out if they happen to clash with a key assignment deadline. Alternatively, you can complete your study ahead of schedule to stay on top of the cut-off dates.

4.3 Learning outcomes

The module has been designed to address eight objectives or 'learning outcomes'.

Universities and colleges, including the OU, use learning outcomes (LOs) to guide the development of their teaching materials and to help students get the most out of their learning experience.

LOs are statements of what you are expected to know, understand and be able to do after studying a module. There are two different categories of learning outcomes in S111.

- **Module LOs:** The module LOs are aligned to qualification pathways and to the formal assessment of the module; you will have the opportunity to demonstrate them in the assessment of the module. Clearly stated module LOs allow both you and your tutor to monitor your achievements – your tutor will refer to your achievement of relevant learning outcomes in their feedback on your assignments, which will help you to map your progress as you work through the module. Table 1 summarises the specific module learning outcomes for S111.

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- **Topic LOs:** The topic LOs are specific to each topic and are located at the beginning of each section in the topic introduction.

Table 1 Module learning outcomes.

Categories	Description	On successful completion of S111, you will be able to achieve the following module learning outcomes
Knowledge and understanding (KU)	Knowledge and understanding relates to an understanding of the main concepts, theories or principles associated with the subject.	**KU1** Show that you understand some key concepts and principles that underpin scientific knowledge.
Cognitive skills (CS)	Cognitive skills are mental skills used in the process of acquiring knowledge and understanding and analysing information.	**CS1** Demonstrate that you can use and manipulate data using appropriate graphical, mathematical and presentational tools. **CS2** Demonstrate an understanding of basic mathematical tools.
Key skills (KS)	Key skills concern your ability to communicate or use relevant information – essential skills that everyone needs to succeed in education and training and which are also very useful for work and life in general.	**KS1** Demonstrate an understanding of the scientific method, i.e. learn to ask questions that can be answered to support or refute a hypothesis. **KS2** Demonstrate the ability to write clearly to communicate familiar scientific ideas.
Practical and/or professional skills (PPS)	Practical and/or professional skills relate to your awareness and ability of practical skills related to science and to management of personal development.	**PPS1** Show that you can carry out an experiment by following simple instructions to make and record observations. **PPS2** Show the ability to work collaboratively through sharing data. **PPS3** Show that you can plan, and reflect on, your learning.

4.4 S111 Topics and skills

S111 consists of 11 topics that introduce and develop important concepts in the scientific disciplines of astronomy and planetary science, biology, chemistry, Earth and environmental sciences and physics (Figure 2).

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Figure 2 The 11 topics of S111.

The author of each topic will introduce themselves in an audio or video clip. The topic introduction lists the topic learning outcomes as well as giving an indication of the time required to study each part of the topic. You will find the topic introductions useful for planning your study.

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5 Assessment in S111

There are two types of assessment in S111 that assess the skills you acquire as you study S111:

- tutor-marked assignments (TMAs): there are seven TMAs which are word processed work that you send to your tutor via the electronic TMA (eTMA) system. The first TMA, i.e. TMA 00, is a 'dummy TMA' that carries no marks but allows you to practise using the eTMA system. There will be a suggested activity for you to undertake for TMA 00.
- interactive computer-marked assessments (iCMAs): there are ten iCMAs, which test maths skills. Each of these carries 1% of the total score for the module.

Both the TMAs and iCMAs provide an opportunity for you to demonstrate the skills gained in each topic and get feedback on whether you need to spend more time working through certain skills, such as the maths skills material, for example.

The marks you gain from each assessment go towards your final score, so you can see how you are progressing with each assessment you submit. This module does not have an exam and you have only one opportunity to submit each TMA and iCMA; there is no resubmission opportunity.

Table 2 shows S111 assessment information.

Table 2 Assessment information.

Assignment	Covering	Percentage
TMA 00	**Skills audit**	**0%**
TMA 01	Topic 1 and Topic 2	10%
TMA 02	Topic 3 and Topic 4	10%
TMA 03	Topics 5 and 6	10%
TMA 04	Topics 7 and 8	10%
TMA 05	Topics 9 and 10	10%
TMA 06	All topics	40%
iCMAs 1–10	Topics 1–10, respectively	10% (1% per iCMA)

As a level 1 module, S111 awards two grades of pass: a Pass or a Distinction. In order to pass the module you must achieve 40% of the marks available. Your level 1 grades do not count towards the classification of your degree. However, clearly the higher the grade you get in S111, the better prepared you have shown yourself to be for your next module. Students who get over 85% are awarded a distinction in recognition of their achievement.

The OU has a wide range of support on study skills to help you with your assessment, accessible from the Help Centre tab on StudentHome.

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5.1 TMAs

You can find a link to each TMA (once it is available) in the ‘Assessment’ area of the module website. The cut-off date by which you must return each TMA to your tutor is in the study planner and on your StudentHome page. The week of each TMA submission date is left free in the study planner (no other compulsory study is scheduled in that assessment week), so that you can focus on completing and submitting your TMA, though we recommend working on relevant TMA questions as you study if possible (see Section 5.1.2, below).

