



COMMONWEALTH OF LEARNING

THE WILLIAM AND FLORA  
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# Open Educational Resources (OER) for Open Schooling Teachers' Guide





# **Open Educational Resources (OER) for Open Schooling Teachers' Guide**



COMMONWEALTH *of* LEARNING

The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to encourage the development and sharing of open learning and distance education knowledge, resources and technologies.

Commonwealth of Learning, 2012



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# About This Manual

Welcome to the JSC OER Teachers' Guide. The Commonwealth of Learning (COL) Open Schools Initiative launched an Open Educational Resources (OER) Project to provide materials under the Creative Commons license agreement (see copyright page) to support independent study in 20 specially selected secondary school subjects. This JSC OER Teachers' Guide has been developed to guide teachers/instructors on how to use the Open Educational Resources (OER) in five of these courses.

Open Educational Resources are free to use and increase accessibility to education. The materials discussed in this guide are accessible for use in six countries: Namibia, Botswana, India, Lesotho, Trinidad & Tobago, and Seychelles. Other interested parties are invited to use the materials, but some contextual adaptation might be needed to maximise their benefits in different countries.

The content in this guide is divided into three parts:

## **Part 1: An Overview of Distance Learning Techniques**

This part discusses different ways of teaching and learning at a distance.

## **Part 2: Background**

This part will give you a general introduction to distance learning and the purpose of this manual.

## **Part 3: An Overview of OER Materials**

This part is divided into different sections, each discussing subject-specific information.

**Section 1:** focus on the use of the English Open Educational Resources (OER).

**Section 2:** focus on the use of the Entrepreneurship Open Educational Resources (OER).

**Section 3:** focus on the use of the Geography Open Educational Resources (OER).

**Section 4:** focus on the use of the Life Science Open Educational Resources (OER).

**Section 5:** focus on the use of the Physical Science Open Educational Resources (OER).

We hope that you will find the content of this guide useful.

# Preface

“What do I know about open education resources and distance learning?” I asked myself as I sat down to assemble some key ideas for teachers who work in places I have neither seen nor even know much about.

Then I realised: “I know that both of these things are keys to educational change and social reform on a global scale.”

I contemplated the sheer magnitude of what we as educators face in the world today. It can be overwhelming in so many ways. But this is a simple educational guide and not a manifesto, I told myself. Still, I cannot separate the writing of this work from the purpose at the heart of it: The importance of freely sharing information, of engaging in collaboration without being bound by borders, and of helping to reach learners who have until now been limited by a range of problems, from meeting their basic living needs to having basic access to education.

In recent years, rapid technological change has greatly affected the larger social and cultural context. Technological advancement has become a dominant theme in education, in spite of a systemic hesitancy to embrace that which might be transient or unproven in application. Initially, technology dominated and, perhaps, distracted conversations about learning. Recently, it has become pervasive to the point of acceptance. As a result, it is being pushed out of the spotlight of educational dialogue; a necessary and important shift to “how we teach and learn” through technology is the new focus. From this shift, a vision for what is being hailed as “21st-century learning” has emerged.

What exactly is 21st-century learning? The simple answer would be to say that it is what we have now and what we will have going forward. But that would be inaccurate on two counts: We have not arrived at where we want to be, and when we get there, we will most certainly not stop and believe our work to be finished. At the time of writing, 21st-century learning remains an expressed ideal, a vision for the decades ahead of us, rooted in significant and systemic change in educational practice.

At the heart of the vision is the need to educate citizens so that all may thrive in a knowledge-based society. Education must be personal and global at the

same time — learners need to be able to develop a unique path of learning that will suit their needs, interests and context while obtaining the skills that will allow them to engage in and contribute to a new collaborative social order.

For this vision to be realised, the roles of both teachers and learners must change. What is learned needs to become less important than how or why it is learned; knowledge acquisition needs to move in the direction of discovered, shared and created content; learning assessments need to effectively map the journey of learning, and not just final outcomes.

Above all, through personalised learning, we must promote unique learner paths that are relevant, motivating and engaging, and that extend beyond the real and mediated walls of both traditional and virtual classrooms.

And here is where we begin. How is this to be done?

It is widely accepted in the field of distance learning that how we teach students who are in a face-to-face setting only part of the time, rarely or not at all requires unique considerations and alternative approaches. Some of these instructional approaches are the foundation of this particular guide. On a broader scale, a significant shift in educational thinking is leading to a re-examination of instructional practices in all contexts. Not surprisingly, the shift to personalised learning embraces many approaches that first emerged in distance learning contexts. The convergence of best practices in education depends on the acceptance of distance learning as a viable and important contributor in educational change. At the same time, distance education must also draw from what is developing in traditional settings. It is a different educational world from the one we used to know. Separation and isolation in practice will only create weakness going forward.

The role of the teacher as the centre of information, the “sage on the stage,” the control centre of learning, is becoming untenable in any educational setting. On the heels of an information explosion and technological advancements, teachers can no longer fill the role of expert. The demands of trying to stay in this position, meeting the needs of all learners while managing increasing complexity in educational delivery are impossible tasks. The practice of knowing, telling and controlling must come to an end.

Increasingly, disillusioned learners are customising their own paths of learning away from school or through distance learning options. The migration of students towards online learning is particularly disruptive to traditional schooling; however, it is an empty promise unless it can deliver a

rich, personalised and engaging educational experience. As greater value is placed on the ability of teachers to stimulate learning by way of facilitation, coaching, mentoring, modelling and inspiring, the roles of distance learning teachers and traditional classroom teachers will merge into blended models that emphasise connected, personalised learning.

## **How to use this guide**

In order to apply new pedagogical approaches, teachers need an understanding of the underlying principles of teaching and learning in a distance learning context.

Throughout the guide, the term “teacher/instructor” has been used for ease and consistency. The role of the teacher and the role of the instructor are different in subtle but important ways. We have used the dual term to emphasise that the information in this guide is applicable to both roles. Please note that depending on the institutional or regional context, this term may be replaced with any other similar role description such as tutor or facilitator.

The first part of the guide examines various delivery modes of distance learning, including blended learning which combines face-to-face and distance learning.

The second part of this guide provides an overview for teachers who are new to distance teaching, as well as an integrated view that will help face-to-face teachers and distance teachers in the new contexts of education — the convergence of face-to-face and distance learning and the emergence of blended models. No matter what the delivery approach or context, this guide should contain something useful for those seeking to develop unique teaching strategies found in distance learning.

The third part of the guide takes you through some distance learning modules to familiarise you with their organisation and use.





# PART 1

## **An Overview of Distance Learning Techniques**





## SECTION 1

# Open Education Resources and Distance Learning

## 1.0 Introduction

This section focuses on Open Education Resources (OER), so it seems appropriate to draw on open source information to provide a working definition of what an OER is. According to Wikipedia, an online source where information is written, revised and shared collaboratively, OER are essentially learning materials that are freely available in the public domain, or that have been licensed for use through copyright permissions established by the Creative Commons. They may be used in any educational setting, and many are purposely designed and intended for distance learning. In addition, they are available free of charge.

Distance learning currently refers to students working at any distance from the institution that is co-ordinating their learning and using some kind of mediated instruction for a significant part of their learning. These students rarely have much in common. For example, they may differ in age, location or motivation. Distance learning therefore requires different approaches from those found in traditional, face-to-face settings where students tend to be grouped according to similarities, most often by age or grade.

## 2.0 Key attributes of OER delivery and distance learning

Distance learning has three core attributes: **Accessibility**, **Flexibility** and **Scalability**. The inclusive nature of these attributes adds great diversity to learner groups. As a natural result, a student-centred or customised approach responds to unique student needs. Customisation

initially developed out of necessity, as the distance learning students were working in many different circumstances. The instruction was standard for all, but how each student worked with the instructional material was supported individually. With the addition of teachers/instructors to the distance education model, the existing customisation of learning creates a natural springboard for instructional shifts towards personalised learning, where the teacher/instructor can change and adapt the instructional material for individual learners. The promise of OER is that unique learning materials will be made available on demand to unique learners. Some distance learning teachers/instructors describe this new work as creating “two hundred classes of one student.” This gets at the notion of supporting individual learners in a truly personalised learning experience.

## **2.1 Accessibility**

Access to education remains a fundamental value of distance learning. Accessibility is lacking when learners cannot attend an education centre for instruction; it is also lacking when learners cannot participate in an educational experience, however it is offered. A primary strength of open and distance learning is its ability to bring education and training to distributed and isolated groups of people. Using print and other media for delivery, the old schoolhouse has been extended to include vast populations of disadvantaged learners in remote areas of the world. With the Internet now providing a global gateway to information, accessibility now means giving learners, in regions that have Internet, access to specialised content or content of interest from sources beyond the local school or community. This is particularly true for rural learners. In urban centres, learners are no longer bound by school walls and are choosing to learn via distance education delivery in order to customise and enrich their learning experiences. The availability of free course content through iTunes University is just one example of open access. Increasingly, post-secondary institutions are making their course contents available to anyone. The formal credentialing of learning is rapidly being separated from access.

## **2.2 Flexibility**

Successful distance learning requires flexible programme delivery. Distance learners typically have other commitments such as work, family or other schooling in addition to a full spectrum of learning

needs. Local schools may have time, age or programme restrictions that prevent some learners from attending them. In K–12, distance learning typically serves a broader clientele than just school-age learners: those returning to school after having dropped out; those who are seeking a high school education but are not “age-appropriate” for the traditional classroom; those upgrading past courses or certification; those dealing with health and wellness issues; those disenfranchised with the traditional school system; or those who wish to work at their own pace, either faster or slower, depending on other commitments and needs. This is not a complete list, but it does paint a compelling picture of the need for individualised, customised approaches for the inclusion of all learners. In North America, thousands of learners take online courses as part of their secondary school education. The flexibility of working away from rows of desks in a confined space at a specific time has attracted many students to the distance learning experience.

## **2.3 Scalability**

Scalability is often misunderstood. It is too frequently seen as a means of providing cheaper education to a greater number of people. In the reality of some contexts, being able to reach much of the population is an immediate and pressing concern. Distance learning offers a solution for providing cost-effective education to thousands worldwide, harnessing the power of print distribution, broadcast technology and, more recently, online learning. In the traditional school system, the primary variables are fixed. Simply put, more students cost more money: more students need more teachers/instructors, more classrooms, more schools, and so on. In recent years, rising costs and economic pressures have eroded student services. Fixed systems, attempting to do more with less money, can barely sustain an infrastructure. Distance learning can certainly provide a more cost-effective delivery, but it is critical that it is not viewed as a way to simply save money by reducing teachers/instructors. If anything, greater support can be afforded by the savings gained in moving away from funding a fixed infrastructure to funding dynamic instruction.

## **2.4 Student-centred learning**

With accessibility, flexibility and scalability as three core attributes of a distance learning model, how does student-centred learning work?

Rather ironically, the key to student-centred learning lies in the instructional approach. Access to flexible education delivery led to the development of individualised learning using standard means of instruction. For example, correspondence courses have to be written in a style that suggests a teacher's/instructor's voice to compensate for the physical absence of a teacher/instructor; at the same time, every student receives the same content. This instructional design points to the greatest weakness of some forms of distance learning: In the absence of teacher/instructor interactions, personalised learning is also absent, even though the delivery model affords individual accessibility, flexibility and scalability. Further, with distance learning, a teacher/instructor can become disengaged and allow the course materials to do all the teaching for them. In fairness, this can also be said of the traditional classroom delivery model. In a traditional class with a teacher/instructor, if there is no engagement with learning on the part of the teacher/instructor or the learner, there is no personalised learning.

Between distance learning and traditional classroom learning, distance learning has had the greater chance to seize an opportunity to offer personalised learning. Because the students are typically physically and geographically separated from the teacher/instructor and are often working at their own pace, you must make a real effort to reach out, or your learners will simply disappear. In correspondence education during the past century, the lack of student engagement due to limited teacher/instructor communication led to very low course completion rates. Fortunately, the introduction and use of interactive technologies has changed this to the point where distance programmes that emphasise student support have course completion rates similar to, or better than, those of traditional face-to-face schools.

Student-centred learning is at the heart of personalised learning and 21st-century educational ideals. The success of this learning approach has much to do with the teacher/instructor, whose changing role will support both the change and the development of new learning. The classroom teacher/instructor and the distance learning teacher/instructor must become facilitators of learning. Coming from different places and approaches, they must converge in the middle with shared, best and promising practices.

## 3.0 Key approaches in OER delivery and distance learning

### 3.1 Synchronous and asynchronous delivery

**Synchronous** and **asynchronous** delivery are two types of delivery modes in distance learning that govern the immediacy of the instructional cycle. Synchronous delivery is where the teacher/instructor and learner engage in direct communication, whether the communication is face-to-face (physically present with each other) or mediated through some form of communication device. Asynchronous delivery is where the teacher/instructor and learner communicate indirectly and at different times from each other. Synchronous delivery contributes to the learning experience by bringing additional dimensions and dialogue to the knowledge-building process, whereas asynchronous learning can develop deep reflection and alleviate the stress of timed responses.

### 3.2 Paced and self-paced delivery

**Paced** and **self-paced** delivery are two additional delivery options found in distance learning. Paced learning is where the teacher/instructor and/or learner decide on a schedule and use time variables to plan and work through the course material. Typically, paced learning has a fixed starting and ending point and is applied to a group or learning cohort. Flexibility may be offered within the start and end points.

Self-paced learners can begin a course when it suits them and complete a course according to their own schedule. You as the teacher/instructor may or may not have input into deciding the course schedule. Self-paced learning is also less likely to have a fixed start or finish date, beyond a loose framework set out by policy or institutional registration protocols. However, if self-paced learning lacks too much structure, it is at risk of becoming “no pace” and learners will not complete their course successfully. While learners work independently of each other, they should still be connected to you and the institution co-ordinating their learning.

It is important to note that most distance education models do not fall neatly into either synchronous or asynchronous delivery, or paced or self-paced delivery. Many programmes and courses use a combination of these delivery types, even for the most detailed level of a topic or lesson. With a learner-centred approach there is no reliance on a singular delivery method.

# SECTION 2

## Three OER Delivery Approaches

### 1.0 Introduction

Three OER delivery approaches have been outlined in this guide and it could be argued that additional approaches or variations of these three could also be included. For simplicity, the three approaches outlined will be explained to illustrate their similarities and differences and to show a progression in distance learning that runs in tandem with technological advancements. In essence, it does not matter if the classifications are right, or even all-inclusive. The most important thing is that distance learning can be seen as having evolved along a continuum. All three approaches are still valid and still in use, even as the nature and use of technology continue to change.

### 2.0 Distance delivery

In this guide, **distance delivery** refers to an educational context where the teacher/instructor is rarely or never physically present with the learner. It refers to a primarily print-based delivery model with multimedia resources made available to learners as optional enrichment and knowledge-building tools.

Distance learning, as described in the preceding section, has traditionally been self-paced and asynchronous. To date, this earliest of the three models has not been replaced by newer approaches; however, many distance learning institutions have expanded to offer various forms of online learning along with traditional correspondence methods. In the traditional delivery model of correspondence, some contexts have established ways of giving greater learner support. This has been done by providing classroom support and supplementary media resources and placing a greater emphasis on one-to-one communications between you as the teacher/instructor and the learner.



