

VIA AFRIKA DIGITAL EDUCATION ACADEMY

Using your laptop to make a real difference in your teaching

SESSION 4

Using a display device with your laptop

CLASS NOTES



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

In partnership with the Department of Basic Education.



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Course content

Using your laptop to make a real difference in your teaching

Session 1: Your first laptop

Session 2: Managing files

Session 3: Connecting with the world

Session 4: Using a display device with your laptop

Session 5: Making it work with JUST ONE LAPTOP

Using your laptop to make a real difference in your teaching

Session 4: Using a display device with your laptop

Class Notes



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Outcomes and content

Outcomes of the session

By the end of the session, the participant will be able to:

- identify different display devices that can be used with a laptop
- discuss the benefits of different display devices
- set up a data projector
- troubleshoot setting up a data projector
- discuss how to use a data projector effectively in a classroom
- identify different types of IWB
- set up an IWB
- troubleshoot setting up an IWB
- discuss how to use an IWB effectively in a classroom
- identify a document camera
- set up a document camera
- troubleshoot setting up a document camera
- discuss how to use a document camera effectively in a classroom

Content of the session

This session will focus on:

- discussing data projectors, IWBs and document cameras as useful display devices to use with a laptop in a classroom
- setting up data projectors, IWBs and document cameras
- troubleshooting data projectors, IWBs and document cameras
- effective use of data projectors, IWBs and document cameras

Overview

Welcome to **Session 4: Using a display device with your laptop**. In this session you will learn about using display devices to project from your laptop onto a screen to enhance your teaching. You will learn about data projectors, Interactive Whiteboards (also called IWBs) and document cameras and how to set them up, troubleshoot them and use them to best effect in a classroom.

During this course – **Using your laptop to make a real difference in your teaching** – you will learn all about how to use your laptop. The course includes the following sessions.

1. Your first laptop
2. Managing files
3. Connecting to the world
4. Using a display device with your laptop
5. Making it work with JUST ONE LAPTOP

If you would like to learn more about using all the Microsoft Office Apps on your laptop as well as your mobile device, please consider enrolling for our **Microsoft 365 Course**, where you will learn all about using Microsoft Word, Excel, PowerPoint, and OneNote. Discover how to use Microsoft Teams in a teaching context in our **Teaching Online Course**.

If you have – in addition to your laptop – a Windows tablet, learn all about how to use your tablet in **Using your Windows tablet device to make a real difference in your teaching**.

If you have an Android tablet device, find out how to use it optimally in **Using your Android tablet device to make a real difference in your teaching**. Also consider enrolling for our **Google Workspace Course**, where you will study a variety of Google Apps, including Docs, Sheets, Slides, Keep and Drive.

Well done for making this investment in your professional development as a teacher and a 21st Century Citizen.

Introduction

What are display devices?

The term display is the general name used to describe the device used to view all the activities and apps on your computer. You will hear terms like computer monitor, screen or display device being used interchangeably.

You can think of the display as the device that delivers all the visuals you need to engage with your computer. Your laptop already has a built-in display device, the laptop screen. This is the primary display of your laptop. Additional displays can be connected to your laptop and act as secondary displays. In this session we focus on two specific secondary displays:

1. The IWB
2. The data projector

We also look at a document camera, a device that works together with your display device.

Why use display devices?

A data projector enlarges the information you want to share with your class from your laptop screen; allowing your learners to see the information clearly. More advanced display devices (like IWBs) not only allow you to enlarge the information on the screen, but also provide opportunities for interaction with the content in ways the whole class can see. Furthermore, IWBs also allow you to control your computer from the front of the class.

Using a data projector

What is a data projector?

A data projector is a type of display device that is used to project what is on your computer screen onto a big screen or flat surface so that an audience can see the information.

Setting up your data projector

Ten-step plan to set up a data projector

1. Ensure that both the laptop and data projector are turned off. Although this might not be a requirement, it will help to avoid any potential problems later.
2. Plug one end of the Video Cable (VGA or HDMI) into the appropriate port on your laptop.
3. Plug the other end of the Video Cable (VGA or HDMI) into the data projector.
4. Plug the data projector's power cord into the power input on the data projector (usually located at the back).
5. Plug the other end of the power cord into the wall socket and turn the switch on.
6. Press the Power Button on the data projector to turn it on.
7. Turn on your laptop. Once your laptop has started, you should see the image on your laptop screen (desktop with Taskbar and Desktop Icons) on the projected image.
8. If your data projector isn't showing the image on your laptop screen yet, try the following steps.
 - Hold down the Windows Key on your keyboard and press 'P' to open the Display Options Pane. Use the touchpad and cursor to select 'Duplicate'. This will project the same image as the one on your laptop screen.
 - Push the 'Source' Button on your data projector until you see your laptop screen's image on the projected screen. Each push changes the source option, so repeat until you see the image on your laptop screen.