Note that TMA cut-off dates, i.e. the dates by which you must submit your work, normally fall on a Wednesday.

Engaging with *all* the TMAs is necessary to demonstrate that you are actively studying the module and achieving the module learning outcomes. Completing all the assignments also helps to reinforce your understanding of the module material and will help you to achieve a better mark for the final TMA. You will also be encouraged if you complete your TMAs as you will be able to calculate that your overall mark for S111 is gradually increasing.

5.1.1 Submitting your TMAs

There is no official form or template provided for S111 TMAs. You should use a word processor, such as Microsoft Word, to create a blank electronic document in which you write your answers to the TMA questions, clearly laid out and numbered. Please include your name and personal identifier (PI) number at the start of your assignment document.

If you don't already have Microsoft Word or some other word processing program installed on your computer, you can download similar programs, such as Office 365 or Apache OpenOffice, for free or at a discount. Go to the ‘Help Centre’ tab in StudentHome and select ‘Computing help’ then click on ‘Choosing hardware and software for your studies’ for help and information about choosing your word processing software. If you need help or guidance in using Office 365 and Microsoft Word, you can also find this in the ‘Computing help’ part of the ‘Help Centre’ by clicking on ‘Microsoft Office 365’ and following the links to the Microsoft Office 365 Learning Guides.

You should not submit your answers as scanned images of text, with the exception of equations or figures. However, you will be encouraged to develop your skills in generating equations and images using software during your studies.

You should name the file you submit to the eTMA service in a way that makes it clear what it is. For all S111 TMAs make sure you identify your work by putting your name, PI and TMA number along with page numbers at the top of the page. When saving your assignment to a file on your computer you should also use a file name that includes your name, PI, module code and TMA number (for example HandyStudentA1234567S111TMA01). You must submit your TMA in one of three file types for this module: those ending in *.doc, *.docx and *.rtf. Depending on the word processing software that you are using, you may need to use ‘Save as’ and choose your file type. You may lose some content or styles if you save as *.rtf.

Once you have completed and saved your TMA in the correct format you should submit it by the final submission date (cut-off date) shown at the start of the TMA. The eTMA service allows you to submit your TMA directly to the University 24 hours a day, up to and

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including the TMA final submission date. Your tutor will mark your assignment and return it to the eTMA service for you to collect.

There is an opportunity to practise using the eTMA system before TMA 01 is due by sending in a 'dummy file'. Submitting TMA 00 as a 'dummy file' also allows you to practise computing skills that you will use in future TMAs (e.g. word processing text, inserting tables and diagrams, saving files with appropriate file-names). Submitting TMA 00 also allows you to check that your tutor receives your TMA as you created it, and to receive feedback on the process from your tutor.

Your dummy TMA should include:

i. your name, PI number, module code and TMA number;
ii. the results of your PDP survey, from Activity 14 (see Section 6.7, below); and
iii. an image of your choice. We suggest either a photograph that you have taken yourself, or a screenshot of an image from any page of the S111 website. As good practice, you should give the image a caption that should briefly describe what the image is showing.

You should submit your dummy assessment via the 'Online TMA/EMA service' link on StudentHome. Click on the 'submit' button and full instructions will appear. Further information about how to submit your TMA can be found in the Help Centre.

Your tutor may review and return the TMA to you with feedback. Your reviewed TMA 00 can then be collected via the same 'Online TMA/EMA service' link, by clicking on the 'collect' button.

It is important you collect and read this feedback, as it will help you prepare for TMA 01 and future TMAs. The feedback from your tutor will come as comments added onto your TMA and as a separate Assessment Summary.

5.1.2 TMA content

TMAs 01–06 will consist of questions associated with the two preceding topics as well as a question on your personal development planning. There will be at least one question per TMA on an activity that you have already completed, including the practicals undertaken in one of the assessed topics.

Do try to complete the activities within the topics during your study, rather than waiting until just before the TMA cut-off-date, because it will save you time. Also in some cases, these activities require you to do something (such as post to a forum) by a particular deadline.

5.1.3 Plagiarism checking

The purpose of assignments is to assess your understanding and this can only be done if you submit your own work and you use your own words. For this reason, the following are deemed *plagiarism* and regarded as cheating:

- getting other people to provide you with TMA answers (by using online assignment writing sites, social media platforms or any private individual)
- copying from other students
- copying from books, articles or the internet
- copying text directly from the module materials.

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It will be important for you to ensure that anyone who reads your work can easily identify your thoughts and ideas on a subject, and can distinguish these from the thoughts and ideas of others. This is known as 'good academic practice' (see Section 6.3). You will develop your own writing skills and learn how to avoid plagiarism and reference your work during your study of S111.

You should not provide any assessment question to an online service, social media platform or any individual or organisation, as this is an infringement of copyright as outlined in the OU Academic Conduct Policy.

You should be aware that the OU uses text-comparison software to detect potential cases of plagiarism in work that is submitted for marking. These are:

CopyCatch, which compares work submitted by one student with that submitted by all other students on the module (as well as previous presentations of the module).