The increased contact and support address concerns about the isolation of learners and bring them closer to attaining the depth and breadth of knowledge that is difficult to acquire when learning alone.

In its weakest form, distance learning can be limited in terms of communications, even though it offers the most learner independence. Because the learner is alone, he or she will not have the opportunity to form any meaningful connections with you or his or her fellow students. Nonetheless, distance delivery continues to provide significant access for regions and countries where the technological infrastructure does not support other methods. Further, OER are scalable without significantly increasing their costs, although scalability can be viewed as a threat when interpreted as a means of enrolling more students with fewer teachers/instructors. Beyond the reality of some contexts that require scalable distance learning to simply allow people to learn, scalability may also offer an opportunity for teachers/instructors to engage in a greater degree of facilitation by reducing the volume of content marking and replacing it with engaging exchanges with the learner.

### 3.0 Online delivery

In this guide, **online delivery** refers to an educational context where the teacher/instructor is rarely or never physically present with the learner but where both synchronous and asynchronous approaches are used through a Web-based multimedia environment.

Online delivery has emerged from two sources: distance learning and computer-assisted instruction (CAI). Early online delivery arising from distance education was largely asynchronous, and frequently offered a digitised version of what had previously been offered through print correspondence. Early online delivery from computer-assisted instruction began as “course-in-a-box” offerings, but eventually expanded to Web-based versions of the instructional resources formerly accessed through Local Area Networks or on CD-ROM. In both cases, the instructional component remained embedded in the content, leaving the learning individualised but not personalised.

The promise of online learning was quickly compromised by limitations on access to technology and bandwidth. These issues still prevail in many educational contexts. Additionally, the online world requires

an entirely new set of skills for both teachers/instructors and learners so that they can succeed in a mediated environment. But while the challenges of working online may initially be great, the opportunity for communication also increases dramatically. The flexibility of Web-based course delivery and the dynamic nature of information change the teacher/instructor-learner relationship. The distance or CAI models should not be simply replicated in the online environment.

## 4.0 Blended classroom delivery

In this guide, **blended classroom delivery** refers to an educational context where you are face-to-face with the learners for most of the time but the learners also learn through a virtual medium for some of the time.

Blended classroom delivery currently sits on a rather messy continuum — blending can be done through a primarily online approach that offers occasional face-to-face sessions; it can be done through a flexible mix of part-time physical presence in the classroom with remote work; and it can be used to supplement a classroom environment with OER and virtual classrooms. But the true blended classroom is one that leverages the strengths of the distance and face-to-face environments, and is founded on emerging 21st-century research and practice.

**Blended learning** (also known as **hybrid learning**) might be described as the combining or mixing of learning environments and approaches. Early versions of blended learning resemble two separate delivery models stuck together rather than a blend of both. Getting past the practices that characterise two different delivery systems to create a new practice for a new system is a huge step. Moreover, there is considerable reluctance from educators in both traditional and distance education settings to abandon the status quo. Some of the elements of distance and online learning apply to blended learning, but new approaches that define blended learning as a new and distinct delivery model will certainly emerge. Blended learning requires the blending of instructional practice, which can be done using several variables: blending the use of technology, blending face-to-face and online time, blending the locations of learning, blending the participants and changing the definition of a class, blending teaching approaches, blending learning and assessment activities, and blending the roles of all involved in the learning experience.

Blended learning is the relative newcomer to distance delivery models. It currently has many faces and is a “catch-all” for any combination of online and face-to-face learning imaginable. Blended learning is not online educational delivery for learners physically gathered in a common location, but neither is it continuing the classroom tradition of teacher/instructor-centred learning with the addition of some technology. In fact, the physical location of the learners and technology are not the deciding variables.

## **5.0 Evolution of open and distance learning**

Before going further, a short review of the evolution of open and distance learning may be helpful in order to understand where we have come from and where we are going.

Early distance education models used technology to describe distance learning approaches. Garrison and Anderson (2000) outlined four generations of distance learning delivery with each generation largely defined by its use of the available technology. But if we look past descriptions of technology, we will see that each of those four generations points to increasing levels of learner interaction and participation.

The four generations identified are as follows: first-generation distance learning is primarily print-based correspondence, delivered by a postal system, and is largely learner-independent; second-generation distance learning uses mass media such as broadcast television and radio and adds direct, one-way communication with learners; third-generation distance learning introduces a range of interactive technologies — text, audio, video and mediated conferencing using both synchronous and asynchronous communication. At the time of writing, the fourth generation of distance delivery seems to be moving towards using Web 2.0 applications, known as semantic or “intelligent” applications. The recent invention of cloud computing could support this, but the lack of a consistent technological base in current networked computing marks a change from the clear sequence of the first three generations. We are moving in a very new direction.

As advances in technology made one-to-one and group interactions possible, learning theory in distance education moved along a parallel,

albeit somewhat reluctant, path. A group of learning theorists known as **cognitive behaviourists** had influenced the highly individualised design of learning in early distance learning. Their work influenced what is known in distance education as the **instructional voice**, which is the ability of a pre-made curriculum “to teach” through careful instructional design and presentation of content. The advancements in technology changed how teachers/instructors and learners could communicate and opened many doors to new experiences. Social constructivist learning theory took form in the importance of relationships and discovery in learning, and signalled the shift from teacher-/instructor- (or content-) dominated learning.

Early in the 21st century, technology advanced to the point of being a secondary concern in distance learning — that is, the focus in distance learning shifted from the importance of tools to the importance of learning and instructional approaches. At time of writing, what is known as **connectivist theory** is gaining considerable interest and momentum. At the heart of this theory is the notion that learning is no longer a solitary or individual action. Further, access to new tools changes how we experience the way we live and work with each other.

Connectivism is a relatively new theory that considers learning in the context of the digital age. With technology reaching the point of being ubiquitous and information available in quantities that can no longer be humanly fathomed or retained, the social connection of learning and learner management of information have both gained prominence in education. With the proliferation of technology, it makes no sense for learners to engage in endless gatherings and endless memorising of content. Building on earlier learning theory, connectivism adds individual learning currency through the creation of meaningful, personal networks.

## SECTION 3

# The Role of the Distance Learning Teacher/Instructor

### 1.0 Introduction

In both distance learning and traditional classrooms, learners may be content with superficial learning. For some, it is the only type of education they have ever known. These learners work to complete measurable tasks, collect facts and regurgitate facts on assignments and tests. The focus is on content and teacher/instructor direction, and the emphasis is on learning as a means to an end, such as a high final mark. Teacher/instructor facilitation (or a lack of it) can perpetuate superficial learning. Fortunately, good teacher/instructor facilitation moves learners to explore deeper learning with knowledge acquisition.

Your role as the teacher/instructor needs to shift from content dispensing and evaluating to designing meaningful learning opportunities and working with new ways of communicating with learners. In the context of open and distance learning, this means that you need to become a very skilled facilitator who can work with a variety, and even assorted blends, of instructional media.

In the delivery of an educational programme, learner support services provided by a teacher/instructor might be separated into three categories: **administrative support**, **personal support** and **academic support**. These three categories are by no means balanced, and are not expected to be balanced. They vary from learner to learner, from class to class and from delivery method to delivery method. The primary focus of the teacher/instructor is academic support, but you will frequently also give students administrative support and personal support, which can affect students in very positive or negative ways.

**Administrative support** is a broad category that includes everything from communicating an institutional policy to a student (for example, what steps to take to arrange an external examination), to troubleshooting course difficulties that a student is having (for example, the student cannot find certain online content) and so forth. The amount of administrative support work that teachers/instructors must do seems to increase commensurately with the level of technology in course delivery.

Distance delivery tends to require less administrative support. If an institution is well organised for registration, material distribution and final course completion, you may find that students need very little administrative support. You may find that common questions around course pacing, testing, value of work or assignment outcomes are the only issues that require consistent attention.

Blended classroom delivery requires more administrative support than distance delivery. Here, the teacher/instructor must manage the physical classroom and also ensure that access to the online tools and/or environments are in place for the students. The introduction of technology into the classroom learning environment currently adds to the administrative burden of teachers/instructors. When students are working with technology, you may frequently find that you must tend to on-the-spot issues with passwords, file upload problems and a variety of other minor technical issues that arise during the teaching period. Overall, the general complexity of managing a variety of tools with a variety of learners working both in and away from a classroom can be quite demanding, particularly at the start of a course when students and teachers/instructors are not yet familiar with the processes and are new to the experience as a whole.

Online delivery is likely the most labour-intensive in terms of administrative support. Until technology becomes more intuitive and consolidated, the administrative tasks associated with managing students in an online environment while also establishing and maintaining a tangible teacher/instructor presence will remain significant. Where a blended delivery teacher/instructor can turn to a face-to-face lesson in the event of a problem or disruption, connectivity is the lifeline of the online teacher/instructor. To ensure all students can access classes regardless of their locations, to resolve all their

problems remotely and to manage their individual learning in a virtual environment requires considerable organisation and attention to administrative support details at all times.

In summary, administrative support by teachers/instructors is directly affected by the complexity of the learning environment. In many instances, you will not have the option of seeking help from a technical person or other employee. Administrative support issues also tend to be highly time-sensitive. It is well documented that distance learners are greatly at risk of dropping a course, particularly in its early stages, if an administrative issue arises and is not resolved. The learning experience, even if a course is completed successfully, may not be perceived as positive if a learner was unable to effectively navigate through a course without considerable independent problem-solving and had to fend for him- or herself in order to finish. Teachers/instructors entering into distance learning delivery might consider the following:

- Teachers/instructors are a learner's primary contact, but are initially invisible to the learner. Teachers/instructors need to reach out to learners to establish contact and a presence at the outset of a course.
- While administrative support work might be seen as work outside of teaching, it is important to remember that a learner who hits an obstacle cannot learn. A teacher/instructor might view this virtual problem as similar to being inside a traditional classroom while the learner is locked outside and has no key.
- A positive relationship is created when teachers/instructors can resolve minor obstacles quickly and appear to be helpful and resourceful. Teachers/instructors report incredible positive responses to simple gestures of reaching out to learners.
- Teachers/instructors will find patterns of common problems. Preparing a few stock email responses or a list of FAQs will ease the burden of having to repeatedly answer the same questions. Not only will the teacher/instructor save time, the learners will receive prompt answers to their questions.

**Personal support** from teachers/instructors is not intended to take the place of other student services such as counselling or advisement. Nonetheless, teachers/instructors may find that students seek their help and advice on matters that are affecting their life and schooling. Depending on institutional policy, teachers/instructors need to be clear

about what level of personal support they are expected or permitted to provide. This is determined by institutional policy, and you should familiarise yourself with the boundaries before the course begins.

The teacher/instructor is often the first person of trust that a learner encounters. When a relationship or connection is established, the learner may begin to feel comfortable talking to you about personal matters. Personal matters should be dealt with by the appropriate professionals, and students must understand and respect teacher/instructor boundaries. (The boundaries of the teacher/instructor role will vary from region to region.) Because distance learners are not in a traditional face-to-face environment they may be more inclined to divulge very personal information. This tendency is also common in social media, where individuals will disclose extensive personal details that they would not dream of revealing in person.

Distance teachers/instructors will occasionally receive work from a learner that is written as a “call for help.” Responses to certain questions can reveal a lot about a learner’s state of mind, and as distance learners are more likely to be physically isolated, they may try to gain help or attention through you as potentially their only source of trusted communication. More often — and more appropriately — you will be asked questions about personal timelines, or receive information from a student about a personal problem that is interfering with his or her course progress.

Blended classroom teachers/instructors are familiar with some level of personal support for learners in a classroom setting. However, the introduction of an online environment presents new challenges. Students may not behave the same in an online context as they do in a face-to-face setting. Further, learners who are in a blended classroom may not be familiar with how to behave online. As a blended teacher/instructor, you will need to set out clear expectations and standards for learners who are working in two parallel environments.

Online teachers/instructors must also support learners to help them progress. Online teachers/instructors, like their distance education colleagues, are disadvantaged by significantly less face-to-face contact with their students. Further, face-to-face communication in a mediated environment is not the same as physical face-to-face contact. Limitations of view restrict the full impact of non-verbal information



that one gets from direct physical contact. However, if you use a variety of media for communication, you will develop a broad knowledge of the individual students and their unique circumstances. Relying on only one form of communication will result in your having a very narrow view of the distance learner, so it is crucial to use a variety of tools wherever they are available.

In summary, personal support for students that is specific to their progress in the course is typically handled by the teacher/instructor. Teachers/instructors moving into an online environment should be mindful of the following:

- Teachers/instructors should understand how learners communicate in the online environment. The ability to email others directly and to be online 24/7 changes learner interactions. Discussion forums or chat rooms need to be monitored regularly by the teacher/instructor and/or appointed peer leaders.
- Teachers/instructors can use the online environment to track and retain data. Records of past assignments, marks, deleted postings, emails, log-in information and many other things can be reviewed using learning management systems (LMS). Any online presence leaves digital footprints that can give a teacher/instructor a lot of information about learners' progress, activity and behaviour.
- Teachers/instructors need to set the standard and model the behaviour expected in the online environment. Learners may need to be reminded to use more formal messaging online when working with a teacher/instructor and classmates than they use with friends.
- Teachers/instructors should refer personal matters not related to course progress to the appropriate department or support personnel. Teachers/instructors and students must be aware of these personal boundaries but the onus is on the teacher/instructor to direct the student and take responsibility for establishing and maintaining an appropriate learning experience.

**Academic support** is the main focus of your role as the teacher/instructor. While you lead the learner in a linear fashion from the beginning to the end of a course, academic support is provided in an individualised, non-linear fashion. When academic support moves from perpetuating “surface” knowledge delivery to “deep” knowledge acquisition, learners become engaged in activities that include choosing

what to study, reflecting on what they learn or discover, applying their knowledge to real-life experiences, creating and expressing their understanding of information, and collaborating with others to expand their perspectives and views. These are only a few of the benefits of personalised learning that can come from distance learning with an actively involved teacher/instructor.

In distance, online and blended delivery, academic support can be broken down into four key areas:

- Facilitating
- Sustaining
- Assessing
- Managing

**Facilitating** is the instructional work of the teacher/instructor that might be described as guiding, enabling, coaching, mentoring, inspiring, enlightening, enquiring, etc. Facilitating helps learners acquire the knowledge and skills of a discipline and encourages them to look more deeply into how they can apply what they learn. When this stage is personalised, the learner will see the relevance of what he or she is learning and will attribute a sense of value and meaning to it. Even in a course delivery model that is highly content based, you can transform the learning experience by changing the way in which the learner works with the prescribed content. This cannot be overemphasised. It is a form of empowerment for both you and the learner.

**Sustaining** is the supporting work of the teacher/instructor that keeps learners engaged and fosters commitment and motivation. It requires dedicated effort in distance education where you are not physically present with the learner. The most important method of sustaining learners is through meaningful and constant feedback about their learning. You also engage in content direction, monitoring and personalised communication.

**Assessing** is the evaluating work of the teacher/instructor. Through assessment, you and the learner discover what the learner knows and is learning. Assessment, on a broader scale, also meets institutional and societal requirements, by ensuring that what learners know and are learning meets specific standards.