- Adjust the data projector's position to get the required image size. If your data projector has a Zoom Function, use it in conjunction with changing the position.
- Make final adjustments to the Focus and Keystone Settings on the data projector to get the best possible projected image.

Golden Rule

When in doubt or if you're struggling, refer to the instruction manual that came with your data projector. You can also download an electronic version of the instruction manual.

Hint

Use a search engine (such as Microsoft Edge) and search for '[Data Projector Make] [Model] instruction manual', for example 'NEC v300x instruction manual'.

FAQs

Which projector should I choose?

The question of which projector to choose is often asked. Cost plays a major role in choosing a data projector, so it's important to know what your budget is. Choose one that fits into your budget. Lens brightness (see below), resolution and throw distance are important factors to consider when choosing a data projector. Short-throw projectors are good for using with IWBs because they reduce the impact of your shadow obstructing the view, but they cost a lot more.

When you are choosing a data projector, read reviews about different makes and models online or ask a colleague whether they would recommend the one they are using.

The more information you have before deciding, the better.

What are lumens and how many do I need?

Lumens are the measurement of brightness that a projector gives out and this is referred to as lens brightness or projector brightness. Two factors impact projector brightness requirements.

- Ambient light (the amount of light in the room): The more ambient light in the room, the higher the required brightness to give a high-quality picture.

2. Screen size: The larger the screen size, the higher the brightness recommended in order to have a clearly visible image.

2000 to 3000 lumens are the ideal recommended range for a classroom situation.

How long will the data projector's lamp last?

The lamps on newer model data projectors last between 2 000 and 4 000 hours depending on the various settings used in an environment. That is the equivalent of between 330 and 660 six-hour school days.

How can I move around the class and control my laptop?

Moving around in the classroom while you are controlling the content displayed by the data projector, allows you a great deal of flexibility. You can use a cordless mouse and keyboard to operate your laptop. Other options include using a remote-control app on your smartphone or tablet or using a wireless presenter, often referred to as a presentation clicker.

What should I project onto?

A projector screen is the best surface to use. However, you can just as easily use a wall or your whiteboard. Be careful of the reflective glare when you are projecting onto a whiteboard, though. Another alternative is to use a non-reflective film to cover an existing chalkboard. You can even use matt paint to repurpose your chalkboard. Light shades of grey work better than pure white.

Should I care about the warranty?

It is important to select a data projector that comes with a warranty by the manufacturer.

Here are some factors to consider.

- The length of the warranty. Most warranties are for one, two or three years. The longer the warranty, the better for you.
- How long the manufacturer will take to replace a defective data projector. Some will even offer a loan projector while yours is being repaired.
- Whether or not the warranty includes lamp replacement.

Do I need to read the manual?

Absolutely. The manual is your guide to the best and safest way to operate your data projector. Ensure that you read the manual before using the projector and make sure you keep the manual in a safe place for future reference.

Troubleshooting technical issues

Projector is not turning on

There are many reasons that a projector may not be turning on. If your projector doesn't power on, try the following.

- Ensure that the projector is properly plugged into a working power socket.
- Check the temperature lights to make sure the device hasn't overheated and shut down.
- If you are using a remote control to turn on the projector, check the batteries (or use the Power Button on the projector itself).
- Ensure that the projector is not in standby mode.

If – after trying all the above tips – the projector is still not turning on, the issue could be something more complex, for example damage to internal components. Contact a professional projector repair service for assistance.

Projector is overheating

It is natural for projectors to become hot as they are being used, but sometimes projectors overheat when they need cleaning, maintenance, or better air circulation. If your projector is randomly shutting down or displaying a warning message, use the following tips to stop the overheating.

- Clear the area around the projector.
- Ensure there is nothing blocking the projector's vents.
- Clean the filter and vent of any dust.

A light on the projector is flashing

There are many makes and models of projectors – all with different parts and pieces – so it's generally best to refer to the owner's manual to determine the meaning of a flashing projector light.

However, these are the most common reasons for and solutions to flashing lights on your projector.

Power light is flashing

If the Power Button light is green or flashing green, the projector is likely on or warming up. If the power light is orange or flashing orange, the projector might be in standby mode or turning off.

Lamp light is flashing

If the lamp light is flashing orange or red, this usually means the lamp light is going to burn out soon or needs to be replaced.