Turnitin, which carries out the equivalent of an internet search, looking for matches between the text included in a piece of work submitted by a student with all forms of information and resources publicly available on the internet. This is also used to compare students' answers with the module materials.

5.2 iCMAs

There are ten iCMAs. Each iCMA consists of five questions associated with the maths skills gained in Topics 1–10 respectively. You should attempt all the questions; there are three tries allowed per question. After each incorrect attempt, the maximum mark you can get for the question is reduced by up to a third, so take your time before additional tries and read the feedback provided if your answer was incorrect.

You have one attempt for each iCMA, but you do not have to complete the attempt in one sitting. You can leave the iCMA part way through and come back to it another time. If you leave the iCMA, your answers will be saved automatically.

You can find a link to each iCMA at the end of each topic and in the 'Assessment' area of the module website. The cut-off date by which you must submit each iCMA is in the study planner and on your StudentHome page.

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6 Skills developed in S111

As well as gaining knowledge of the sciences through the topics you will also develop a wide range of skills (Table 3).

Table 3 Skills developed in S111.

Skills	Description
Study skills	Study skills include: • computing skills • notetaking skills • good academic practice • digital literacy skills, i.e. using a computer to locate information and for studying online • developing a glossary.
Maths skills	Maths is an essential component of science and is taught throughout the topics of S111. When a new mathematical skill or concept is introduced you will be given the chance to try a self-assessment question first to check your level of confidence. If you feel you need more support then there are further in-depth resources available.
Practical skills	Each topic has some practical experiments. These experiments vary from being 'hands-on', for you to do yourself at home in your kitchen, to virtual on-screen experiments. These practical skills are an essential foundation for your development as a scientist.
Personal development planning (PDP) and employability skills	PDP and employability skills include problem solving, communication, collaboration, numeracy, digital and information literacy, initiative, self-management and resilience, commercial and/or sector awareness and global citizenship and recognising and reflecting on your strengths, which includes setting achievable goals for self-development.

As you study S111, your independence and confidence in your ability to study science will provide a firm foundation for your future progress towards your qualification, career or personal goals.

6.1 Computing skills

S111 is delivered entirely online. If you are relatively new to working with computers, you will find useful advice on computing skills in StudentHome.

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Activity 8 Improving your computer skills

You should allow about 20 minutes for this activity.

1. Go to StudentHome Help Centre.
2. Select *Computing Help* and then *computing tips and techniques* to bring up a really useful set of information to support your computer skills.
3. Reflect on your existing computer skills, knowledge and experience. Three key computer skills for S111 are:
    - safe and secure computing: it's important to be well informed and careful about computer security. Save your work regularly to guard against loss of your files and take action to keep internet-based intruders at bay
    - improving your use of email: most communications from the University to students are by email and they'll often require you to take some action, so it's important that we have your current email address. You can check and update it on the Profile page of StudentHome
    - how to organise your computer files: keeping files organised is an essential discipline if you don't want to waste time looking for lost files or having to redo work.
4. Are these areas that you need to brush up on? Make a note of resources that you may find useful in these or other areas, and either explore them now or come back to them when you need them.

Make the most of the tools on your computer to develop study habits such as:

- reading your module materials on your computer or mobile device, rather than printing them out
- taking notes online as you study.

6.1.1 Computer health and safety

As for any task that means being in one position for some time, it's important to make yourself as comfortable as possible when you use your computer to prevent discomfort and long-term problems.

Activity 9 Safe study at your computer

You should allow about 20 minutes for this activity.

As you will need to study for extended periods at your computer, it is really important for you to assess and make sure that your computer workstation area is safe for your needs. This is particularly important if you share your computer workstation with others in the household or if you have limited space around your computer.

Before you start studying, ensure you have considered your computer setup and your health and safety.

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Study Figure 3, which shows a safe working environment for computing work. Then sit at your own computer and complete the checklist, clicking on the box for a 'yes'. (Note: there is further information about adjusting your screen settings in the next section.)