**Managing** is the academic administrative work of the teacher/instructor. In distance education, and online learning in particular, a great deal of academic administrative work is required in order to keep the information and progress of a student organised.

These four key areas, along with teacher/instructor facilitation guidelines, will be explored in detail in Sections 4–6.

## 2.0 Striving for learner success

### 2.1 What works in distance learning?

Educational practice in distance learning is an evolving field. The North American Council for Online Learning (NACOL) has written a series of papers that examine instructional practices in online learning. One of the key themes noted is that many approaches and strategies have emerged in 21st-century learning and it is very difficult to state which are best. Moreover, many approaches may disappear altogether, be adapted or be replaced over time.

In distance learning, you as teacher/instructor will find it rewarding to uphold a learner-centred approach, no matter what delivery method or technology is used. A learner-centred approach takes the emphasis away from you and the teaching, and shifts the emphasis to what the student seeks to learn, and is able to do and interested in doing. You, the teacher/instructor, become the facilitator of the learning, rather than the director of the learning.

Not all educators are convinced that a learner-centred model is the answer. Nonetheless, the recent and broad acceptance of personalised learning approaches as characteristic of what is needed in 21st-century learning holds promise.

In addition to practising a learner-centred approach, you must reach out to learners by establishing a strong presence. Encouraging learners to learn to engage in and reflect on what they are learning helps them create meaning and develop a deeper knowledge. Encouraging learners to interact with others and beyond their immediate context helps them develop the skills and abilities they will need to contribute to and be part of a larger community. You can help them make these connections by being fully present and engaged with the learners in as many ways as possible.

We are in a period of great transition in education. During such periods, it is wise to seek the best from what we already have and know, but to resist the urge to settle for less, or for whatever is easier or familiar. You might think of instructional practices as a collection of personal strategies that you use to help learners succeed. It is important to add new things to the collection and let old things go when they are no longer useful.

## **2.2 How do we measure learner success in distance learning?**

In the field of education, there is little agreement on what approaches are best for learning. In fact, there is little agreement on what constitutes evidence of learning and achievement. At time of writing, there is considerable tension between those who stand for accountability through standardised testing and those who advocate for more formative, relevant measures of achievement. On the one hand, assessment has had a singular focus on achievement associated with completion and end scores. Standardised tests effectively measure large groups of learners for the purposes of qualifications, certification, and so forth. On the other hand, assessment where the focus of learning is on knowledge construction and processing can be very empowering and can create learning outcomes that have equal if not greater value than their traditional counterparts. The whole matter of assessment requires considerable rethinking. There is room for both traditional knowledge acquisition with formal measurement and knowledge construction with less formal measurement. For the teacher/instructor, autonomy around assessment practice will be guided by institutional policies; however, you always have the option to make assessment personal and meaningful within any framework.

# SECTION 4

## Distance Delivery

### 1.0 Introduction

This section focuses on the role of the teacher/instructor in a distance delivery context, with “distance delivery” referring to an educational context where you are rarely or never physically present with the learner. It will refer to a primarily print-based delivery model with multimedia resources made available to learners as optional enrichment and knowledge-building tools.

The assumption will be that some form of communication with the student — for example, telephone or email — will supplement the written correspondence that accompanies print materials, assignments and feedback. This section highlights key principles of the distance delivery model along with some communication strategies, all of which are based on research on distance learning and years of practical teacher/instructor experience in distance learning. The principles, strategies and communication tips provided are neither a complete set, nor intended to be applied rigidly. They should be treated as starting points to create new ideas and strategies.

### 2.0 Facilitating the distance learner

1. Principle: **Establish early communication.** Learners will not see you, their teacher/instructor, in a classroom setting, so it is important to establish an immediate and positive connection with them.

Communication Tip (1): Students will most probably receive a standard institution letter with their confirmation of enrolment in a course. You should prepare a customised welcome letter, introducing yourself to each student. This can be sent independently or when the first assignment is returned.

Communication Tip (2): The first time a learner makes contact — whether it is through submission of an assignment or an inquiry — you should respond immediately with a positive, supportive and encouraging tone. The tone in written feedback is just as critical as tone of voice. A quick response to learners at the start of a course has been shown to make a significant impact.

2. Principle: **Give personalised feedback and attention.** Feedback to and individual concern for learners leads to greater retention and success.

Communication Tip (1): The importance of detailed, constructive feedback to learners cannot be overstated. Feedback is the lifeline of the independent learner. Feedback on each assignment should therefore be detailed and meaningful, and should begin by focusing on what was done well. Be gentle about indicating areas where the learner needs to work harder or focus more so that he or she is not discouraged from continuing. An added personal touch (such as commenting on their reference to a personal goal, a family member, etc.) is also recommended to continue building rapport.

Communication Tip (2): Watch for indications of difficulty in the first submission. Significant problems with handwriting, spelling, content and following directions may indicate learning difficulties, or simply sloppiness. If possible, speak to the student to learn more about him or her, or review other writing samples where possible to identify the issue. A learner who has been away from formal schooling for some time may have simply rushed through the work and not achieved the expected standard. However, it could equally be a sign of a learning disability. It is important to find out in a supportive, caring fashion what caused the poor work.

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## 3.0 Sustaining the distance learner

1. Principle: **Build a connection.** Keeping in contact with each learner keeps them engaged with you and motivated to continue in the course.

Communication Tip (1): Create your own course newsletter. In your newsletter, you might mention particular learners' accomplishments or slip in ways to make the learners think more. For example, you could summarise an excellent project submitted, add a tutorial tip or "brainteaser" question, and highlight learner celebrations such as birthdays for the month, etc. In this way, learners become aware of the others taking the course and remember that a real person is guiding them in their learning. This will help to create a sense of community.

Communication Tip (2): Frequent and regular contact will help to keep the learner engaged. You could telephone students or send personal emails at various intervals throughout the course. For example, telephoning a learner to simply say hello can be pleasantly surprising to them. Keep track of your contacts to ensure that no learners are being missed or forgotten for long periods of time.

2. Principle: **Be proactive.** When learners are not physically present, and when your work loads are heavy, it is easy for you to become focused exclusively on the work at hand. It is important to set aside time to seek out the reluctant or "absent" learners.

Communication Tip (1): Each day, identify one student who has been silent or has not sent in any work for some time. Contact that learner in whichever way you can. Use different communication modes if following up at additional times. For example, send a print note the first time, then telephone or send an email another time.

Communication Tip (2): If a learner inserts comments in his or her work that suggest some personal problems, grab the opportunity to help. For example, if a learner writes at the end of an assignment, "Sorry I took so long to do this lesson," you could respond with, "You mentioned this lesson took you a long time to do. Is there anything I can help you with? Please let me know."

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## 4.0 Assessing the distance learner

1. Principle: **Be responsive.**

Communication Tip (1): Pay as much attention to what the learner does not write as you do to what he or she does write. The written word is the primary communication between the learner and you, and you need to read responses carefully in order to make an informed assessment of progress or other concerns embedded in the writing.

Communication Tip (2): Provide fair and balance feedback based on thoughtful consideration of both learner responses (both cognitive and social) and the intended learning outcomes of a lesson.

Principle: **Adapt and modify.** Assessments and evaluations in most distance print delivery courses are pre-set. However, you can still facilitate the assessment process with learners to give them a positive and successful experience.

Communication Tip (1): Prior to a major exam, offer to give the learners suggestions on how to prepare and on which areas they need to focus (based on the work you have seen). This will guide their revision for the exam, and should reduce any stress and anxiety they may have about it.

2. Communication Tip (2): Create an opportunity for work to be resubmitted for evaluation. If a learner did not do a piece of work correctly, he or she should be able to receive an Incomplete and redo the work. Repeating assignments and tests may fall under institutional policy. You should be clear on the policy and understand under what circumstances exceptions can be made.



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## 5.0 Managing the distance learner

1. Principle: **Give direction.** Encourage learners to establish and commit to a personal timeline. In distance learning, where little to no synchronous interaction is possible, the open-ended nature of a course can be a great pitfall. Self-paced does not mean no pace at all.

Communication Tip (1): Early in the course, work with your learners to help them establish milestones for completing their assignments, assessments and units in the course. Distance learners who are working in isolation are more likely to be successful if they have developed a roadmap for themselves.

Communication Tip (2): Troubleshooting is a necessary part of distance learning. Because you cannot see learners as you would in a traditional classroom, you will not be able to act on visual clues that learners are struggling and so will not catch problems when they are still manageable. If problems are not addressed promptly, learners may give up, move on or just guess what to do, resulting in work that is not done correctly, if it is done at all.

2. Principle: **Clarify goals and objectives.** Learners acquire deeper knowledge when they understand how activities relate to course goals and objectives. Strategic reminders help to keep them focused on what they are learning and why.

Communication Tip (1): Invite learners to participate in a face-to-face orientation session or personal meeting. If this is not possible, a personal phone call or email could also establish a personal connection. Use this contact time to review the course outline and allow learners to discuss any anxieties about the course.

Communication Tip (2): During the course, use assignment feedback to introduce what comes next. For example, as a learner nears the end of a unit, mention something that will be learned in the next unit by linking it to the current material. This can also stimulate curiosity and motivation.

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For an additional review of facilitating learners in this delivery mode, please see *Tutoring in Open and Distance Learning: A Handbook for Tutors* (O'Rourke, 2003), published by the Commonwealth of Learning. This handbook is a comprehensive, very practical resource for distance delivery teachers/instructors. As feedback is one of the most important elements of this delivery model, you may also be interested in more ideas about and strategies for giving positive, meaningful feedback. *How to Give Effective Feedback to Your Students* (Brookhart, 2008) is a recommended resource for teachers/instructors in any setting who want to develop these skills.

# SECTION 5

## Online Delivery

### 1.0 Introduction

This section focuses on the role of the teacher/instructor in an online delivery context, with online delivery referring to an educational context where you are rarely or never physically present with the learner and both synchronous and asynchronous approaches are used. It will refer to a primarily Web-based delivery model with (a) multimedia asynchronous resources for learners (some compulsory, some optional for the course) and (b) interactive technologies for synchronous use for learners (some compulsory, some optional for the course).

The assumption in this section is that some form of learning management system (LMS) or course management system (CMS) is in use. Without an LMS or CMS, instruction using websites, online resources and technology in the context of traditional face-to-face instruction is not considered distance learning. The use of technology in itself does not define distance learning; it informs and enhances the approach taken.

Please note that this section is not a technical guide on how to use Moodle or an LMS. As Moodle is an open source course management system and the focus of this guide is OER, the online teaching tips are noted as Moodle Tips. These tips may be applied to other platforms as many of the provided features are standard inclusions in LMS or CMS software. However, specific directions on how to use the features will differ between applications.

## 2.0 Facilitating the online learner

1. Principle: **Create a teacher/instructor presence.** In order to build a relationship with the learners as individuals and as a group, the teacher/instructor must be invested in the process and willing to create and sustain an online presence.

Moodle Tip (1): You should post a bio of yourself along with a photograph. This puts a face to your name and helps to establish a personal connection. From the login page, click on your name (live link) located in the upper-right-hand corner. Select “edit profile.” Under “description,” you can add information about yourself and upload a photo if you want (*Using Moodle*).

Moodle Tip (2): Create short video blogs to introduce units of study. A video blog allows learners to see you in action as you introduce important concepts of the course. Videos can be uploaded to YouTube by creating your own teacher channel. Include a link to the video in the course content. It is strongly recommended that you disable the comment feature on videos posted in a public domain such as YouTube. From your course page, turn on the editing function. From the “add a resource” menu, select “link to a file or a website” (*Using Moodle*).

2. Principle: **Encourage learner presence with participation.** As virtual environments lend themselves to hiding and lurking, it is important to encourage the learners to participate, connect and engage. Offering bonus marks for participating adds incentive.

Moodle Tip (1): Ask the learners to post their own biography or profile, including some personal information about their interests, goals, etc. You should draw up a template of acceptable guidelines to help learners become familiar with managing their online identity. Other activities that are not course or content specific can be added to further their understanding of the online environment. Learner bios are created in the same way as the teacher/instructor bio.

Moodle Tip (2): Make it compulsory for learners to participate in online discussions — make contributing to discussion forums part of the course mark. For example, you might require learners to post ten discussion comments during the course for a total of 20 marks. To create a discussion forum, go to the section of the course where you would like to place it. Turn on the editing function. From the activity list, select “Adding a new forum” (*Using Moodle*).

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### 3.0 Sustaining the online learner

1. Principle: **Use frequent, sustained communication.**

Communicating with each learner and the larger group keeps learners engaged with you, encourages peer networking and helps motivate learners to continue in the course.

Moodle Tip (1): Post regular news items about your course on your Front Page (*Using Moodle*). They do not need to be detailed, but they should be frequent and regular. For example, you could highlight a new question posted in a discussion, or showcase a great response by a learner to an existing discussion, or draw students into participating with a stimulating question.

Moodle Tip (2): Create functional email groupings of students, organised by learning variables such as group work, region, paced or self-paced learning, etc. These can be used when sending out group emails about various topics that pertain to various interests. Group communication, if combined with individual communication, can be a tremendous time-saver for you, without coming across as the impersonal spam of a whole-group email (*Using Moodle*).

2. Principle: **Model standards of communication.** The online environment is home to a range of communication styles, not all of which are appropriate for formal learning. You should encourage your learners to compose emails using a proper greeting, complete sentences and salutations. Checking digital work for errors should be both expected of learners and modelled by you.

Moodle Tip (1): Use the editing feature in Moodle to proof all your postings and work. Nothing is more off-putting to a learner than to see errors and typos in a teacher’s/instructor’s comments, postings or content. Moodle’s spellcheck can be turned on by putting a tick in the ABC box typically available in the HTML editor, or using the HTML editor in your offline software (*Using Moodle*).

Moodle Tip (2): When launching a discussion forum, check it frequently to model how learners can contribute as well as to ensure the discussion gets started and then stays on track. Moodle can notify you of any new comments, so you will not have to visit each forum to follow what is happening. Never abandon discussions or leave them open and virtually unattended. You can select your preferences for receiving notifications on your profile page.

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## 4.0 Assessing the online learner

1. Principle: **Use multiple assessment strategies.** Formative assessment helps learners and teachers/instructors observe progress in the course. Utilising a variety of different tools will help create a fair assessment strategy that will recognise all learning styles.

Moodle Tip (1): Online, self-marking quizzes where immediate answers are provided are an excellent way for learners to check their own individual progress or readiness. These can be created in Moodle wherever you want them to appear. Turn on the editing function. From the “add an activity” menu, select “add a quiz” (*Using Moodle*).

Moodle Tip (2): Create a portfolio area to showcase shared student work. Portfolios can be established through the database feature in Moodle. Turn on the editing function. From the “add an activity” menu, select “add a database” and name it Portfolio or Student Work.

This feature will allow students to share their work, but not until they have uploaded their own. It also allows you to pre-approve uploaded work before it is shared with other learners.

2. Principle: **Guide assessment with learning outcomes.** Use rubrics to outline the intended outcomes and indicators of success.

Moodle Tip (1): Rubrics can be prepared in a Word or Open Office document and uploaded into Moodle. From your course page, turn on the editing function. From the “add a resource” menu, select “link to a file or a website” (*Using Moodle*).