Temperature light is flashing

If the temperature light is flashing orange or red, this usually means your projector is overheating or in need of cleaning. Be sure to clear any clutter from around the projector and to remove any items that may be blocking its vents.

Image on screen is discoloured

Projector discolouration can occur for many reasons. Here is a list of possible solutions.

- Inspect the condition of the VGA Cable. If you notice any bent prongs, the VGA Cable needs to be replaced.
- Optimise the display and colour settings for the lighting in the classroom.
- Check if your projector needs a lamp replacement.

If none of the above suggestions help with the discolouration, the problem could be more serious. Contact a professional projector repair service to inspect the colour wheel or polarizing plates.

Projector lamp is not working

Although lamp life varies from projector to projector, all lamps need to be replaced at some point. This is a common projector issue.

If the projector turns on, but an image doesn't appear, your lamp may be burnt out. Inspect the lamp light. If the light is flashing red or orange, you need to replace the lamp.

Keep a step ahead. If the image being projected is discoloured or dim, the lamp may burn out soon.

Making the best use of your data projector

There are two keys to success whenever it comes to using new devices, and these are 'accept the challenge' and 'be prepared to learn'. If you take these two keys to heart you will find it possible to work wonders with any new device and technology.

Safety first

It is crucial that you maintain safety around all equipment, but a data projector introduces a few different risks in a classroom.

| Avoid | Why? |
|--|--|
| Getting too close to, or touching the data projector when it is on, or has just been turned off. | The projector can get very hot and cause serious burns. |
| Standing in the projector beam too long looking at the learners. | Not only can this cause eye strain, but also headaches and tiredness. |
| Looking towards the light of the projector too much. | This is for the same reasons just mentioned above. What this should not encourage you to do, though, is to stand with your back to your learners. Find other ways, like remotes and being near the laptop to control what is being projected instead. |
| Having white backgrounds on the screen. | This leads to eye strain, and this includes your learners, too. Too often we use a bright white background to make text that is too small almost readable. Choose an off-white or grey screen. |
| Keeping the room dark to make your screen more visible. | Not only does this induce sleep, but it also causes the eyes to work hard every time they look towards and away from the screen. |

Things to avoid when you use the data projector

Using a data projector effectively means that you will change your teaching approach and style to some degree. There are some things to avoid doing, though, since they do not foster good learning.

Avoid replacing all your instructions with words on the data projector

Too often we put up everything we would say to our learners on the screen – this means everything has to be read by the learner. Learners become tired, and often misread instructions. It also causes other problems and it takes away from your opportunity to communicate with your learners and develop their listening comprehension skills. Yes, instructions on screen are useful – but start with explaining them first.

Avoid replacing textbooks or worksheets with projected lessons

Should your lesson require the learners to all read at the same time from the same text, ask yourself why they need to be staring at a screen to do so. Is it so that you can track their eyes and be in control? Is that pedagogically sound? What is more, putting something on the screen for the learners to copy down, unless it is to develop handwriting skills, eats up a great deal of time. Yes, it does save the cost of photocopies and even textbooks. And yes, there is merit in handwriting something to learn it better. But, ask yourself why you are doing it.

Avoid showing videos just because you can

Technology is seductive; it offers quick and easy fixes. But, ask yourself: 'If I had to move the class to a special room to watch this video or if I had to sign out the equipment to show this video would I still show it?' If not, then don't do so now just because it is easy.

Avoid replacing explanations with internet searches

In Session 5 – **Making it work with JUST ONE LAPTOP** – you will find out more about content quality and content context. For now, please remember that something on the internet that has been searched for as an explanation can often be at the wrong language level, or it could apply to another country or to a different grade's curriculum. It could even be wrong. Your learners rely on you to be the authoritative source in the classroom.

Avoid making any internet search engine the expert in the class

Good preparation before class, during which you might consult the internet, is needed to keep you the authoritative source or expert. Why would you want to give that up?

Things to do when you use the projector

Whenever a data projector is mentioned, the first thing that pops into most people's minds is PowerPoint. And that is no surprise. Like so much of the technology now found in our classes, the data projector started its life in business. PowerPoint presentations are outstanding tools when it comes to showing off data. For teachers, however, it needs to be more than simply the presentation of data.

Use PowerPoint presentations, but use them powerfully

When you want to use PowerPoint, ask: 'Could this be done with chalk or a textbook? If so, why am I doing it this way?'

If your answers include to allow for better use of class time or to create a structure for the lesson, then you are on the right track. But, you can go a lot further with PowerPoint and your projector.