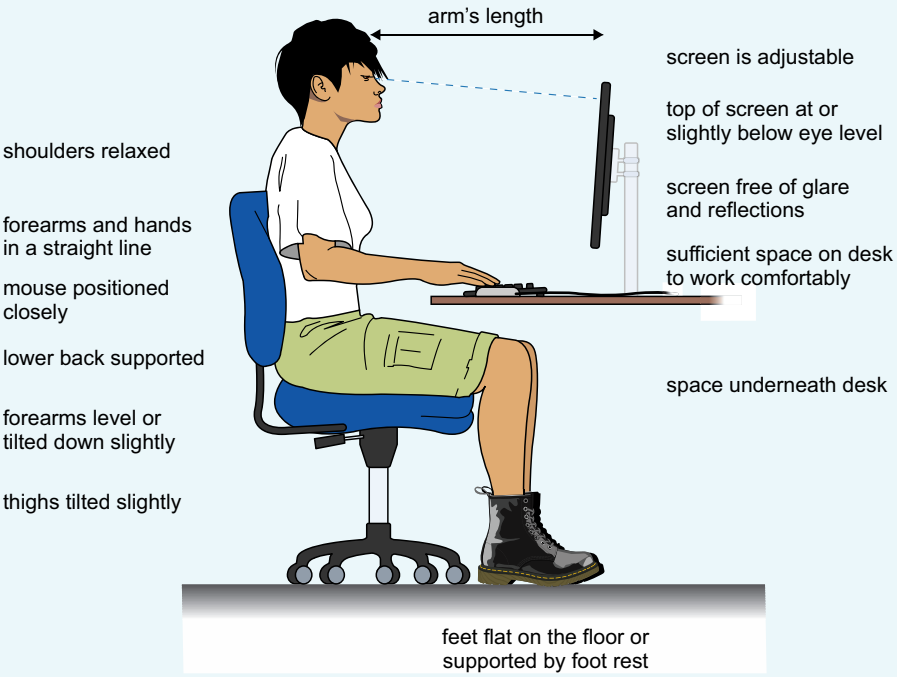

Figure 3 Safe study at your computer.

For a laptop or desktop computer

Interactive content is not available in this format.

Additional advice for laptops:

- only use laptops for short periods of time (up to an hour, unless the laptop is set up as a normal workstation with peripherals such as a separate mouse, keyboard or laptop raiser)
- limit the use of the laptop if you do not have a separate mouse, as excessive use of the trackball or glide pad may increase the risk of musculoskeletal injury.

Don't forget that if you share your computer with others then you may need to adjust your computer every time you study to ensure you are comfortable. More information and support is available through the Computing Guide on Protecting yourself.

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6.1.2 Techniques for reading online material

There's a lot of online reading to do in S111 and you need to make the process as comfortable as you can for yourself.

Activity 10 Techniques for reading online material

You should allow about 20 minutes for this activity.

Having adjusted your computer set-up to ensure maximum comfort, the next step is to customise your screen settings to improve legibility for reading online. Techniques for reading online material provides valuable resources: explore the materials and make a note of your top three tips for reading online, then take a look at the discussion below.

Discussion

Some of the top tips for reading online material may include:

- controlling the type size and font in web browsers, ebooks and PDFs
- adjusting page size
- setting special reader modes in internet browsers
- setting optimal screen brightness: a super-bright screen is not necessarily best as it may affect your sleep.

6.2 Notetaking skills

Taking notes is an important part of an active study strategy. By developing your techniques you can make sure that the time you spend on taking notes is really worthwhile.

If you just read passively while you study, you risk 'glazing over' – your eyes seem to skate over the text without registering what it says. In contrast, material you have thought about and made notes on is much easier to remember.

There is no right or wrong way of taking notes and it is really important that you choose a method of notetaking that works best for you.

Activity 11 Notetaking techniques

You should allow about 35 minutes for this activity.

We strongly recommend that you work through the Notetaking techniques in the Help Centre of StudentHome. Make a list of the techniques and note next to each item on your list whether it is one you have tried it in the past and found helpful or that you might like to try while studying S111. Then have a look at the discussion below, which summarises the list of notetaking techniques.

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Discussion

Useful notetaking techniques for recording and recalling information may include:

- mind maps
- line diagrams
- index or flash cards
- tables
- highlighting or annotating.

6.2.1 Making notes online

You may decide that you want to make your S111 notes online rather than in a handwritten form. Electronic notes have the advantage of being searchable and can include links to video and other resources. However, the danger of making electronic notes is that it is easy to fall into the habit of copying and pasting chunks of text into another file and calling them notes.

Active reading, with *active* notetaking (i.e. thinking about what you are reading and writing) is critical to understanding and retention. Try to rewrite the text in your own words so you're sure you understand it and are more likely to remember it.

Activity 12 Making notes online

You should allow about 30 minutes for this activity.

'Making notes online' under the Help Centre of StudentHome tells you about making notes in browsers and PDFs, and describes some of the software that can help you. Included in the 'Making notes in browsers' section is some information on how you can use a variety of current online annotation tools to mark web pages with highlights and comments. Spend about 30 minutes working through the 'Making notes online' article.

6.3 Good academic practice

You will be required to write answers to questions as part of your assessment in S111. While you won't be required to write lengthy amounts of text you will be required to write answers that are clear to your tutor who will be marking your work. In fact, one of the learning outcomes for this module is the key skill of *Demonstrate the ability to write clearly to communicate familiar scientific ideas.*

You will need to develop your language skills, and specifically, your academic English, in order to:

- understand and make the most effective use of your study of S111
- develop scientific language
- interpret assignment questions

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- write well-structured and coherently presented assignments, without plagiarism
- communicate your needs to your tutor and work collaboratively with other students.

The following are essential key skills for communicating clearly in writing:

- punctuation
- using the right words
- writing concisely.

For more information on these skills see: Punctuation, using the right words and writing concisely.