Moodle Tip (2): Link within the rubrics document to samples of writing, model responses or exemplars. You can add links to uploaded documents from your course page. Within an uploaded document, turn on the editing function. From the “add a resource” menu, select “link to a file or a website” (*Using Moodle*).

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## 5.0 Managing the online learner

1. Principle: **Be ready to troubleshoot basic technology problems.** The learner will likely expect you to help with technical problems. While you cannot be expected to provide actual technical support for the learners, technical problems are often minor and can be resolved by simply pointing the learner in the right direction. Further, if a referral to tech support can be avoided for minor issues, the learner experience will not be interrupted or derailed.

Moodle Tip (1): Post your office hours, FAQs, etc., in a highly visible location. Make sure learners know how they can reach you outside of your office hours (for example, by way of email or voice message). In Moodle, you might wish to create priority access to the information. This can be done through the use of features such as My Moodle

(a customisable dashboard), the News Forum, which accompanies every course, or a designated Front Page (*Using Moodle*).

Moodle Tip (2): Create a discussion thread (not for content) where learners can share tips and tricks. Encourage learners to help each other with questions and problems. Ask each learner to contribute something that he or she figured out how to do that would help others. A forum such as this can be placed in a feature known as a “sticky block” where it will be easily visible to and accessible by all learners, regardless of their geographical position (*Using Moodle*).

2. Principle: **Monitor the environment**. In an online environment, it is impossible to be everywhere at once. For this reason, LMS and CMS software typically provides a means of using online tracking and notifications.

Moodle Tip (1): Observe your learners’ online activity data. It can indicate patterns of work, where learners are spending their time, how much time is being spent in those places, etc. You can access activity data through the Report feature (*Using Moodle*).

Moodle Tip (2): Should a learner post something that is too personal, or potentially inflammatory or offensive, you must act immediately. Do not delete the account, however, without saving evidence of the problem and being sure that the student will be withdrawn from the course because of the posting. It is possible to preserve a learner account while disabling certain learning permissions; or change the password to an account so the learner cannot access it. This will remove the account from view without deleting it until the matter is resolved. Above all, any inflammatory or offensive material should be saved offline and then immediately deleted from the view of other learners.

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You can find a lot of information online about using Moodle. Unfortunately, accessing some resources online involves the cumbersome process of setting up an account on a website. One of the most useful Moodle guides that can be downloaded easily is called *Using Moodle*. It was written by Jason Cole and Helen Foster. The resource is updated as new Moodle features are released.

As Moodle has become very widely used in recent years, additional “how to” information can be found by simply using Google, or any favourite search engine, to further explore any course management system topic.

# SECTION 6

## **Blended Classroom Delivery**

### **1.0 Introduction**

This section focuses on the role of the teacher/instructor in a blended classroom delivery context, with blended classroom delivery referring to an educational context where learners are face-to-face with you for at least half of the time and in a virtual learning environment for the remainder of the time. Both synchronous and asynchronous approaches may be used for instruction.

In blended classroom delivery, it is assumed that a learning management system (LMS) such as Moodle is in use to deliver or supplement the online components of a face-to-face class. It is also assumed that the online delivery — that is, learners working independently, occupying a shared classroom space but not sharing or collaborating in their learning experiences — is not the only delivery method.

Please note that this section is not a technical guide on how to use Moodle or an LMS. As Moodle is an open source course management system and the focus of this guide is OER, the online teaching tips are noted as Moodle tips. As the blended classroom works best when the face-to-face components are maximised to engage learners, the second tip provided under each principle will be a blended class tip. You will note that most of the Moodle and class tips are interchangeable, needing only small adjustments to accommodate each pedagogical approach.

## 2.0 Facilitating the blended classroom learner

1. Principle: **Encourage collaboration and community building.**

You can show the relevance of and create engagement in learning by encouraging learners to interact and discuss their learning both inside and outside of the classroom.

Moodle Tip: Create a wiki. Wikis are Web pages that can be updated by any participant. (You can protect access to a wiki with a password.) This makes them excellent collaborative tools. Using a wiki in conjunction with a class activity engages learners and encourages them to post their thoughts on their learning. Additionally, creating content is well documented as a way of reinforcing learning. Wikis can be created by turning on the editing function, choosing an activity and adding the wiki to the appropriate location of the course. From the desired location in your Moodle course, turn on the editing function. From the “add an activity” menu, select “add a new wiki” (*Using Moodle*).

Class Tip: Make the most of the face-to-face time to conduct hands-on labs, class discussions, debates, presentations, group investigations, etc. These activities can be done outside the classroom. Learners could go out to conduct interviews, community investigations and other field work, reporting live through Skype or bringing multimedia documentation back to share with their classmates.

2. Principle: **Scaffold knowledge construction.** Deep learning is achieved by moving beyond the foundational knowledge of a subject to explore other contexts, variables, applications, issues, etc.

Moodle Tip: Plan a scheduled release of content to learners as you pace the learning through a topic. Problem-based learning can be carried out very effectively using this online technique. The timed release of content will also prevent students from navigating haphazardly through the entire course, and will help to focus them on the tasks of the current unit in the context of goals or objectives. To do this, use the Hide/Show feature on the Activities page (*Using Moodle*).

Class Tip: Post homework questions such as vocabulary and other knowledge foundation exercises BEFORE starting a new topic or unit so that learners can prepare outside of classroom time. This type of

work is lower on Bloom’s Taxonomy (Clark, 2010) and therefore less likely to present challenges when working asynchronously and alone. This kind of “homework” also prepares learners for more advanced, conceptual thinking during class activities. This is one example of a practice that has been successfully used by **flipped classroom** teachers/instructors (November et al., 2011). A flipped classroom takes what has been traditionally done in class — for example, lectures and teacher-/instructor-directed instruction — and moves it into digital form outside of the classroom. This then allows time in the classroom to be devoted to deeper, facilitated learning with greater engagement of the learners (King, 2011).

3. Add your own idea here:

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Add your own Moodle Tip or Class Tip for this idea here:

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### 3.0 Sustaining the blended classroom learner

1. Principle: **Encourage contributions to learning.** Getting learners to participate in a variety of ways throughout an activity leads to increased engagement.

Moodle Tip: While a class activity is underway, use the online discussion forum to reinforce learning and engagement. Learners could post questions as they listen to a short lecture, for example. This is another example of “flipping the classroom” as discussed above. Other online applications could also be used to engage learners in a “backchannel” of communication, thereby blending online and class learning experiences as you make best use of technology. For example, learners could work together to build a vocabulary list in Google Docs (to be uploaded to Moodle later) while they listen to a lecture topic that introduces new terminology.

Class Tip: Assign learners different roles in activities. For example, learners can take turns moderating an online discussion, being the session recorder, leading a research group, etc. If you have a learner who is struggling with his or her written output due to a learning disability, you could encourage him or her to choose an alternative way of showing what he or she has learned. The learner might choose to record a podcast report, for example, which can be shared with others in the class.

2. Principle: **Create learning choices.** Learners will be more engaged when given opportunities to choose topics, activities and formats of projects.

Moodle Tip: Create a project to expand on something that your learners have studied. Allow projects to be built around this theme, and presented using any digital resources available and with combinations of media, if desired. For example, a study of crops might lead to a podcast interview on genetic engineering, images of climate change, facts and tables on nutrition, an essay on sustainable agriculture practices or labour practices, etc. Let the project theme and presentation method be determined by learner interest. Post all the projects in an online class portfolio.

Class Tip: Develop modular presentations on a theme or topic. Discuss key elements for the presentation (learner directed), form interest groups on what the class views as most important to the topic (learner chosen) and have learners choose their working group according to knowledge or interest. Learners will collaborate with others in their group and then the class will work together for the final assembly of all the group work into a class product.

3. Add your own idea here:

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Add your own Moodle or Class Tip for this idea here:

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## 4.0 Assessing the blended classroom learner

1. Principle: **Communicate how learners will be assessed.** In order for assessment to be fair, learners need to know what is expected so they can direct their learning.

Moodle Tip: Use the online Gradebook feature and keep it up-to-date. Learners tend to stay connected to their learning path when they can follow their progress and see it at any time. It also helps them break free of the notion that assessment is for the teacher's/instructor's benefit, a means of creating a report card or certificate. Access the Moodle Gradebook through the link on the Administration block from your course page (*Using Moodle*).

Class Tip: At the start of a lesson or unit, identify how learners will be assessed on their work. If you use rubrics for this, learners will begin to see and understand what levels of knowledge you are looking for. If learners understand the expectations before they begin an activity they will focus on and explore the stated dimensions as they work, which should result in better learning outcomes. In effect, rubrics provide a cognitive framework for the learners.

2. Principle: **Develop self-evaluation and peer-evaluation practices.** These practices create ownership of and responsibility for learning. Through reflection, a deeper understanding of what has been learned is also gained.

Moodle Tip: Upon completion of a group presentation, have the other class groups post group feedback online and have the presenting group post a self-review. This type of peer-evaluation builds community and is less intimidating than providing individual feedback in a “public” online forum. In Moodle, this could be structured as either a more complex exercise by using discussion forums or a quick and simple exercise by using the survey tool. To create a survey, turn on the editing function. From the “add an activity” menu, select “survey” (*Using Moodle*).

Class Tip: Make self-evaluation a regular practice to teach learners to self-regulate and connect back to the learning outcomes of the course. Self-evaluations can be kept in a learner portfolio. Over time, these self-assessments allow you and the learners to note areas of strength and areas in need of improvement. A self-evaluation mark,

based on a number of activities, could be made part of the formal final mark. Self-reflection and keeping a journal both help learners appreciate their progress and learning.

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Add your own Moodle Tip or Class Tip for this idea here:

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## 5.0 Managing the blended classroom learner

1. Principle: **Monitor and stimulate involvement.** The art of teaching is knowing when to step in to encourage learning, and when to step aside to get out of the way of learning.

Moodle Tip: Have learners write a five-minute blog summary of a lesson, tying it to the stated learning outcomes, impressions, feedback, etc. Blogs are difficult to sustain, but they can be useful for recording short, individual reflections. Blogs are user-based and learners access their own through their profile page. By default, blog posts are viewable by all class members. Ask learners to use a specific title and date marker so you can view all the comments easily.

Class Tip: The lecture does not need to be entirely discarded in blended learning classes. A short lecture followed by learner participation activities, both in class and online, creates a dynamic and engaging experience. Learners are more likely to pay attention and participate in a lesson if they know it will include questions that they have to answer (either synchronously or asynchronously) by way of an online survey or vote.

2. Principle: **Be clear and consistent about online and classroom expectations.** In a blended classroom, where the online and face-to-face environments merge, expectations can become confusing

to learners. You need to pay extra attention to plan directions and consistent communications.

**Moodle Tip:** Set standards for class communications. Have the learners discuss, create and agree to online and class protocol. For example, learners might agree that all comments on student work should be positive or constructive. Learners are highly adept at self-regulation when they have participated in forming the guidelines with their peers. A class etiquette guide could be featured on the Front Page or accessed from a common course location.

**Class Tip:** Establish the terms of flexible, asynchronous time in the class. Without structure or short-term purpose, learners who are given an asynchronous classroom task online are likely to defer the work until later, preferring to socialise, check email, send text messages or use FaceBook for off-task purposes. Asynchronous work does not have to be avoided, but it must be structured and learners made accountable for what they have accomplished at the end of a class. However, some teachers/instructors may feel that flexibility and learner choice is more important than insisting learners be “on task” in these cases. Further, what is currently considered “off-task” can be misleading as learners move in the direction of knowledge networking using mobile devices and learning connections.

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Add your own Moodle Tip or Class Tip for this idea here:

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As noted at the end of **Section 5: Online Delivery**, many resources are available on the Web to guide you in your use of Moodle. In addition, <http://moodle.org/> is a dependable website with links to a community of Moodle users who can provide a wealth of information. Blended classroom practices will most probably be the focus of more educational websites once the pedagogical principles of blended delivery are better and more widely understood.



# Part 2

## **Background**





## 1.0 Purpose

The aim of this teachers' guide is to help all teachers/instructors make best use of the OER materials. However, we asked the Namibian team to give write-ups on their subjects so that the information could be seen in a real-life context. The guide is therefore generic, but this section focuses on Namibian examples. Most of the information in this part will apply to all five subjects. Subject-specific guidelines are dealt with in **Part 3: An Overview of OER Materials:**

**Section 1: Open Educational Resources (OER): English**

**Section 2: Open Educational Resources (OER): Entrepreneurship**

**Section 3: Open Educational Resources (OER): Geography**

**Section 4: Open Educational Resources (OER): Life Science**

**Section 5: Open Educational Resources (OER): Physical Science**

## 2.0 Administrative procedures

Registration information and/or OER course materials are available on institutional websites. Some of these are:

Commonwealth of Learning (COL): [www.col.org](http://www.col.org)

Namibian College of Open Learning (NAMCOL):  
[www.namcol.com.na](http://www.namcol.com.na)

National Institute of Educational Development (NIED):  
[www.nied.edu.na](http://www.nied.edu.na)

Ministry of Education of the Republic of Namibian (MoE):  
[www.moe.gov.na](http://www.moe.gov.na)

Ministry of Education, Seychelles: [www.education.gov.sc/](http://www.education.gov.sc/)

Ministry of Education and Training, Lesotho:  
[www.gov.ls/education/](http://www.gov.ls/education/)

Ministry of Education Trinidad & Tobago: [www.moe.gov.tt/](http://www.moe.gov.tt/)

National Open School of Trinidad & Tobago (NOSTT):  
[www.moe.gov.tt/NOSTT/](http://www.moe.gov.tt/NOSTT/)

Ministry of Education and Skills Development, Botswana:  
[www.moe.gov.bw/](http://www.moe.gov.bw/)

Botswana College of Distance and Open Learning (BOCODOL):  
[www.bocodol.ac.bw/](http://www.bocodol.ac.bw/)

Ministry of Education Zambia: [www.moe.gov.zm/](http://www.moe.gov.zm/)

## **3.0 Learner group: Namibia**

### **3.1 Who are the OER materials for?**

The OER materials were produced to assist learners in Namibia who are categorised as follows:

- Out-of-school youth who want to improve their Grade 10 results. This group's main aim is to improve their academic achievements to improve their prospects of completing their secondary education.
- Older and mature people who are either unemployed or self-employed and want to learn new skills or upgrade their existing skills. This group consists of adult learners who want to improve their ability to compete in the job market and/or self-employed businesses.

*In Namibia, about 80 per cent of Grade 10 learners and out-of-school youth want to finish their secondary education; 15 per cent of adult learners and 5 per cent of business people (that is, self-employed people) want to upgrade their skills and knowledge.*

### **3.2 Demographics of the target learners**

The OER materials were produced to assist both male and female learners, typically between the ages of 16 to 45 years, in both rural and urban settings. In Namibia, the target learners include both male and female learners, in the ratio of 1:3. The age distribution is 16–45 years with the majority of learners ranging between the ages of 19 and 29. The learners are widely spread over Namibia with the biggest concentration being found in the northern region (rural areas) of the country followed by the central region (urban areas). The majority of the learners are not engaged in paid employment.

## 4.0 Course materials

Print-based course materials are available on CD-ROM and can be downloaded from the websites listed under **2.0 Administrative procedures**. The CD-ROM contains the module and folders with additional resources, multimedia resources and/or teacher resources. Note that not all subjects have multimedia resources.
