You can create your own videos of your teaching to free you to help with learners who may need your extra attention. You can learn how to do this in Session 6 of our Microsoft 365 Course – **Preparing presentations (using Microsoft PowerPoint).**

With the tools on the Draw Tab in PowerPoint, you can add ink on top of your slides while you present, making the slides become a part of the lesson, not just something on the screen.

You can download and install add-ins that make the slides become interactive. This will allow learners to come to the laptop and do things on the screen (for example, drag and drop answers or simulate an experiment).

Your projector gives you a great way of showing your learners pictures of real objects that cannot be shown easily in another way.

PowerPoint is just one app to show on the screen from your laptop with your data projector, but your laptop can also give your learners an exciting method of presenting their own work. They can use apps like Word, Excel or any other app on your laptop.

Using an IWB

Types of IWB

Though they can seem complex and intimidating at first, IWBs perform a simple, yet useful, function: they connect a computer and a display. This allows you to interact with your projected screen as you would do with a touchpad and keyboard.

IWBs allow you to engage with all the apps and files on your computer, and to do so directly on the screen.

In the classroom, IWBs allow you to control your computer from the front of the class, combining the power of a computer with the educational affordances of a traditional whiteboard (or chalkboard).

IWBs are plentiful, but they come in three broad categories: electronic boards, portable IWBs and touchscreen IWBs.

Electronic boards

The technology that allows you to interact with your computer is built into the physical board of the electronic board. The electronic board connects to your computer and the data projector casts its image onto the board. These electronic boards often require their own electrical power to operate and will therefore need to be plugged into a wall socket.

Some models require a special, battery-operated pen to use on the board, while others allow you to interact using your finger as well as a pen. Some models also allow you to use an ordinary whiteboard marker on them.

Popular brands of electronic board include Smartboard, Teamboard and Promethean.

Portable IWBs

Portable IWBs are usually the most cost-effective options available. They use a special dongle-like device that connects to your computer and attaches to a flat surface or existing whiteboard next to the projected image. The device essentially turns any surface into an IWB through the technology. You have to use a battery-operated pen to work on a portable IWB, so you cannot use your finger to work on them.

Because these IWBs work on an existing flat surface, when you're not using it, the surface can be used as a normal whiteboard, and you can use markers on it.

Popular brands of portable IWBs include eBeam, Mimio and CleverBoard.

Interactive data projectors work on a similar principle to the portable IWBs, but here what is called the interactivity brain is built into the projector and you use a special pen to work with it.

Touchscreen IWBs

Touchscreen IWBs are the top-of-the-range of IWBs and are very expensive. They are effectively large flatscreen TVs that allow you to interact with them by touching on the screen. The computer is built into the device, and they do not need to be connected to a separate computer.

Popular brands of interactive data projectors include Sharp and Parrot.

Setting up your IWB

An IWB is a little more complex to set up than a data projector, but following these steps will make it easier.

Ten-step plan to set up an IWB

The following steps generally apply to most electronic boards and portable IWBs.

1. Install the software that came with your IWB.
2. Plug the IWB's power adapter into the power input on the IWB. (Note that some IWBs only require power from the USB Cable.)
3. Plug the other end of the power adapter into the wall socket and to turn the switch on. (Note that some IWBs only require power from the USB Cable.)
4. Plug one end of the USB Cable into the USB Port on your laptop. (If your IWB uses a wireless connection, plug the dongle into the USB Port of your laptop.)
5. Plug the other end of the USB Cable into the IWB.
6. Set up data projector.
7. Match projected image to IWB.
 - If you are using an electronic board, ensure that the projected image fills the maximum area on your IWB.

- If you are using a portable IWB, position it close to your projected image as instructed in the manual. (Ideally you should be using a hard, flat, smooth surface like a wall or traditional whiteboard.)
8. Open the IWB's application on your laptop (installed in Step 1).
 9. Calibrate your IWB (see instruction manual for details).
 10. The IWB will now be connected to your laptop. You will be able to operate your laptop from the front of the class and use the whiteboard application for annotations.

Golden Rule

When in doubt or if you're struggling, refer to the instruction manual that came with your IWB. You can also download an electronic version of the instruction manual.

Hint

Use a search engine (such as Microsoft Edge) and search for '[Interactive Whiteboard Make] [Model] instruction manual', for example 'eBeam Edge instruction manual'.

FAQs

Which type of IWB do I need?

Just like buying a car, you should choose an IWB that suits you and your budget, and meets your specific needs. You may get advice from online reviews or colleagues and friends, but at the end of the day you are the one who will use it. Think about how you will be using it. For example, if you still want to use your standard whiteboard, a portable option might be best for you.