You will develop and practice your academic English skills as you study S111. Helpful information including:

- a description of the level of English that is expected of you during your studies
- tips and activities for developing your basic English
- tips and activities to help you express your ideas well

can be found at Developing academic English in the Help Centre of StudentHome.

A key skill in developing good academic practice is avoiding plagiarism.

Activity 13 Avoiding plagiarism

You should allow about 20 minutes for this activity.

In the Avoiding plagiarism pathway you will learn to recognise what plagiarism is, the forms it can take and how to avoid it by developing your skills.

6.4 Maths skills

Listen to Audio 1 on maths skills in S111.

Audio content is not available in this format.

Audio 1 Laura Alexander introduces maths skills in S111. (3:19 min)

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6.4.1 Units of measurement

You will already be familiar with many units, but how do you know which ones to use?

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In science the units used are known as SI units; this is an abbreviation of ‘Système Internationale d’Unités’ (International System of Units). In 1960, an international conference formally approved this set of metric units as standard, so replacing the many different national systems of measurement that had previously been used in science. The advantage of having a standard set of units is that everyone uses them, and there is no need to convert laboriously from one system to another to compare scientific results in different countries.

In SI, there are seven ‘base units’, which are listed in Table 4. Surprising as it may initially seem, every unit for every other kind of quantity (speed, acceleration, pressure, energy, voltage, heat, magnetic field, properties of radioactive materials, indeed whatever you care to name) can be made up from combinations of just these seven base units. For instance, speed is measured in metres per second.

You will cover this in much more detail later. For now, just look at the first three units that you are almost certainly familiar with: the metre (for measuring length); the second (for measuring time); and the kilogram (for measuring mass).

Table 4 The seven SI base units.

Physical quantity	Name of unit	Symbol for unit
length	metre	m
time	second	s
mass	kilogram	kg
temperature	kelvin	K
amount of substance	mole	mol
electric current	ampere	A
luminous intensity	candela	cd

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Note that the kilogram is actually the standard unit of mass, not of weight. We will cover this in more depth later in the module; for now, just remember that in science we generally talk about mass, rather than weight.

6.4.2 Writing units

Presentation is important in maths and there are specific conventions that you will become familiar with. In particular, case and spacing are important (although you will find many journalists get these things wrong).

For example, only one of these four ways of writing seven kilograms is correct.

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You will meet many different units as you study this module. Start to make a list now. As you come across each unit, note down its full name, the correct symbol, and the physical quantity it measures.

6.4.3 The equals sign

The equals sign has a very specific meaning, and needs to be treated with care in calculations. Two things are only equal if they are exactly equivalent, and that includes having equivalent units. Misusing the equals sign will cost you marks. Here are some common errors students make:

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Interactive content is not available in this format.

6.4.4 Calculators

You will need a calculator to study S111. It is very tempting to use the calculator on your phone, tablet or computer. However, if you continue your science studies beyond this

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module, and have to take exams, you will find that you cannot take a phone, tablet or PC into the exam with you. All calculators are slightly different, and you will make far less mistakes if you are familiar with the one you are using in your exam.

If you don't already have a separate calculator then it makes sense to buy one now and start using it. You can get the type of calculator you need in any big supermarket or stationers. It should not be a programmable or graphic calculator, just a scientific calculator described as suitable for GCSE/A Level/Higher, etc.

6.5 Practical skills

There are many practical experiments throughout S111; some are 'hands on' experiments that you perform in your kitchen at home and some are virtual experiments that you undertake on the computer.

If you are unable to undertake the experiments, an alternative way is usually provided to allow you to still achieve the same learning outcome associated with the experiment. However, we strongly advise that you do undertake the experiments because one of the key ways of learning is by *doing*. There is nothing quite like performing an experiment for yourself and getting your own results.

The practicals are all described using a similar format, illustrated below in Figure 4.