### 4.1 How the course modules are structured

Gagné's Nine Events of Instruction was used in the development of the course content (SAIDE Notes 2009; see [http://www.nwlink.com/~donclark/hrd/learning/id/nine\\_step\\_id.html](http://www.nwlink.com/~donclark/hrd/learning/id/nine_step_id.html) or [http://de.ryerson.ca/portals/de/assets/resources/Gagne%27s\\_Nine\\_Events.pdf](http://de.ryerson.ca/portals/de/assets/resources/Gagne%27s_Nine_Events.pdf)).

Each course is broken down into units, and each unit comprises the following:

- **An introduction to the unit content:** This is a brief introduction that tells you what will be discussed in the unit.
- **Time frame:** This indicates the time that it should take you to work through the unit.
- **Unit outcomes:** The outcomes give you an indication of the basic competencies learners need to gain by working through this unit. The teacher/instructor should make learners aware of the importance of these outcomes.
- **Terminology:** This lists and explains the key concepts that are covered in the unit.
- **Core content of the unit with a variety of learning activities:** The content is self-instructional. It is presented in a learner-friendly, interactive style inspired by Kolb's Learning Cycle (SAIDE, unpublished notes, 2009; see [www.nwlink.com/~donclark/hrd/styles/kolb.html](http://www.nwlink.com/~donclark/hrd/styles/kolb.html)). The content includes numerous questions and activities such as in-text questions, reflections, discussions, assignments and/or practical activities and case studies that teachers/instructors can use in face-to-face classes. The multimedia content included in the course materials requires the use of specific technology.
- **Unit summary:** Each unit ends with a summary that highlights the main points discussed in the unit.

- **Assignments and/or assessments:** These are included in each unit in order to assess the learning outcomes.
- **Feedback:** Sample answers are given for activities and assignments at the end of each unit. Feedback on assessments is provided as part of the teacher resources.
- **Resources:** Additional resources that can be used to enhance learners' understanding of the content are given at the end of each unit.
- **Icons:** The icons below are used in both the print-based and online course modules. Note that these icons might be used for different purposes within the various courses.

 Activity	 Assessment	 Assignment	 Case study
 Discussion	 Group activity	 Help	 Note!
 Outcomes	 Reading	 Reflection	 Study skills
 Summary	 Terminology	 Time	 Tip
 Computer-based learning	 Audio	 Video	 Feedback
 Objectives	 Basic competence	 Answers to assessments	

## 4.2 Time frame

The courses are expected to be completed within a specific time frame as outlined in each subject course. The courses covered in this guide should be finished within one year. The number of hours you spend on each course will probably depend on the length of the course. Learners might spend less time on shorter units and more time on the longer units.

## 5.0 Implementation of the course

The requirements for implementing the course will differ depending on the delivery mode you choose.

The materials are available in print as well as online for those who have access to the Internet. Note that all the content in the courses is compulsory.

The courses (print-based and online) also contain URLs for additional Internet-based resources that you might want to use.

Computer-based learning (CBL) resources, including multimedia resources such as audio, video and PowerPoint presentations, are provided as secondary media to supplement the print medium. These resources can be accessed through technologies such as the Internet and CD-ROM. Some information may be downloaded from the Internet onto CD-ROMs for learners who may not have access to the Internet.

## 5.1 Skills needed to facilitate a course

### Teaching skills

The teacher/instructor should:

- be an experienced educator or trainer,
- know the subject well, and
- be comfortable with facilitating both face-to-face and interactive online classes.

### Technical skills

The teacher/instructor should:

- have basic computer skills, such as word processing skills and familiarity with using email;

- be able to access Internet sites, and download and work with online resources; and
- be comfortable with the use of chat rooms, Facebook, Skype, YouTube and other social media that might be applicable to the course.

## 5.2 Technical requirements

To facilitate an online class both the teacher/instructor and learners must ensure that they meet the following requirements for using a learning management system, such as Moodle:

### Computers

You need up-to-date word processing software plus an Internet browser, email client and sound card. You also need access to the following applications:

- PowerPoint
- Adobe Flash Player
- A media player such as VLC Player
- Social media accounts such as Skype, Facebook, Twitter, etc.

Most of this social media is open source and freely available on the Internet. Visit <http://www.opensourcewindows.org/> to find out more about your options.

### Bandwidth

In order to access the Internet, you will need at least the equivalent of a dial-up connection. Regular access to a stable connection is essential.

**Bandwidth** refers to the rate of data transfer, throughput or bit rate, measured in bits per second (bps). Online video materials contain more data and therefore need at least a slow broadband connection to the Internet in order to be viewed properly. (See <http://searchenterprisewan.techtarget.com/definition/bandwidth> for more on this.)

## 5.3 Facilitating an online class

A teacher/instructor needs to provide learner support via the Web using interactive tools such as Skype, a virtual classroom, chat, Basecamp, online discussion forums, blogs and emails.



**Virtual education** refers to instruction in a learning environment where teacher and student are separated by time or space, or both, and the teacher provides course content through course management applications, multimedia resources, the Internet, videoconferencing, etc. Students receive the content and communicate with the teacher via the same technologies.

([http://en.wikipedia.org/wiki/Virtual\\_education](http://en.wikipedia.org/wiki/Virtual_education))

Before beginning a course, a teacher/instructor must decide which interactive tools will be used in the course, as well as where and when they will be used. It is important to become familiar with the tools so that you can use them with confidence and ease when teaching and supporting learners.

## 5.4 Facilitating a face-to-face class

The course materials are self-instructional, which means that the learners can work through the materials by themselves. The teacher/instructor should ensure that all the required materials are available (see **4.1 How the course modules are structured**).

However, the teacher/instructor should:

1. Work through the outcomes and the terminology with the learners.
2. Remind the learners about the time frame and make sure they have enough time to do the activities and assignments.
3. Work through the content with the learners, paying special attention to the in-text questions, reflections, discussions, practical activities and case studies.
4. Make sure the learners know about the multimedia content provided with some subjects. The multimedia content included in the course materials can all be accessed through at least one of the following media:
  - Fully equipped computer laboratory with Internet connection
  - Multimedia projector
  - TVs and DVD players
  - CD players
  - Accessible school library
5. Ensure that assessments are completed and submitted on time.

## 6.0 Support, monitoring and evaluation

### 6.1 Support

Contact details and information about administrative matters and learner support will be provided at registration. This information will be specific to each institution.

Face-to-face facilitation can be supported by the use of email. For online courses, learner support is provided via the Web: Skype (virtual classroom), chat, online discussion forum, blogs and email.

### 6.2 Assessment and evaluation

Both the print-based and online courses use various assessment tools, including in-text questions or reflections, discussion activities and forums, quizzes, practical activities, assignments and case studies, which are either self-mark or tutor-marked activities. The assessment method(s) will be specified within the unit. Self-mark activities will have a Feedback section at the end of a unit. Assignments are tutor-marked. Unlike feedback resources for self-mark activities, feedback on assignments and other tutor-marked activities are part of the teacher resources which means that learners cannot access them. The institution should draw up the due dates for tutor-marked assessments (such as assignments) every year.

After completing each course, learners must complete a course feedback form (included with each course).

**Course Feedback Form**

Congratulations on completing the course. We would appreciate it if you would take a few moments to give us your feedback on the following aspect of the course. Your constructive feedback will help us to improve and enhance the course.

Please note: To check a box, double click in the wanted box and select 'checked' in the dialog window.

1. On a scale from 1-5, 5 being the strongest, how would you rate the course content and the way that it was presented?

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click in this box and add additional comments here

2. On a scale from 1-5, 5 being the strongest, how would you rate the course reading materials and resources?

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click in this box and add additional comments here

3. On a scale from 1-5, 5 being the strongest, how would you rate the course activities?

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click in this box and add additional comments here

4. On a scale from 1-5, 5 being the strongest, how would you rate the course assignments?

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click in this box and add additional comments here

5. On a scale from 1-5, 5 being the strongest, how would you rate the course assessments?

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click in this box and add additional comments here

6. On a scale from 1-5, 5 being the strongest, how would you rate the course support (assigned tutors, relevant help, etc.)?

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click in this box and add additional comments here

7. On a scale from 1-5, 5 being the strongest, how would you rate the course duration?

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click in this box and add additional comments here

General comments:

Click in this box and add additional comments here

Thank you for completing this course evaluation form.

Please email or mail your completed form to the course tutor.

## 7.0 Resources

Each course contains links to extra Web resources and a list of books for further reading. Other additional resources are available on CD-ROMs and/or DVDs.

**Part 3: An Overview of OER Materials** shows extracts from a selection of courses and gives more details about their structure. It will guide you through a typical course, giving you tips about timings and introducing you to teaching techniques.

By the time you have finished reading this guide you should have a sound knowledge of current approaches to distance learning, in all its forms. You should feel confident about embracing this innovative and inclusive method of teaching.



# Part 3

## **An Overview of OER Materials**





# Introduction

The following OER materials were developed in collaboration with the Ministry of Education (MoE) of the Republic of Namibia and the Namibian College of Open Learning (NAMCOL):

- JSC English Second Language
- JSC Entrepreneurship
- JSC Geography
- JSC Life Science and
- JSC Physical Science

Each subject uses a selection of icons to guide you through the material. See **Part 2, 4.1: How the course modules are structured** for the complete set of icons.

# SECTION 1

## **JSC Open Educational Resources (OER) Teachers' Guide: English Second Language**

### **1.0 Introduction**

This section of the teachers' guide focuses on the facilitation of the JSC English Second Language Course. It is intended for the teachers/instructors who will facilitate the print-based and/or online courses for learners. In this section, we will look at the following information to help you assist learners taking the JSC English Second Language Course:

- General information
- What is covered in the course material
- How to use the course material
- Resources

### **2.0 General information**

Like any language, English needs to be learned at home or studied in a classroom, which involves a lot of work and effort. Many learners make the mistake of thinking that English can be easily acquired, despite its numerous rules and exceptions to those rules. English is becoming more common as an international language and it is constantly developing. For example, it is always borrowing words from other languages. This puts pressure on the learner to try to master as many English words as possible, new and old. The learner should also note that we are living in an era of globalisation, which means that the world has become more like a village. Effective communication, which is best achieved by people using a common language, is vital. Therefore, this course has been



written specifically for distance learners who want to learn English. As a subject, English Second Language falls within the Linguistic and Literacy area of learning, but it has thematic links to other subjects across the curriculum.

The JSC English Second Language Course is available on CD-ROM as well as online (see [www.col.org](http://www.col.org) and [www.namcol.com.na](http://www.namcol.com.na)). The CD-ROM contains both the module and additional resources and teacher resources.

### 3.0 What is covered in the course material?

This course consists of 15 units based on the JSC English Second Language curriculum, and is designed to develop functional literacy and language skills in English. It is intended for people who want to develop their communicative skills for meaningful interaction in a multilingual, multicultural and knowledge-based society.

The English Second Language Course promotes the following general aims:

- supporting creativity and intellectual development;
- helping learners develop self-confidence and a better understanding of the world in which they live;
- developing positive attitudes and values, and an understanding of local, social and cultural issues; and
- developing greater awareness of health and population issues, information and communication technology, democracy and human rights, HIV and AIDS, and the environment; understanding individual responsibilities regarding these; and enabling learners to talk, read and write about the issues and responsibilities.

The learning content in this course is divided into two main parts:

**Units 1–9:** Four Domain Language Skills: reading, writing, speaking and listening

**Units 10–15:** Literature: *Calabash* and *The Other Presence*

The units' topics/themes are as follows:

<b>Unit 1:</b> Life in Namibia	<b>Unit 9:</b> Sports
<b>Unit 2:</b> Health and Water	<b>Unit 10:</b> Literature: <i>The Other Presence</i> : Chapters 1–6
<b>Unit 3:</b> Rights and Responsibilities	<b>Unit 11:</b> Literature: <i>The Other Presence</i> : Chapters 7–15
<b>Unit 4:</b> Population Education	<b>Unit 12:</b> Literature: <i>The Other Presence</i> : Chapters 16–20
<b>Unit 5:</b> Gender Issues	<b>Unit 13:</b> Literature: <i>Calabash</i> : Non-fiction Stories
<b>Unit 6:</b> Hobbies	<b>Unit 14:</b> Literature: <i>Calabash</i> : Fiction Stories
<b>Unit 7:</b> Supernatural	<b>Unit 15:</b> Literature: <i>Calabash</i> : Humorous Stories
<b>Unit 8:</b> Advertising	

The learning outcomes are indicated at the beginning of each unit. The outcomes indicate the basic knowledge, understanding, skills, attitudes and concepts that learners should achieve with regard to the learning content. The outcomes are used for assessing whether or not learners have mastered the skills they have practised in each unit.

## 4.0 How to use the course material

### 4.1 Time frame

The JSC English Second Language Course has 15 units and will take approximately 113 hours to complete. You should allow about 5–7 hours to work through a unit, including the homework and assessments, but this will vary according to the length of the unit. The suggested time frame is really intended to help learners plan their time and organise their study timetable. Learners should not worry if they find that they take more time, or less time, than that suggested. Some people work faster or slower than others.

### 4.2 Assessments

At the end of each unit there is an assessment task which the learner must complete and send to his or her tutor to be marked. This work contributes to the continuous assessment marks (CA) according to the curriculum requirements. If learners have questions about the assessment tasks, or if there are parts of the course that they find difficult, they can ask their teacher/instructor for help. The teacher/instructor gives feedback on

assessment tasks and sends them back to the learner. Learners can also telephone their teacher/instructor if they need help.

Learners should do their best to send in all their assessment tasks. It is good preparation for their final examination and it contributes to the CA. The CA mark is out of 100 and is based on the assessment tasks. It counts for 50 per cent of the final examination, so it can make a big difference to the final mark. More importantly, without a CA mark, learners cannot pass the end-of-year exam. They only get the code I, which stands for incomplete marks (in this case, meaning that the exam is incomplete). Therefore, it is very important that you encourage your learners to submit all their assignments.

## 5.0 Resources

### Audio

The JSC English Second Language Course includes audio for each unit.

**Note:** You will need a media player such as MPlayer, VLC or Audacity to play the audio for this course. You can download any of these from the Internet.

A list of additional Internet resources for enrichment and further study or reading is provided at the end of each unit of this course.