Do all IWBs require a data projector?

Yes, unless you are using a touchscreen IWB, you will need a data projector.

How much training will I require to become comfortable with my IWB?

Training is essential. The amount of time required will depend on your level of skill and comfort in operating computers. Most suppliers will offer basic hardware training. In addition to this, you will need to develop the necessary pedagogical skills and knowledge to integrate the IWB into your teaching. Session 5 of this course – **Making it work with JUST ONE LAPTOP** – covers this in great detail.

What size screen do I need if I choose an electronic board or a touchscreen IWB?

This depends on the size of your class. The size you go with should be large enough to be visible for the learner at the back of the classroom.

What is the best surface to use with a portable IWB?

If a wall is all you have, then use that. If you have options, a standard whiteboard can work well, while a non-reflective whiteboard works best.

Can I use my IWB to teach online?

Absolutely! Some whiteboard software has built-in remote participation features using the internet. If your IWB's software doesn't have this, you can use a video conferencing platform like Zoom or Microsoft Teams in conjunction with your IWB to achieve the same result.

Troubleshooting technical issues

The cursor is not aligned with my stylus pen or finger

When this happens, there is an issue with the calibration of your IWB. Open the calibration tool on your laptop and redo the calibration.

The cursor does not move on the IWB OR my computer does not detect the IWB OR the lights on my IWB are flashing

There are four possible causes of these problems, and each has a relatively simple solution.

1. The board may not be connected to the correct computer. In the settings app on the IWB, check that the board is connected securely to your computer.
2. The board may not be receiving power or may not be switched on. Check that the board is receiving power.
3. The whiteboard-specific driver software may not be installed or running on the computer. Check that the driver software is installed on the computer.
4. The board may have been connected to the computer after the computer started up. Reboot the computer.

Making the best use of your IWB

The reality is that the IWB **is** your computer and it works like your computer's screen. The IWB makes your computer accessible from the front of the class. Anything that you would want to do on your computer, you can now do from there.

The same keys to success, the safety concerns and the things to avoid along with things to do that apply to data projectors, apply here too.

A significant piece of research indicated that with successful teaching with an IWB, learners, on average, increased their marks by 16% overall. We need to think about what successful teaching with an IWB looks like.

Successful teaching makes proper use of learner response devices linked to the IWB

Response devices are handheld remote devices, linked to the IWB, that the learners use to respond to questions. This allows the teacher to get instant feedback to questions. The teacher can analyse the learners' responses and make decisions about where the lesson should go to ensure that learners' educational needs are met. Using this tool can lead to an increase of 26% in learners' academic results.

For this increase to be made though, the teacher must actively use the data from the response devices. Rather than simply noting how many learners get the correct answer, the teacher must explore why learners selected one answer rather than another. Furthermore, the teacher should discuss the correct answer as well as the incorrect answers, making sure to elicit opinions from as many learners as possible. This will unearth misunderstandings of concepts and information.

In Session 5, we will explore a low-tech alternative to these devices that can have the same positive effect on learning.

Successful teaching makes proper use of graphics, visuals, apps and videos

The effective use of multimedia can result in an average 26% increase in learner marks. Multimedia can include sites such as Google Earth, downloaded pictures and videos from the Internet, as well as self-made PowerPoint videos, and simulation apps like GeoGebra.

The ease of use of multimedia with an IWB can result in poor use of these elements. What's more, if the content is not carefully organised and paced well, the learners can easily become overwhelmed and lose focus and interest.

Effective use of multimedia on an IWB means that the multimedia has to be purposefully selected, put together within well-designed flipcharts or scrapbook pages, and used carefully, not just shown on the screen.

Careful preparation by the teacher to make sure that everything is there for a reason is vital. The use of the IWB must not be a spontaneous searching for things on the internet or playing games and running videos.

The software that comes standard with IWBs allows the teacher to create electronic flipcharts or scrapbooks that can be saved and introduced (with the carefully curated content) at the appropriate time. Care should be taken to break the content into small meaningful chunks on a flipchart or scrapbook page, and the visuals should be only those that are required. Nothing that is meant to just be pretty should be included.

A clever tip is to put in a scrapbook page every now and again that reminds you to slow down and not treat this as a PowerPoint presentation. The name of the device: **Interactive Whiteboard** – clearly indicates that use of it must be more than simply show and tell or sage on the stage teaching.

Successful teaching makes judicious use of reinforcer elements built into the IWB

A 31% increase in learners' achievement can be gained by your using the IWB's built-in reinforcers properly.