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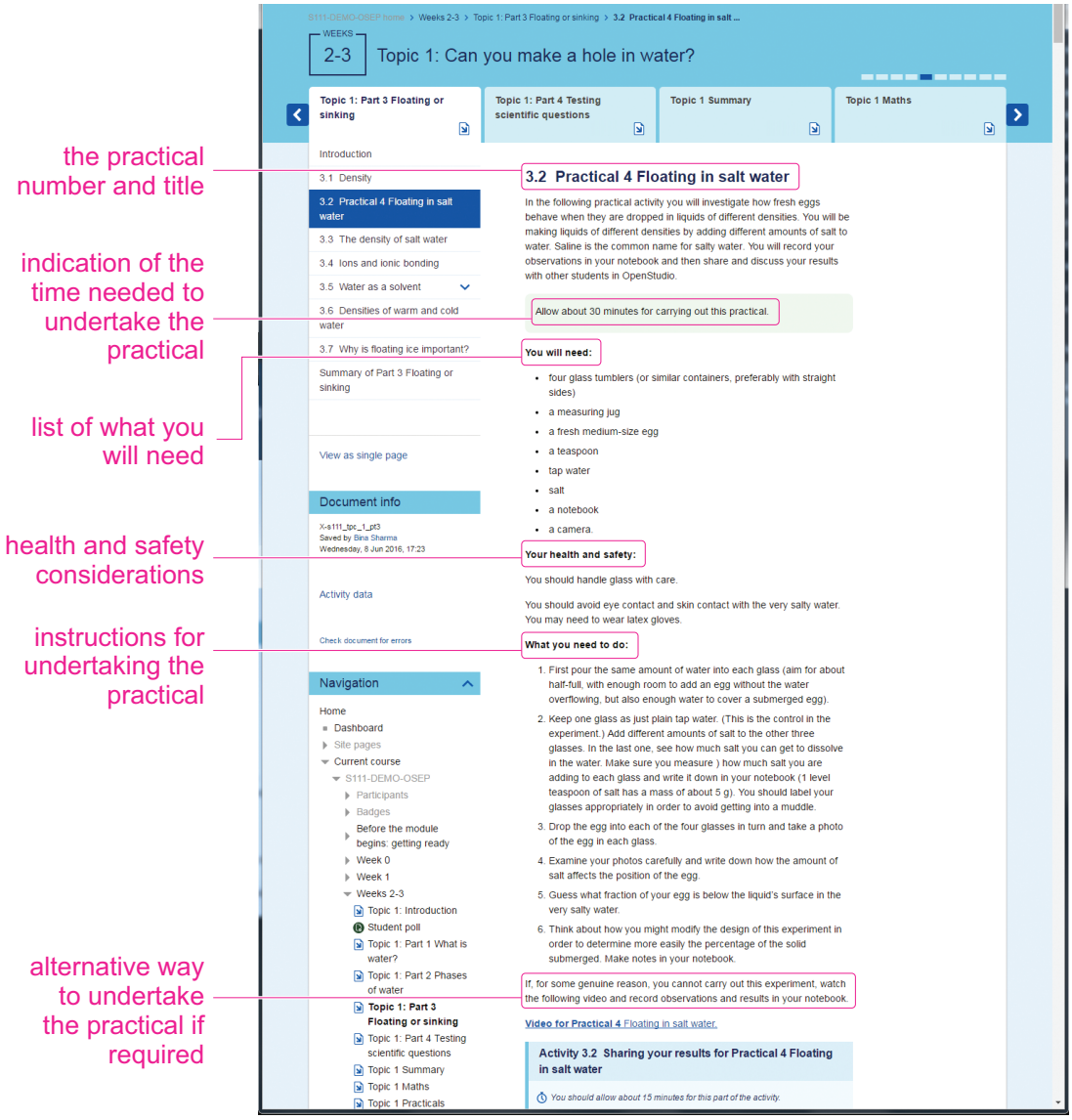

Figure 4 The standard format for the practical activity instructions in S111.

It will be important to consider your health and safety as you undertake the experiments in S111. You will learn how to assess risks and hazards and to ensure that you minimise any possible dangers.

The next section is a guide to a key part of any practical work – the laboratory notebook.

6.5.1 Guide to keeping a laboratory notebook

Keeping a good record of your experimental work, whether online activities, or home-based, is an important skill for scientists, and a well-kept notebook is important for good scientific practice. It is important that experimental work is written up in sufficient detail in a notebook such that another scientist could follow and reproduce the work.

An experimental notebook is a diary of your activities and thought processes as you performed an experiment, from planning through to recording observations, to drawing

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conclusions, and noting any particular issues that have arisen. Record-keeping will allow you to demonstrate exactly what was done to arrive at the conclusion drawn.

Notebooks

You will require a notebook for your study of this module. If you like to use a paper version, it should be of good quality, and preferably hardback. You may use an ordered online method of keeping notes instead (such as Microsoft OneNote).

A well-maintained and properly documented notebook establishes a permanent record of methods and results that can be used in the preparation of reports and scientific papers and is an invaluable source of information. For example:

- professional scientists often use detailed notes to prove claims of discovery where new inventions or patents are concerned, and will use the notes to show that standards such as ethical integrity and good practice have been followed
- for commercial laboratories, detailed notes are essential for client checks and good record-keeping ensures that the integrity of the data will withstand any legal scrutiny
- managers overseeing scientific experimentation or processes may need to audit the work of others.

A full understanding of the relevance and utility of notebooks is therefore also a key employability skill.

In S111, a well-kept practical notebook will have benefits when you have to produce reports of experiments or investigations. This will be much easier to do if you have a written record of the important information in an easily located place.

It is perfectly acceptable to use a digital camera to make a digital image (jpg/jpeg) for insertion in electronic documents, or to print the images and stick them into a paper notebook – it is worth spending a little time to make sure that you get a good quality image that shows sufficient detail; bright natural light and a device to steady the camera are often helpful.

6.6 Collaborative skills

During S111 you will hone your collaborative working skills. You will be working with other students studying S111 by contributing to discussions on the forum and by using a very simple online environment called OpenStudio. This is a tool that has been specially created by The Open University so that students can upload and discuss images that they produce as part of their study. OpenStudio is easy to use and you can learn from looking at the work of others, just as others can learn from you.