- Simple present tense: <http://www.grammar.cl/Present/Simple.htm>
- Simple present tense notes: [http://www.eslcafe.com/grammar/simple\\_present\\_tense01.html](http://www.eslcafe.com/grammar/simple_present_tense01.html)
- Prefixes and suffixes: [http://en.wikipedia.org/wiki/English\\_prefixes](http://en.wikipedia.org/wiki/English_prefixes)
- Simple past tense: [http://www.englishclub.com/grammar/verb-tenses\\_past\\_u.htm](http://www.englishclub.com/grammar/verb-tenses_past_u.htm)
- Simple past tense: [http://www.eslcafe.com/grammar/simple\\_past\\_tense03.html](http://www.eslcafe.com/grammar/simple_past_tense03.html)
- Simple future tense: <http://www.znanje.org/knjige/english/grammar/verbs/simplfuture.htm>
- What is a conjunction? <http://www.uottawa.ca/academic/arts/writcent/hypergrammar/conjunct.html>
- Present continuous tense: <http://esl.fis.edu/grammar/rules/prescont.htm>

- Adjectives: [http://esl.about.com/od/grammarforbeginners/a/adjective\\_use.htm](http://esl.about.com/od/grammarforbeginners/a/adjective_use.htm)
- Writing a descriptive essay: <http://www.writeexpress.com/descriptive-essay.html>
- Past continuous tense: <http://web2.uvcs.uvic.ca/elc/studyzone/330/grammar/pascon.htm>
- Prepositions: <http://www.world-english.org/prepositions.htm>
- Writing an argumentative essay: <http://www.jamesabela.co.uk/exams/argumentativeessays.pdf>
- Future continuous tense: <http://www.englishpage.com/verbpage/futurecontinuous.html>
- Tenses illustrated: <http://www.learnenglish.de/PictureIt/tensespage.htm>
- Active and passive voice: <http://www.englishclub.com/grammar/verbs-voice.htm>
- Examples of similes: <http://www.saidwhat.co.uk/spoon/similes.php>
- Similes and metaphors: <http://languagearts.pppst.com/similes.html>
- What is a pun? <http://www.wisegeek.com/what-is-a-pun.htm>
- Novels: [http://www.saskschools.ca/curr\\_content/elaa10/adventure/independent\\_book\\_study/independent\\_book\\_study.htm](http://www.saskschools.ca/curr_content/elaa10/adventure/independent_book_study/independent_book_study.htm)

# SECTION 2

## **JSC Open Educational Resources (OER) Teachers' Guide: Entrepreneurship**

### **1.0 Introduction**

This section of the teachers' guide focuses on the facilitation of the JSC Entrepreneurship Course. It is intended for teachers/instructors who will facilitate the print-based and/or online courses to learners. In this section, we will look at the following information to help you assist learners who are taking the JSC Entrepreneurship Course:

- General information
- What is covered in the course material
- How to use the module
- Resources

### **2.0 General information**

Entrepreneurship as a subject has been developed to bring about a productive and positive mind set, reduce poverty, provide entrepreneurial skills, lower the unemployment rate, make learners more trainable and provide self-employment opportunities. The subject focuses mainly on micro-medium enterprises. By doing this course, learners should gain the basic knowledge and entrepreneurial skills they need to create their own jobs and run their own small businesses successfully in the future.

The JSC Entrepreneurship Course is available on CD-ROM as well as online (see [www.col.org](http://www.col.org) and [www.namcol.com.na](http://www.namcol.com.na)). The CD-ROM contains both the module and folders with additional resources and teacher resources.

The Entrepreneurship Course does not include multimedia resources but links to external multimedia resources are provided in each unit. These multimedia resources can either be audio or video clips that are available on social websites such as YouTube and Facebook.

### **3.0 What is covered in the course material?**

To be able to teach successfully or facilitate learning it is important that you as the teacher/ instructor are clear on what learners should know.

The learning content in this course is divided into three main themes/ topics:

**Theme 1:** Entrepreneurial traits and culture

**Theme 2:** Scanning the environment for business opportunities

**Theme 3:** Managing a small-to-medium business successfully

The learning outcomes as indicated at the beginning of each unit are derived from these themes. The outcomes indicate the basic knowledge, understanding, skills, attitudes and concepts that learners should achieve with regard to the learning content.

These themes are dealt with as follows in the module:

**Units 1-4:** Entrepreneurial traits and culture

**Units 5-7:** Scanning the environment for business opportunities

**Units 8-12:** Managing a small-to-medium business successfully



The outcomes are used for assessing whether or not learners understand the subject content.

## 4.0 How to use the module

### 4.1 Time frame



You should expect to complete this course in 30 weeks or 150 hours. This allows approximately 12 hours per unit and 2 hours per assessment.

Learners are guided on the time that they should spend on working through a unit at the beginning of the unit.

 Time	You can spend approximately 12 hours to work through this unit. Don't worry if you spend less time on this unit because the number of hours per unit is flexible. You might spend less time on shorter units and more time on the longer units.
 Note it	Throughout the course, you will be given assessment. Click on

Learners are also given guidance on how much time should be spent on each activity.

Do the following activity to find out whether you understand the concept of social responsibility. It should take you about 10 -15 minutes to answer the questions.







 Discussion 1	Your community has a very high unemployment rate and due to this, crime and violence are prevalent as well as the use/abuse of alcohol and drugs, especially smoking. What can your community do to fight these issues and improve their standard of living?
 Tip	Some individuals: <ul style="list-style-type: none"><li>• Provide education.</li><li>• Work with the alcohol and drug addicts, e.g., like Telecom Namibia that has the Nova Vita Centre for the alcohol and drug addicts where they can rehabilitate.</li></ul>

### 4.2 Assessment tools

It is important to assess whether learners have achieved the outcomes that are indicated at the beginning of each unit. The outcomes are the basis for assessing whether or not learners understand the subject content.

Note that these assessment activities are not meant to limit the initiative of the teacher/instructor in any way.


The content includes numerous questions and activities not only to test whether the learner has understood the work but also to test the learner’s general knowledge. For example:


<p><b>Reflections</b></p>	 <p>Reflection</p>	<p>Suppose you were at the Hosea Kutako Airport with a paid-for reservation, and the airline clerk told you that no seat was available. Someone then calls you aside and says that there are seats available, and that for NS300 the clerk will assign you one. There is an important company meeting the next afternoon in Cape Town, and that is the last plane that can get you there on time. What would you do?</p>
<p><b>Discussions</b></p>	 <p>Discussion 1</p>  <p>Tip</p>	<p>Do businesses exist alone or do they interact with people or institutions in the community? What is your opinion? Spend about 20-30 minutes and discuss this with people around you.</p> <p>You might want to discuss the responses you’ve received and comment on the one’s that you thought were the most logical and practical using internet sites like Facebook and Twitter.</p> <p><i>Look at the small and medium sized businesses around you or in your community.</i></p>
<p><b>Practical activities</b></p>	 <p>Practical Activity 4</p>  <p>Tip</p>	<p>Do the following activity before you go on. You can spend around 30 minutes to do practical activity 5.</p> <p>Find people in your community that are in either paid employment or self employment. Interview these people to get their views on the differences between being in self or paid employment. Write down these differences in tabular form in your notebook.</p> <p><i>Reference should be made to challenges and benefits of both types.</i></p>
<p><b>Assignments</b></p>	 <p>Assignment</p>	<p><b>Assignment</b></p> <p>The following questions are based on the content discussed in this unit. You should take about 30 minutes to answer the following questions.</p> <ol style="list-style-type: none"> <li>1. Explain the meaning of business ethics.</li> <li>2. List any four desirable business ethics.</li> <li>3. Explain the following ethic: <b>Punctuality</b> <a href="#">Return to course</a></li> <li>4. Explain the meaning of the following concepts: <b>xenophobia</b> and <b>affirmative action</b>. <a href="#">Return to course</a></li> <li>5. Explain in your own words how you would practise desirable ethics towards employees. <a href="#">Return to course</a></li> <li>6. Define the term: Career</li> <li>7. Differentiate between white and blue <b>collar</b> careers. <a href="#">Return to course</a></li> <li>8. Compare the benefits of self employment with that of paid employment. <a href="#">Return to course</a></li> </ol>


Assignments and case studies are self-mark. There is at least one case study activity and one assignment in each unit. Feedback is provided at the end of each unit.



**Note:** Although the assignment is only given at the end of a unit, learners are encouraged to answer questions as they work through the unit content.

Feedback	
 Assignment	<ol style="list-style-type: none"> <li>1.               <ol style="list-style-type: none"> <li>a) Small miners dig for precious stones and sell these to tourists and other buyers.</li> <li>b) They catch fish and sell the fish to the local community and shops.</li> <li>c) They weave baskets from materials they get from the <u>Makalani</u> palm and sell the baskets to local people and tourists.</li> <li>d) They prepare the hides and sell the products made from it next to the road to tourists but also to local people at agricultural shows.</li> </ol> </li> <li>2. All businesses depend on the natural environment although the degree of dependency differs between different types of businesses. Businesses such as agribusinesses, mining, manufacturing and construction get raw materials from natural environment. Other businesses (in secondary and tertiary sectors) get their raw materials from other businesses.</li> </ol>


 Case Studies	<b>Case Study 3</b> <ol style="list-style-type: none"> <li>1. The process of control requires the manager to identify the key performance indicators of the business, which will show if the business is operating well or poorly.</li> <li>2.               <ul style="list-style-type: none"> <li>- Measure performance in relation to the standards she has set for her business</li> <li>- Analyse the problems and inform workers about it.</li> <li>- Apply remedial action to correct the problems</li> <li>- Re-evaluate workers' performance</li> <li>- If the problems still exist, continue with the remedial action.</li> </ul> </li> </ol>
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<b>Practical Activity 2</b>   Tip	<p>the people and businesses in Namibia?</p> <ul style="list-style-type: none"> <li>• If you would be the owner of a business someday, how will you operate your business and how would your behaviour be towards your customers. What do you expect from your employees?</li> <li>• Activities should include examples of bribery, extortion, theft, discrimination, etc.</li> <li>• Expectation for the Namibian nation should be from an ethical perspective.</li> <li>• Remember that what you do unto others will also be done unto you.</li> </ul>										
<p>It is important to create and maintain ethical conduct in a business. Ethical behaviour creates goodwill and reputation that expand opportunities.</p> <p>The following are examples of ethics which are important in the business world:</p> <table border="1"> <tbody> <tr> <td><b>Honesty and integrity:</b></td> <td>It means not telling lies, not cheating and not stealing. Integrity means the quality of being honest and upright in character.</td> </tr> <tr> <td><b>Loyalty:</b></td> <td>It means to be faithful to your employers, employees and customers.</td> </tr> <tr> <td><b>Punctuality:</b></td> <td>It means to arrive on time at your workplace and for meetings, and to complete commitments on time, to keep appointments and to honour deadlines. A lack of punctuality is a sign of disrespect.</td> </tr> <tr> <td><b>Fairness:</b></td> <td>It means to treat other people in the same way as you wish or expect them to treat you.</td> </tr> <tr> <td><b>Harassment free/ non sexual environment:</b></td> <td>Sexual harassment occurs when someone makes sexual suggestions or constantly says things relating to sex that make another man or woman feel uncomfortable, or when someone touches another person sexually without being encouraged or invited to do so. E.g. A manager can sexually harass his or her secretary or a subordinate.</td> </tr> </tbody> </table>		<b>Honesty and integrity:</b>	It means not telling lies, not cheating and not stealing. Integrity means the quality of being honest and upright in character.	<b>Loyalty:</b>	It means to be faithful to your employers, employees and customers.	<b>Punctuality:</b>	It means to arrive on time at your workplace and for meetings, and to complete commitments on time, to keep appointments and to honour deadlines. A lack of punctuality is a sign of disrespect.	<b>Fairness:</b>	It means to treat other people in the same way as you wish or expect them to treat you.	<b>Harassment free/ non sexual environment:</b>	Sexual harassment occurs when someone makes sexual suggestions or constantly says things relating to sex that make another man or woman feel uncomfortable, or when someone touches another person sexually without being encouraged or invited to do so. E.g. A manager can sexually harass his or her secretary or a subordinate.
<b>Honesty and integrity:</b>	It means not telling lies, not cheating and not stealing. Integrity means the quality of being honest and upright in character.										
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<b>Punctuality:</b>	It means to arrive on time at your workplace and for meetings, and to complete commitments on time, to keep appointments and to honour deadlines. A lack of punctuality is a sign of disrespect.										
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<b>Harassment free/ non sexual environment:</b>	Sexual harassment occurs when someone makes sexual suggestions or constantly says things relating to sex that make another man or woman feel uncomfortable, or when someone touches another person sexually without being encouraged or invited to do so. E.g. A manager can sexually harass his or her secretary or a subordinate.										
<p>Can you imagine a world without ethics? Ethics are essential for the efficiency of an organisation.</p> <p>Now take a few minutes and do <a href="#">question 1 - 3</a> of the assignment to test your understanding. You can compare your answer with the feedback given at the end of the unit.</p>											
<p>Hope you did well in answering the questions. Let's do the following activity. You</p>											

Links are provided that take you directly to the questions

AND



The following questions are based on the content discussed in the video. You will have about 30 minutes to answer the following questions.

 <b>Assignment</b>	<ol style="list-style-type: none"> <li>1. Explain the meaning of business ethics.</li> <li>2. List any four desirable business ethics.</li> <li>3. Explain the following ethic: <b>Punctuality</b></li> <li>4. Explain the meaning of the following concepts: <b>xenophobia</b> and <b>affirmative action</b>.</li> <li>5. Explain in your own words how you would practise desirable ethics towards employees.</li> <li>6. Define the term: <b>Career</b></li> <li>7. Differentiate between white and blue <b>collar</b> careers.</li> <li>8. Compare the benefits of self employment with that of paid employment.</li> </ol>
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to take you back to where you last worked in the content.

[Return to course](#)

There are three assessment activities in this course. The assessments should be completed at the end of a theme before you move on to the next unit.

 <b>Assessments</b>	<b>Entrepreneurship Assessment 1</b> <i>It is based on work discussed in Unit 1 – 4</i>	<b>Entrepreneurship Assessment 2</b> <i>It is based on work discussed in Unit 5 – 7</i>
<b>Question 1</b> Beliefs and values Every individual has different beliefs and values. Discuss the role of beliefs and values in career guidance.	<b>Section A</b> <ol style="list-style-type: none"> <li>1. List any three factors that influence the choice of a career.</li> <li>2. List and explain any two of the factors.</li> <li>3. State one other use of the factors.</li> <li>4. State three characteristics of a good career.</li> <li>5. Define the concept of a career.</li> </ol> <b>Section B</b> <b>Question 1</b>	<div style="text-align: center;">   <b>Assessments</b> </div> <div style="text-align: center;"> <b>Entrepreneurship Assessment 3</b>  <i>It is based on work discussed in Unit 8 – 12</i> </div> <div style="text-align: center;"> <b>Section A</b> </div> <b>Question 1</b> <ol style="list-style-type: none"> <li>1.1 List four management tasks.</li> <li>1.2 Name any four elements of the natural environment.</li> <li>1.3 Differentiate between a leader and a manager.</li> <li>1.4 Name two forms of communication in business.</li> <li>1.5 Explain why feedback is so important in communication in business.</li> </ol> <div style="text-align: center;"> <b>Section B</b> </div> <b>Question 2</b> Read the following case study and answer the questions that follow:

## 5.0 Resources

A list of additional resources for further reading is provided at the end of each unit of the Entrepreneurship Course material.

Internet resources include articles and audio and video links.

Additional resources available on CD-ROMs include practical activities, case studies and assignments (in both Word and PDF format), which learners can download at their convenience.

### Resources

Below are additional resources which you can use for enrichment.

**Internet-based resources**

1. [Organisational culture](#)
2. [Top 7 Myths About Starting a Small Business](#)
3. [Unskilled, Semi-Skilled and Skilled Work – What Do These Terms Mean?](#)
4. [Skilled and Unskilled \[work\]](#)
5. [General guidelines for conducting interviews](#)
6. [Informational-Interview Questions for Entrepreneurs](#)

**Other documents found on CD**

You can open and print the following resources for your convenience.