A reinforcer is any app on the IWB that will reinforce or reward correct answers. This can be as basic as cheers or applause for a correct answer or using an app that allows answers to be dragged and dropped with a satisfying success sound.

However, paying too much attention to reinforcing features can result in poorer teaching because the focus is on getting the applause rather than focusing on why an answer is right or wrong. These tools must be used with a clear focus on essential content and never to create a competitive or game-like atmosphere in class.

Successful teaching means inviting learners to participate

Be reminded that interactive does not mean 'fun for the teacher'. It means an opportunity for learners to become directly involved in the lesson.

For this to happen effectively, you must create the opportunities for meaningful interactions with content on the IWB. Playing noughts and crosses is not a meaningful activity.

Suggestions for successfully using an IWB

This link will provide you with 50 ways to use a projector in a classroom that are effective and pedagogically sound.

<http://langwitches.org/blog/2008/11/19/50-ways-to-use-a-projector-in-the-classroom/>

Using a document camera

What is a document camera?

Document cameras, also called visualisers or document viewers, are devices that capture live images of a document or object for displaying to an audience.

Document cameras magnify and project the images of actual, three-dimensional objects. You can think of them as high-resolution web cams, mounted on arms, allowing them to be placed over a page or object. This allows you, as the teacher, to write on a sheet of paper or to display an object while learners watch.

Any object that fits under the document camera can be displayed. The camera takes a picture and in turn produces a live image using a projector or monitor.

Document cameras are versatile devices that allow you to display and share documents and objects of all shapes and sizes. This versatility gives document cameras a wide range of apps for both static displays and live demonstrations in-class and online.

Setting up your document camera

A document camera is very easy to set up. Follow these steps.

Ten-step plan to set up a document camera

1. Install the software that came with your document camera.
2. Plug the document camera's power adapter into the power input on the document camera. (Note that some document cameras only require power from the USB Cable.)
3. Plug the other end of the power adapter into the wall socket and turn the switch on. (Note that some document cameras only require power from the USB Cable.)
4. Plug one end of the USB Cable into the USB Port on your laptop.
5. Plug the other end of the USB Cable (usually the micro-USB plug) into the document camera.
6. Open the document camera's application on your laptop (installed in Step 1) and follow any on-screen prompts.
7. Most of the time, you will already be set up and ready to go at this point. If not, follow the prompts to complete the process.
8. The document camera will now be connected to your laptop.
9. You will be able to see the live image.
10. Adjust the camera head to the best position to capture the object, image, or text you want to capture or project.

Golden Rule

When in doubt, or if you're struggling, refer to the instruction manual that came with your document camera. You can also download an electronic version of the instruction manual.

Hint

Use a search engine (such as Microsoft Edge) and search for '[Document Camera Make] [Model] instruction manual', for example 'Aver U50 instruction manual'.

What are the main differences between document cameras and overhead projectors?

Overhead projectors can display only see-through transparencies. Document cameras are capable of displaying documents on plain paper, overhead transparencies and three-dimensional objects.

Is a document camera, a visualiser and a document viewer the same thing?

Each of these terms is used to describe document cameras. They are all names for the same device. Some manufacturers of document cameras use different names for the technology to differentiate their products in the marketplace.

Can I switch the display between my document camera and my laptop?

Yes, most document camera models will allow you to do this with the touch of a button.

Troubleshooting technical issues

I cannot see an image from the document camera on my display device. What am I doing wrong?

There are several reasons why you might not be able to see an image from your document camera. Here are some steps to resolve the problem.

- Ensure that your document camera and projector are both turned on.
- Check that your VGA Cable is properly connected to your document camera and display device.
- Ensure that the resolution of your document camera is the same as that of the display device. (If your document camera's resolution is different from the resolution of your projector, the two devices are incompatible, so an image will not be displayed.)

- Check that the document camera's iris control is not closed completely.
- Make sure that you have selected the correct input selection on your display device.

I am having problems with the USB connection from my document camera to my PC. What is the problem?

Check that both your document camera and your computer are turned on, and that the USB Cable is securely plugged into each device. If this does not solve the problem, you should check that your computer and document camera both have the appropriate drivers installed. (You can find out more about drivers in Session 3 – **Connecting to the world.**)

I am using the video output on my document camera, so why can I not read text?

The document camera might not have sufficient resolution to show the entire document on the screen all at once. To see text displayed properly, use the document camera to zoom in on specific areas of the text. In some document cameras models, this is compensated for by a feature called 'image turn' which means that the entire document can be displayed as a sharper image.

Making the best use of your document camera

A document camera can be used in many subjects in useful ways.