You will learn how to use OpenStudio in Topic 1. Using a digital camera will make it easier to upload your photographs.

6.7 Personal development planning (PDP), Employability and FutureYOU

Studying at university will allow you to develop study and transferable skills, while gaining experience and confidence and advancing your knowledge and abilities in your chosen subject area. These skills will also enhance your employability.

This section will introduce you to personal development planning (PDP), which is a process of recognising and reflecting on your strengths and skills and setting yourself

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achievable goals for self-development. It is important to complete the activities in this section as you will submit your PDP survey as your 'dummy TMA' (TMA00) and then reflect on this activity for part of your first formal S111 assignment (TMA 01).

Alongside the PDP and employability resources in S111, the University also has FutureYOU – a professional development planning tool that you may wish to use.

6.7.1 What is PDP?

This video introduces you to the PDP process and highlights how it can be used to develop different aspects of your life.

Video content is not available in this format.

Video 2 What is personal development planning?

Every time you recognise your achievements to date, identify areas for development and plan how to meet future goals, you are planning your personal development. PDP is something you probably do on an informal basis all the time, without really thinking about it.

Think of something you feel proud of having recently achieved, for example getting a new job, learning to drive or organising an event.

- What kind of things did you have to do to achieve your goal?
- You probably had to do one or more of the following:
  - find information
  - break down the task into smaller pieces and plan what you needed to do
  - use your organisation skills to meet your goals, manage your time and work to deadlines
  - communicate with others
  - cope with responsibilities.

  These 'transferable skills' can be used in lots of different situations, including supporting your studies. S111 will give you the opportunity to develop a range of transferable and study skills, including: numeracy, writing, IT and investigative science skills.

The OU provides guidance and a variety of opportunities to plan your own learning and personal development in a structured way as you progress through your qualification. It is **your** personal development and it is **your** responsibility to engage with this process.

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6.7.2 Why is PDP important?

Each one of you will have decided to study S111 for individual reasons and have different goals. You may be studying for your personal interest, to move into employment for the first time, to change career, to develop or progress in your current career, or perhaps you will decide what your longer-term goals are as you study. Whichever of these applies to you, PDP can help you get the most from your time at the OU. PDP will help you to:

- identify and work towards personal goals
- make you more aware of your abilities so that you can articulate and evidence these to others
- increase your confidence
- help you recognise opportunities
- improve your employability by gaining and developing skills and applying these to different situations and roles.

At The Open University, the definition of employability is:

A set of capabilities and achievements that support students in developing their careers, raising their aspirations and enhancing their contribution to society.

Video content is not available in this format.

Video 3 Introduction to Employability at the OU (1:25 min)

Employability skills are composed of core skills and competencies, personal attributes and having an awareness of the labour market. The ten employability skills used at The Open University are displayed in Table 5, and you will reflect on these in your studies. Further discussion of employability and definitions of each of these skills can be found on the FutureYOU website.

Table 5 Key employability skills

Core skills and competencies	Personal attributes and behaviours	External awareness
Problem solving	**Initiative**	**Commercial and/or sector awareness**
Communication	**Self-management and resilience**	**Global citizenship**
Collaboration	**Self-awareness**	
Numeracy		
Digital and information literacy		

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Many of the employability skills listed above overlap with the S111 module learning outcomes. The S111 employability map gives some specific examples, which you will have the opportunity to develop throughout your S111 studies.

These transferable skills are also important in voluntary work, study, hobbies and your personal life. The information you gather during the PDP process will help you to start identifying your employability skills.

6.7.3 The PDP process

Personal development planning involves five main steps:

1. **Identify** area(s) for development – what skills do you want/need to develop?
2. **Plan** what to develop – what are realistic goals? SMART action planning will help you with this.
3. Take **action** – carry out the tasks you have set yourself in your plan so you reach your goal.
4. **Record** achievements – record the progress you have made, the skills you have gained and the evidence for this.
5. **Review and evaluate** – what have you learnt? What would you do the same? What would you do differently? Identify the next area or skill for development.

Step 1 Identifying area(s) for development

To help you start the first step in the PDP process you will complete a short survey that focuses on some skills you will need for your studies. As well as identifying your current skills level, completing this survey will help you identify key skills for you to develop and goals for you to work on. These may form the basis of short- or medium-term goals to help you progress your long-term personal goals. They could be fairly small and specific, such as improving your skills in maths, IT, time management, communication, organisation or notetaking.

Activity 14 PDP skills survey

You should allow about 20 minutes for this activity.

For this activity, you will carry out a short PDP skills survey. Your tutor is going to see this. It is best to be honest, but not to over-think this.

The skills in the left-hand column of the table are ones that you will be developing throughout your studies on S111. Think about your experience – how confident are you in using these skills?

Once you have completed the survey, save the results, and submit a copy of the survey to the OU's eTMA (electronic tutor-marked assessment) system as a 'dummy eTMA' (TMA 00).