[Practical Activities](#)  
[Case Studies and feedback](#)  
[Assignment and feedback](#)

# SECTION 3

## **JSC Open Educational Resources (OER) Teachers' Guide: Geography**

### **1.0 Introduction**

This section of the teachers' guide focuses on the facilitation of the JSC Geography Course. It is intended for teachers/instructors who will facilitate the print-based and/or online courses for learners. In this section, we will look at the following information to help you assist learners taking the JSC Geography Course:

- General information
- What is covered in the course material
- How to use the module
- Resources

### **2.0 General information**

Geography is a fascinating and wide-ranging subject. It is a study of the Earth and the interaction between the human race and nature. We, as humans, are totally dependent on the Earth. In Geography we will study how humans use nature to meet their needs and demands, and also how we can use the environment in a sustainable way.

The JSC Geography Course is available on CD-ROM and online (see [www.col.org](http://www.col.org) and [www.namcol.com.na](http://www.namcol.com.na)). The CD-ROM contains both the module and folders with additional resources and teacher resources.

The Geography Course includes multimedia resources and links to external multimedia resources are provided in each unit. These

multimedia resources can either be audio or video clips that are available on social websites such as YouTube and Facebook. The following multimedia resources are available:

- Videos
- PowerPoint presentations

### **3.0 What is covered in the course material?**

To be able to successfully teach or facilitate learning it is important that you as the teacher/instructor are clear on what learners should know.

The learning content in this course is divided into six units:

**Unit 1:** Map Work

**Unit 2:** Climatology

**Unit 3:** Ecology

**Unit 4:** Geomorphology

**Unit 5:** Population Geography

**Unit 6:** Regional Geography of Namibia

Each unit is divided into sections that deal with specific topics. For example:

**Unit 1:** Map Work

**Section 1** How to interpret (read) a map

**Section 2** Scale and distance on maps

**Section 3** Contour lines, landforms and intervisibility

**Section 4** Determining location

**Section 5** Photographs

**Section 6** Map orientation, directions and bearing

The learning outcomes are indicated at the beginning of each unit and each section. The outcomes indicate the basic knowledge,

understanding, skills, attitudes and concepts that learners should achieve with regard to the learning content. They are used for assessing whether or not learners understand the subject content.

**Section 1**

**How to interpret (read) a map**

In this section we are going to look at ways in which we can obtain (get) information from maps. ~~If you are not sure what a map is and what maps are used for, read this section carefully.~~ Study the objectives below before proceeding to the content.

By the end of this section you should be able to:


- understand the basic uses of a map
- identify the symbols used on a topographic map.

A map shows a part of the earth on a flat piece of paper. Important information is indicated on physical maps. Look at Figure 1.1 below.

## 4.0 How to use the module

### 4.1 Time frame

You should expect to complete this course in 30 weeks or 150 hours. This allows approximately 25 hours per unit.






How long?

You will need approximately 25 hours to complete the unit.



### 4.2 Assessment tools

It is important that we assess whether learners achieve the outcomes indicated at the beginning of each unit. The outcomes are used for assessing whether or not learners understand the subject content.


The content includes numerous questions and activities not only to test whether the learner has grasped the work discussed but also to test the learner’s general knowledge. For example:

<p><b>Progress exercise</b></p>	<p style="color: red;">Now that you have completed the first section on how to interpret and read maps do progress exercise 1.</p> <p>Progress Exercise 1 (Go to the <a href="#">assignment</a> section to complete the exercise). <b>Just click on the word assignment to access the exercise.</b></p> <div style="border: 1px solid blue; padding: 5px;"> <p style="text-align: center;"><b>Assignment</b></p> <div style="display: flex; align-items: center;">  <div> <p><b>Progress Exercise 1 (Map work)</b></p> <p>Go to the folder with all the print documents and print the exercises. Have a notepad, pencil and ruler ready to do the exercise. Please write your answers on the notepad. If you do not have printing facilities do the exercise directly from the document.</p> </div> </div> <p style="text-align: center; font-size: small; color: blue;">Assignment</p> </div>
<p><b>Assessment</b></p>	<div style="border: 1px solid blue; padding: 5px;"> <p style="text-align: center;"><b>Assessment</b></p> <div style="display: flex; align-items: center;">  <div> <p>Study the map below and answer the questions which follow.</p>  </div> </div> </div>

There are also three separate assignments for distance education learners in Units 2, 4 and 6. They are clearly marked Assignment 1, 2 and 3. Feedback has also been provided for these assignments and is in the teacher resource folder.



<p><b>Assignments for distance learners</b></p>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid blue; padding: 5px; width: 45%;"> <p style="text-align: center;"><b>Assignment 1</b></p> <div style="display: flex; align-items: center;">  <div> <p><b>SECTION A MAPWORK Question 1</b></p> <p>(a) Study the contour map of the questions that follow:</p> </div> </div> <p style="text-align: center; font-size: small; color: blue;">Assignment</p> </div> <div style="border: 1px solid blue; padding: 5px; width: 45%;"> <p style="text-align: center;"><b>Assignment 1 Feedback</b></p> <div style="display: flex; align-items: center;">  <div> <p><b>SECTION A Question 1</b></p> <p>(a) (i) 90m (accept any v (ii) 20m</p> </div> </div> <p style="text-align: center; font-size: small; color: blue;">Assignment</p> </div> </div>
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Sample question papers are provided to help the learner prepare for the examinations. Feedback has also been provided for these assignments and is in the teacher resource folder.

<b>Sample question papers</b>	<b>Sample Question Papers</b>
	<div style="text-align: center;">   <b>Assessment</b> </div> <p>Sample Question Paper. Paper1 <b>QUESTION 1: CLIMATOLOGY</b> (a) The diagram in Figure 1 below shows the Stevenson Screen. Answer the following questions.</p>

Assignments and case studies are self-assessed. Each unit contains at least one case study activity and one assignment. Feedback is provided at the end of each unit.

**Note:** Although the assignment is only given at the end of a unit, learners are encouraged to answer questions as they work through the content.

Trees and bush  Grasslands 

Make sure that you know these symbols when you interpret a map. Remember there will be no map key on the maps used in the examination. Print Activity 1 in the Practical Activity Folder and do the activity to practice your knowledge on Map references.

Now that you have completed the first section on how to interpret and read maps do progress exercise 1.

**Progress Exercise 1** (Go to the [assignment](#) section to complete the exercise). Just click on the word [assignment](#) to access the exercise.

Remember to complete the exercise first and then compare your answers with the answers that have been provided.

Learners are guided through the units by means of linking statements.

Instructions are also given on what the learner should do.

The Progress Exercises are indicated like this throughout the guide. The link will take the learner to the assignment and back again to the course.

If the learner is in the assignment section he or she can complete the assignment and then go to the feedback section to compare his or her answers with those provided. He or she can then click on the link to return to the content (main text).

Feedback has been provided for all the exercises. Complete each exercise on your own and then compare your answers with the answers that have been provided. If you performed poorly in some of the questions repeat them after you have worked through the content again. Press Ctrl + click to go to the feedback or back to the content. This will apply to all the exercises in the course.


[Back to content.](#) [Feedback](#)

**Progress Exercise 2**  
(Scale and distance on maps).  
Draw the linear scale with primary and secondary units where 3 cm equals 5 km.

[Back to content.](#) [Feedback](#)

**Progress Exercise 3**

**Assignment Feedback**

  
**Unit 1 Map work**

Answer to progress exercises 1-8

**Progress Exercise 1**

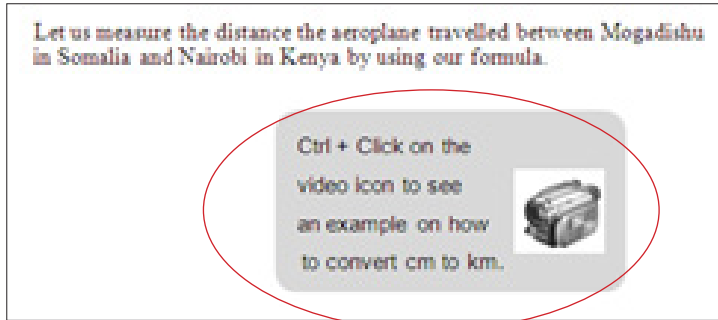
1. 17 is the latitude and 15 the longitude of this area
2. 1100 m – called spot height
3. canal, dry pans, reservoirs oshanas
4. trees and bush
5. huts towns
6. school and hospital
7. main road other road footpaths

[Back to content.](#)



## 5.0 Resources

Multimedia resources are included throughout the unit to supplement the print material. They are indicated by an icon like the one shown here.



A list of supplementary multimedia resources is provided at the end of each unit of the Geography Course.

To make it easier for the learner to go back and replay the media, the page numbers are also indicated.

Internet resources like links to articles are also provided in the text.

Have another look at the multimedia below if you experience any problems.

### Optional Multimedia Resources

1.	Measuring a curved distance	Video	page 21
2.	Converting map distance	Video	page 22
3.	Step 1 <u>Drawing a cross-section</u>	Video	page 30
4.	Step 2 <u>Drawing a cross-section</u>	Video	page 30
5.	<u>Drawing a cross-section - full version</u>	Video	page 31

From the information, it is clear that our country's weather and climate is greatly influenced by this subsiding air, also called a high pressure system.

**Subside means to sink down.**

<http://proofofconcepts.com/webtextbook/weather/airpressure/airpres.htm>

Let us now look at high and low pressure systems in more detail, such as how they develop, how air moves within these systems and how this air movement influences temperature and climate.

[http://www.atmosphere.mpg.de/enid/1\\_Weather\\_Fronts/\\_Pressure\\_systems\\_15v.html](http://www.atmosphere.mpg.de/enid/1_Weather_Fronts/_Pressure_systems_15v.html)

1 A low pressure system or cell

The image shows a screenshot of a webpage. A red oval highlights a table of resources, a text block with a definition, and a URL. Another red oval highlights the video icon in the table.

# SECTION 4

## **JSC Open Educational Resources (OER) Teachers' Guide: Life Science**

### **1.0 Introduction**

This section of the teachers' guide focuses on the facilitation of the JSC Life Science Course. It is intended for teachers/instructors who will facilitate the print-based and/or online courses for learners. Within this section, we will look at the following information to help you assist learners taking the JSC Life Science Course:

- General information
- What is covered in the course material
- How to use the module
- Resources

### **2.0 General information**

This course is part of a series of teaching and learning materials in the Natural Sciences learning area. The course comprises eight learning areas referred to as “units.” Each unit covers a specific/particular area of learning with the focus on sub-topics.

On completing Life Science Grade 10, learners should be in a position to discover and develop their potential and interests in basic science. They should possess the necessary skills for further scientific learning. These skills will also prepare them for varied aspects of life and provide them with an understanding of the whole world.

The learning content in this module is based on the Namibian context, although the themes and topics are on a variety of scales to meet international standards. Teachers are therefore urged, where appropriate, to use local examples to illustrate scientific issues, concepts and processes.

### 3.0 What is covered in the course material?

To be able to teach successfully or facilitate learning it is important that you as the teacher/instructor are clear on what learners should know.

The learning content in this course is divided into eight units:

**Unit 1:** Health Education

**Unit 2:** Nutrition

**Unit 3:** Classification of Living Organisms

**Unit 4:** Diversity of Organisms

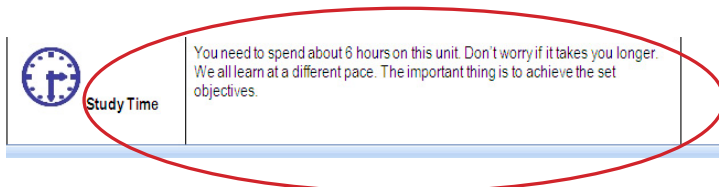
**Units 5–7:** The Human Body

**Unit 8:** Ecology

### 4.0 How to use the module

#### 4.1 Time frame

This course is expected to be completed within 23 weeks or 61 hours. This includes both teaching and learning time. This gives you approximately 8 hours per unit including the activities and assessments. Note that learners might spend less time on shorter units and more time on longer units. Distance education learners need flexibility to complete the course units to their satisfaction due to different needs and styles of learning.






## 4.2 Facilitating a face-to-face Life Science session

The lesson plan for Life Science should consist of four phases: introduction and exploration, explanation, expansion and evaluation.

### Introduction and exploration phase

During this phase the teacher should organise the content to be dealt with, objectives to be achieved, concepts to be introduced, and practical activities needed for the content, as well as the type of records that learners need to keep the information and instructions they will need for any investigation.

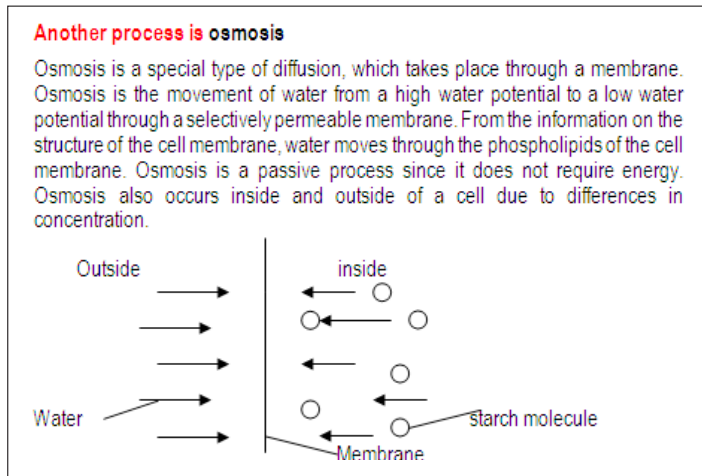
  <b>Practical activity</b>	<ul style="list-style-type: none"><li>• list the features of the gaseous exchange surfaces in animals,</li><li>• describe the structure of the human gas exchange system, including the microscopic structure of the walls of the trachea, bronchioles and alveoli with their associated blood vessels,</li></ul>  <b>Practical Activity 1</b> To show the role played by the diaphragm during breathing
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The lesson can be **introduced** during this phase.

<b>Breathing system</b>	<b>Introduction</b> The human breathing system consists of the following structures as shown in the diagram. You need to know the structure and functions of the various parts of the respiratory/breathing system. Make sure that you know the exact location and function of each part.
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## Explanation phase

During this phase the teacher explains the concepts to the learners and gives definitions. For example, when teaching the concept of **osmosis**, the teacher defines what osmosis is, gives reasons why it takes place and explains how osmosis can be demonstrated by an experiment.



**Expansion phase:** Now the teacher should try to connect the concept to real life. Encourage high-level thinking in the learners. For example, ask them how osmosis can affect the human body, and refer to **osmoregulation**.


**Evaluation phase:** During this time, the teacher formulates questions in order to determine whether the objectives are achieved. (See **4.3 Assignment and self-mark activities**.)

## 4.3 Assignments and self-mark activities

The Life Science course consists of 24 formative assignments. Some assignments are investigative. Teachers/instructors must give learners the proper guidance and support during investigations.


There is at least one assignment at the end of each sub-topic within a unit.