Language and literacy

In the Foundation Phase, a document camera is particularly useful when you wish to show learners exactly how to hold a pen and write. They can see exactly what your hand is doing as you form each letter.

If you have only one book that you want to use as a read-aloud to your learners and want the learners to follow along, this is an ideal tool.

You could also annotate a text as you analyse it with older learners, so that they can see what you are doing.

Mathematics

In a large class it is almost impossible for the learners at the back of the class to see what is happening when you do something like work with maths manipulatives or demonstrate a technique. With this device you can broadcast everything to everyone easily. Allow younger learners to watch you count whilst they count along at their own desks; create a model or a pattern and have learners follow along. If it fits under the document camera safely, you can demonstrate it.

Solving a Maths problem together with the class works well with a document camera.

Natural Sciences, Physics and Life Sciences

There are very few schools with full functional laboratories in our country. A document camera can give learners the opportunity to see the **one** experiment you can do at the front of the class. By being able to record the experiment and even photograph it, you can create contextually relevant learning content for later use. You could use this in a test at another time, for example.

Any subject

Reviewing and discussing homework and tests can be a challenge when learners try to follow along on their own test paper while you are reading the answers aloud, or when you have to write everything on a board. The document camera will allow you to show the learners your memo as you go through the answers, making the process more efficient and a better learning experience.

About the Final Assessment



At the end of this training session, you will be asked to complete the Final Assessment.

If you complete the Final Assessment successfully, you will qualify for your virtual badge and certificate (refer to the sample certificate and sample badge on this page).



Final Assessment

Indicate the ONE correct response for each question.

| | |
|---|---|
| 1 | Which term cannot be used interchangeably with the term primary display device? |
| a | Computer monitor. |
| b | Screen. |
| c | IWB. |
| | |
| 2 | Secondary displays include _____. |
| a | the Interactive Whiteboard (IWB) and the data projector |
| b | the computer monitor and the data projector |
| c | the IWB and the document camera |
| | |
| 3 | Select the choice with the words that best fill the gaps. A ____ is a type of ____ device that that is used to ____ what is on your computer screen onto a big screen or flat surface. |
| a | data projector, display, project |
| b | data projector, monitor, connect |
| c | data projector, display, connect |
| | |
| 4 | Lumens are the measurement of _____. |
| a | the distance from the screen to the projector |
| b | the brightness that a projector gives out |
| c | the maximum heat the projector may reach |
| | |
| 5 | How many lumens are the ideal recommended range for a classroom situation? |
| a | 7000 to 10000 |
| b | 2000 to 3000 |
| c | 200 to 300 |

Final Assessment (continued)

Indicate the ONE correct response for each question.

| | |
|---|--|
| 6 | If your projector is randomly shutting down or displaying a warning message, use the following tips to stop the overheating. |
| a | (1) Turn the projector off and on three times. (2) Ensure there is nothing blocking the projector's vents. (3) Clean the filter and vent of any dust. |
| b | (1) Clear the area around the projector. (2) Ensure there is nothing blocking the projector's vents. (3) Clean the filter and vent of any dust. |
| c | (1) Clear the area around the projector. (2) Clean the lens cap. (3) Clean the filter and vent of any dust. |
| | |
| 7 | Projector discolouration can occur for many reasons including: |
| a | bent prongs in the VGA cable. |
| b | a lamp that needs replacement. |
| c | all of the above. |
| | |
| 8 | Select the choice with the words that best fill the gaps. ____ use a special ____ device that connects to your computer and ____ to a flat surface or existing whiteboard next to the projected image. |
| a | Portable IWBs, dongle-like, attaches |
| b | Monitor IWBs, projecting device, attaches |
| c | Projector IWBs, dongle-like device, attaches |
| | |
| 9 | Select the choice with the words that best fill the gaps. Touchscreen IWBs are effectively ____ that allow you to interact with them by ____ on the screen. The computer is ____ the device, and they do not need to be connected to a separate computer. |
| a | large flatscreen TVs, touching, built into |
| b | computer monitors, right-clicking, built into |
| c | data projectors, touching, built into |

Final Assessment (continued)

Indicate the ONE correct response for each question.