Keep your survey safe as you will use this information in some of your S111 assignments. For example, your reflection on this activity will be submitted as part of your first tutor-marked assignment (TMA 01).

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Step 2 Action planning

Once areas have been identified for development, the next step is to create an action plan. This means taking a few different steps:

- setting out your goals
- deciding which actions you need to take
- identifying resources to help you and any constraints
- working out how you will identify when you have completed your action
- setting a realistic timescale to achieve each step.

When completing an action plan, it can be helpful to consider a SMART approach.

Table 6 The SMART approach.

SMART		Example
S	**Specific** – clearly define your goals.	I will improve my timekeeping and organisational skills.
M	**Measurable** – decide how you will know when you've completed your goal.	I will submit my first TMA on time.
A	**Achievable** – can you achieve your goal? Do you have the resources in place to achieve your goal?	I will print out the study planner to help me achieve this goal so I am aware of the deadlines. I will allocate time each week in my diary for my studies.
R	**Realistic** – how important is the goal, and is it really achievable right now, or do you need to break it down into smaller steps first?	I feel this is realistic. To help me ensure it is achievable, I will review how I am getting on each week and allocate more time as required.
T	**Time-limited** – give a deadline for achieving your goal.	Deadline – first TMA submission date.

Activity 15 Your Personal development action plan

You should allow 20 minutes for this activity

Save the Personal development action plan to your computer. Fill in the form with two or three goals (or more if you wish) that you would like to achieve in relation to improving your study skills during S111.

When you fill in your action plan, for each goal:

- decide which action(s) you will take
- identify any constraints
- identify resources to help you
- identify your success criteria
- set a realistic timescale to work towards.

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Resources are available from the Student Help Centre to help support you achieve your goals with advice on study skills and careers.

(Please note there is NO exam in S111, therefore the section in study skills on exam preparation is not relevant at this stage in your study.)

Step 3 Take action

Once you have written your action plan, don't just file it away and forget about it. Now it is time to take action and follow your plan. For short-term goals, you may want to look at your plan each week to check you are on track. For medium and longer-term goals, the action plan can be checked less frequently, say once a month.

Check your action plan regularly to add new goals as needed and make changes if required.

Step 4 Recording achievements

An important part of the PDP process is keeping a set of personal records of your achievements. These help you monitor your own progress and also provide you with evidence that demonstrates your skills and experience.

When you attend interviews for jobs or training places, or provide a CV, you will be asked how you have demonstrated the required skills. You can use the evidence you have collated in your personal records to provide practical evidence of your skills, such as your ability to communicate well, solve problems, collaborate with other people or plan and report on a project.

A learning log can be a useful tool to gather information. It is a bit like a diary or portfolio that you can use to record key events, experience and information. Often a table format is used; an example is shown in Table 7. Using a learning log also starts the process of reviewing and evaluating your experiences.

Table 7: Example table that could be used in a learning log

Question or prompt	Your response
Date of event	
Your experience, situation or event	
What you did	
What you learned from the experience, situation or event	
From this reflection, what – if anything – would you do differently?	
What actions, with timescales, are you going to put in place?	

It's worth thinking how you will keep evidence of your progress and skills together. You may wish to consider using learning logs. Alongside this, you may find the following records useful:

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- **PDP:** your regularly updated action plans
- **study/education information:** feedback from your tutor, activities from modules, other education courses, informal learning
- **employment:** work experience, employment history for paid or voluntary work, job descriptions, notes for your CV
- **about you as a person:** skills, experiences, achievements and responsibilities.

Step 5 Reviewing and evaluating your development

As you progress through S111, you should go back regularly to your PDP action plan to record your new skills and achievements and check that you are still on track to reach your goals within the time you specified in your plan. The following questions will help you review your development:

- What actions have you taken so far to achieve your goals?
- How well have your actions met your goals?
- How realistic were the goals and do they need to be changed?
- What feedback have you received from other people, and how have you used it?

Remember, goals and actions are not fixed, they should be monitored, reviewed, changed and added to over time as your plans change.

Actively reflecting on your own performance in this way is the first step to becoming an independent, self-motivated learner.

Later in the module we will ask you to reflect briefly on the skills you have gained as a result of your studies, and your progress towards your goals.

If you are interested, further resources to support PDP are available.

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7 Accessibility

We have tried, wherever possible, to make module materials and activities accessible to all students. More information about the accessibility of S111 is provided in the Accessibility Guide, available from the Resources part of the S111 website. You are encouraged to read this especially if you have a disability, long-term health condition, specific learning difficulty (such as dyslexia) or mental health difficulty, so we can offer you support in completing your studies.

General information on accessibility of module websites is available from the Computing Guide.

If you have a disability and require materials in a specific, accessible format that is not provided through the module website, visit the Disability support website (also available via the link on StudentHome), where you can find out what further support and formats are available. You can also contact your tutor or your Student Support Team to discuss your requirements.

It is your responsibility to ensure that information regarding any additional requirements you may have is known to the University and associated with your student record so that your tutor and others are aware of your needs and any additional support can be put in place in good time.

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