### Assignment

 <p>Assignment 1</p>	<p>1. Carry-out a survey on the different ways of HIV transmission by visiting the nearest health centre. Your survey questions can include the followings: Which method of transmission is the most common and the least common? Present your information in a form of a table. What recommendations can be given to help prevent the further transmission of HIV in Namibia?</p>
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In addition, there are various self-mark activities and practical activities to test the learner's progress. These should be done in the learner's notebook.


Sample answers for each assignment, as well as self-mark activities, are given at the end of each unit. Learners should be encouraged to try the activities by themselves before checking the feedback pages. Although teachers/instructors are not required to mark and record these assignments/activities, they must ensure that learners master the objectives by discussing and helping them with the questions if they are having difficulty. A feedback icon is at the bottom of each assignment/ activity.




Activity 4

1. Complete the table below by filling in the missing infectious diseases or causative organism.

Infectious disease	Causative organism
1. Ringworm	Fungus
2. polio	a.
3. dysentery	b.
4. c	Bacteria
5. gonorrhoea	d.
6. bilharzia	e.
7. f.	Bacteria
8. g.	Virus
9. h	Fungus
4. i.	Malaria

To check feedback, click on the icon. 

Learners can click on the icon to access the feedback and then return to the course.



Feedback  
Activity 4

2. Virus
3. Protozoa
4. TB/ Cholera or any other
5. Bacteria
6. Protozoa
7. TB/ Cholera or any other
8. Polio/ Aids or any other
9. Ringworm/ Trush, or any other
10. Protozoa


To go back, click [here](#)

## 4.4 Assessments

There are eight assessments in the course, one after every unit. These are tutor-marked assessments that contribute to the continuous assessment (CA) marks. Each assessment is worth 50 marks. Learners should answer in the spaces provided. No additional materials are needed. Feedback in the form of marking schemes for these assessments is also provided for the tutor and is included in the tutor's folder. Teachers are free, however, to expand the marking scheme by adding alternative answers where applicable. It is the tutor's responsibility to set the assessment due dates.

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### Assessment

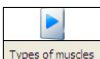
 Assessment	<p><b>Section A Multiple choice questions</b></p> <p>Choose the correct answer from the options.</p> <ol style="list-style-type: none"><li>1. What will any HIV test reveal? A. antibodies in the blood B. CD4 counts in the blood C. HIV status in the blood D. viral load in the blood</li><li>2. Which test measures the amount of all components in the blood?</li></ol>
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## 5.0 Resources

Various multimedia resources are provided as part of the Life Science course. These include audio clips, video clips and PowerPoint presentations.

### Audio

These are aural clips of information that are essential to reinforce the print material. In most cases, an **activity** based on the audio is given. The **audio** clips included in this course are provided on the CD-ROM. Teachers should arrange for learners to listen to the audio in order to complete the activities. There are 18 audio clips in this course:

 Types of muscles Double click to hear audio.	<p><i>Listen to the audio by clicking on the icon.</i></p> <p>Before you proceed, <a href="#">click here</a> to do the activity 1 based on the audio. Do it in your notebook.</p> <p>Skeletal muscle / Voluntary muscle</p>
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**Unit One:**

- Components of immune system

**Unit Five:**

- Features of gaseous exchange
- Effect of smoking on the lungs
- Effect of alcohol on nervous system
- Drug addict testimony
- Hormonal control

**Unit Six:**

- Types of muscles
- Functions of the support system
- Functions of the placenta
- Process of birth
- Diet of the newborn baby
- Importance of colostrum
- Advantages of breast feeding

**Unit Seven:**

- Contraceptives
- Effect of abortion
- Inheritance

**Unit Eight:**

- Global warming, greenhouse effect



## Video

This medium's strongest point is how it can bring to life concepts that learners might find difficult to imagine. It adds value to the learning experience and can be used in different settings by the teacher, in groups or alone by the learner. The nine **video** clips included in the Life Science Course are provided on a CD-ROM. Teachers will need equipment such as TV sets, DVD players and a multimedia projector to play the clips.

Let us look at examples of minerals and vitamins.  
Do you still enjoy this section? This is quite interesting, isn't it?

4. Vitamins (Click [here](#) to view the video)

### Unit One:

- Rapid test
- Types of IRVs

### Unit Two:

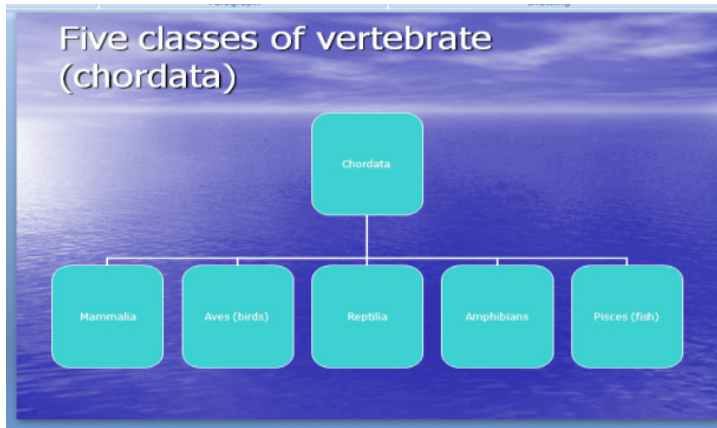
- Types of carbohydrates
- Proteins and fats
- Vitamins
- Minerals

### Unit Five:

- Heart structure
- Causes of heart diseases
- How to reduce heart diseases

## PowerPoint presentations

**PowerPoint** slides are linked to the print content. There are seven PowerPoint presentations in this course, all provided on the CD-ROM.



### Unit Three:

- Levels of classification
- Effects of osmosis on cells

### Unit Four:

- Classes of vertebrates

### Unit Seven:

- Types of contraceptives

### Unit Eight:

- Main greenhouse gases

# SECTION 5

## **JSC Open Educational Resources (OER) Teachers' Guide: Physical Science**

### **1.0 Introduction**

This section of the teachers' guide focuses on the facilitation of the JSC Physical Science Course. It is intended for teachers/instructors who will facilitate the print-based and/or online courses for learners. In this section, we will look at the following information to help you assist learners taking the JSC Physical Science Course:

- General information
- What is covered in the course material
- How to use the module
- Resources

### **2.0 General information**

Physical Science as a subject develops the knowledge, understanding, and practical and experimental skills required for a solid foundation in academic training. It strongly emphasises the learners' understanding of the physical and biological world around them.

The JSC Physical Science Course is available on CD-ROM as well as online (see [www.col.org](http://www.col.org) and [www.namcol.com.na](http://www.namcol.com.na)). The CD-ROM contains both the module and folders with additional resources and teacher resources.

The Physical Science course does not have multimedia resources but links to external multimedia resources are provided throughout the course within each unit.

### 3.0 What is covered in the course material?

To be able to successfully teach or facilitate learning it is important that you as the teacher/instructor are clear on what learners should know.

The learning content in this course is divided into seven units:

**Unit 1:** Experimental techniques

**Unit 2:** Matter

**Unit 3:** Materials

**Unit 4:** Environmental chemistry

**Unit 5:** Mechanics

**Unit 6:** Electricity and magnetism

**Unit 7:** Waves, sound and light

Each unit is divided into sections that deal with specific topics. For example:

**Unit 1:** Experimental techniques

**Section 1:** SI units

**Section 2:** Estimating and measuring


**Section 3:** Observing and classifying

**Section 4:** Recording results

**Section 5:** Presenting results

**Section 6:** Reasoned explanation and evaluation of results

The learning outcomes are indicated at the beginning of each unit. The outcomes indicate the basic knowledge, understanding, skills, attitudes and concepts that learners should achieve with regard to the learning content.

 <p>Outcomes</p>	<p>Upon completion of this unit you will be able to:</p> <ul style="list-style-type: none"><li>• Describe how to use instruments and apparatus and how to observe and take readings.</li><li>• Explain how to record the results of experimental investigations.</li><li>• Describe the importance of communicating results to other people, both scientists and non-scientists (the use of ICT can be incorporated in this objective)</li></ul>
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Basic competencies are derived from these outcomes and are given at the beginning of each section within a unit.

The outcomes and basic competence are the basis for assessing whether or not learners understand the subject content.

**Section 1: International System of Units (SI Units)**

**Introduction**

In some countries e.g., England and United States of America, length is measured in inches and feet, while others measure length in cm and meters. Equally, distance is measure by some in miles while others use kilometers. The same could be said about mass (pounds and kg) or volume (gallons and liters). In order to have a common system in science we will use the S.I. unit system in this course.



Basic Competence

Upon completion of this section you will be able to:

- Explain how to recognize units, terminology and symbols to measure units of length, area, volume, mass, time and temperature as well as terminology in electricity, mechanics, light, waves and chemistry.

## 4.0 How to use the module

### 4.1 Time frame

This course is expected to be completed within 36 weeks or 156 hours. This is indicated at the beginning of the course under **Course overview**.

**Course overview**

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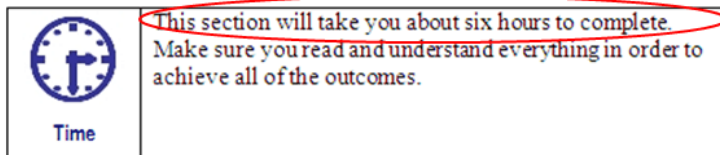
**Welcome to Physical Science  
Grade 10**

Course Duration:	weeks	# of weeks	# of hours
	Start & End	40 weeks	320 hours

Unit Number			
1. Experimental Techniques	1-3	3	18
2. Matter	4-11	8	24
3. Materials	12-16	4	36

The length of sections varies. At the beginning of each section an amount of time in hours is indicated to show how much time an average learner will spend on a section. Note that stronger or weaker students will complete the section in less or more time according to their learning strengths.



**Time**

This section will take you about six hours to complete. Make sure you read and understand everything in order to achieve all of the outcomes.

## 4.2 Assessment tools


It is important that we assess whether learners achieve the outcomes as indicated at the beginning of each unit. The outcomes are the basis for assessing whether or not learners understand the subject content.

*Note that these assessment activities are not meant in any way to limit the initiative of the teacher/instructor.*

The content includes numerous questions and activities not only to test whether the learner has grasped the work discussed but also to test the learner’s general knowledge. For example:

### Self-mark activities

**Self-Mark Activity**






Self-Mark Activity

**Self-Mark Activity 1:**  
This self-mark activity will not be submitted but marked by you. Compare your answers with the feedback at the end of the unit.


**Answer the following questions:**  
Use the table of Symbols, Units and Definitions of Physical Quantities to complete the following table.

Quantity	Symbol	Unit
	$a$	$m^2$
area		$m^2, cm^2$
	$\rho$	
energy	$E$	$J$
		$N$
power	$P$	
temperature		

<h2>Practical activities</h2>	<div style="display: flex; align-items: center;">  <div> <p><b>Practical Activity</b></p> <p>You need a few samples of fabric (all the same size), a scale, and some beakers or tins to hold water.</p> <ol style="list-style-type: none"> <li>1. Pour the same amount of water into all of the beakers and weigh them to ensure that each beaker has the same mass.</li> <li>2. Put the samples of the materials into the beakers with water.</li> <li>3. Remove the soaked material as swiftly as possible.</li> <li>4. Weigh the beakers with the remaining water to determine the <u>mass</u> of water removed by the materials. For example, 1<sup>st</sup> measurement – 2<sup>nd</sup> measurement = amount of water soaked up by the materials.</li> <li>5. This will tell you what material traps the most water.</li> </ol> </div> </div>
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<h2>Assessment</h2>	<div style="text-align: center;"> <p><b>Assessment</b></p>  <p>Assessment</p> </div> <p>The completed assessment can be submitted to the nearest government program support centre or can be submitted via electronic form, in scanned pdf format.</p> <p style="text-align: center;"><b>ASSESSMENT 01</b></p> <p style="text-align: center;">Answer all questions</p> <p style="text-align: center;">Section A – Multiple Choice Questions</p> <p style="text-align: center;"><i>Choose the correct answer from the possible answers given.</i></p> <ol style="list-style-type: none"> <li>1. The diagram shows a spring balance, marked in <b>newtons</b>.</li> </ol> <div style="text-align: center;">  </div>
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Self-mark activities are self-assessed. Feedback is provided at the end of each unit.

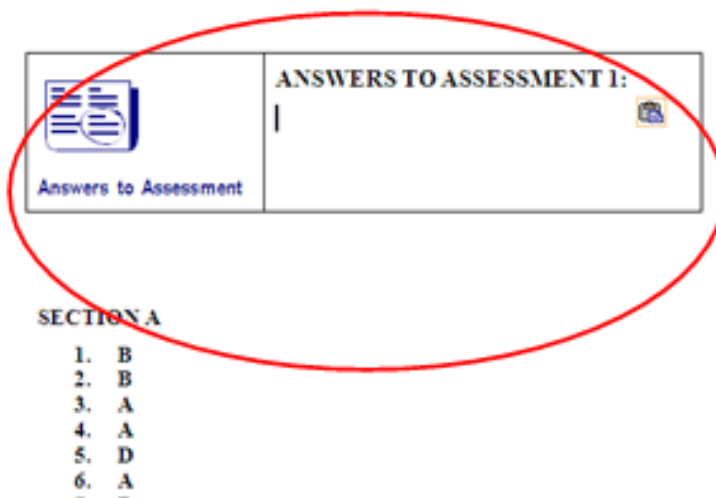


**Answers to Self-Mark Activities**

**Section 1: Types of Materials**

1. C, ceramics will shatter when hammered.
2. B, nylon is least stretchable.
3. a)  $100^{\circ}\text{C} - 70^{\circ}\text{C} = 30^{\circ}\text{C}$   
 b) The unwrapped beaker acts as a control for the experiment.  
 c) Material marked M is the worst insulator.  
 d) Material marked K was probably wool.  
 e) K because it maintained its high temperature for a longer period. It did not lose heat easily.

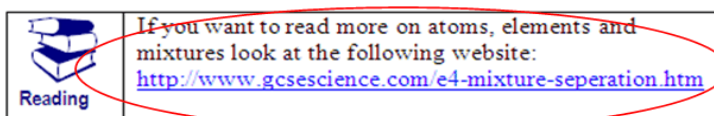
**Note:** There are three separate assessments after Units 3, 5 and 7. They are labelled Assessment 1, Assessment 2 and Assessment 3. Learners must submit these assessments to be marked by the teacher. Feedback on these assessments, in the form of acceptable answers, is provided in the teacher resource folder.



ANSWERS TO ASSESSMENT 1:	
1.	B
2.	B
3.	A
4.	A
5.	D
6.	A
-	--

## 5.0 Resources

Additional resources for enrichment and further study or reading are listed throughout a unit.



**Reading**

If you want to read more on atoms, elements and mixtures look at the following website:  
<http://www.gcscience.com/e4-mixture-seperation.htm>

### Resources

If you want to read more on atoms, elements and mixtures look at the following website:



1



About this Course material

<http://www.gcscience.com/e4-mixture-seperation.htm>

You can read more on extraction methods at the following websites:

Extraction of aluminium:

<http://www.chemguide.co.uk/inorganic/extraction/aluminium.html>

Extraction of copper:

<http://www.chemguide.co.uk/inorganic/extraction/copper.html>

Extraction of aluminium, copper, zinc and iron:

<http://www.docbrown.info/page04/Mextract.htm>



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