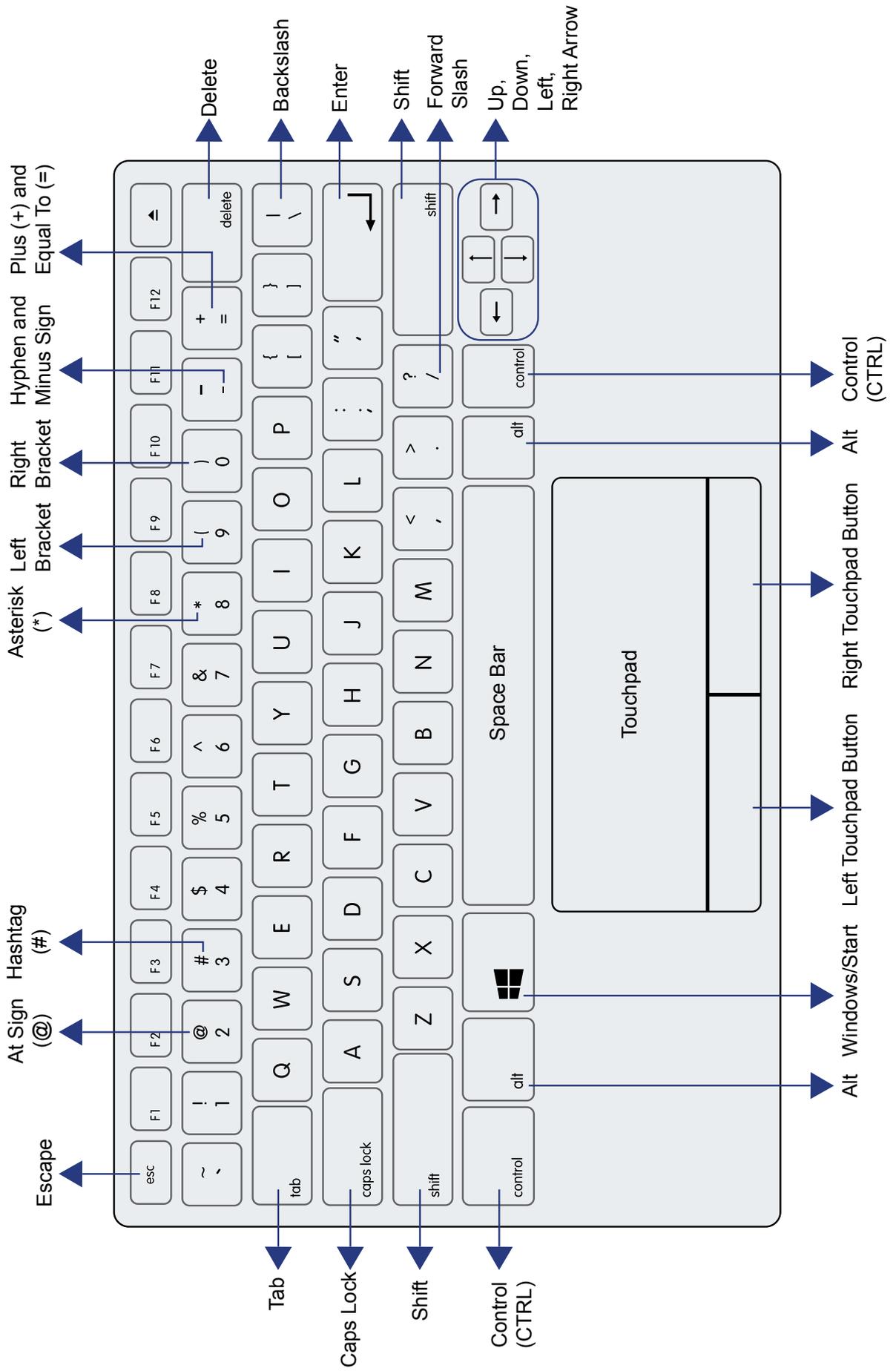
| | |
|----|---|
| 10 | Select the choice with the words that best fill the gaps. An ____ has the technology that allows you to interact with your computer built in, and it connects to ____ and the ____ casts its image onto the board. |
| a | electronic board, your screen, data projector |
| b | electronic board, your computer, data projector |
| c | electronic board, your modem, data projector |
| | |
| 11 | A data projector is needed for _____. |
| a | all IWBs |
| b | all IWBs except touchscreen IWBs |
| c | touchscreen IWBs |
| | |
| 12 | On an IWB, if the cursor is not aligned with the stylus: |
| a | there is an issue with the lumens of your IWB. |
| b | there is an issue with the size of your IWB. |
| c | there is an issue with the calibration of your IWB. |
| | |
| 13 | A ____ is any application on the interactive white board that will reinforce or reward correct answers with cheers or applause. |
| a | lumen |
| b | reinforcer |
| c | remote |
| | |
| 14 | ____ are devices that capture live images of a document or object for displaying to an audience. |
| a | Document cameras |
| b | Visualisers |
| c | Both A and B |

Final Assessment (continued)

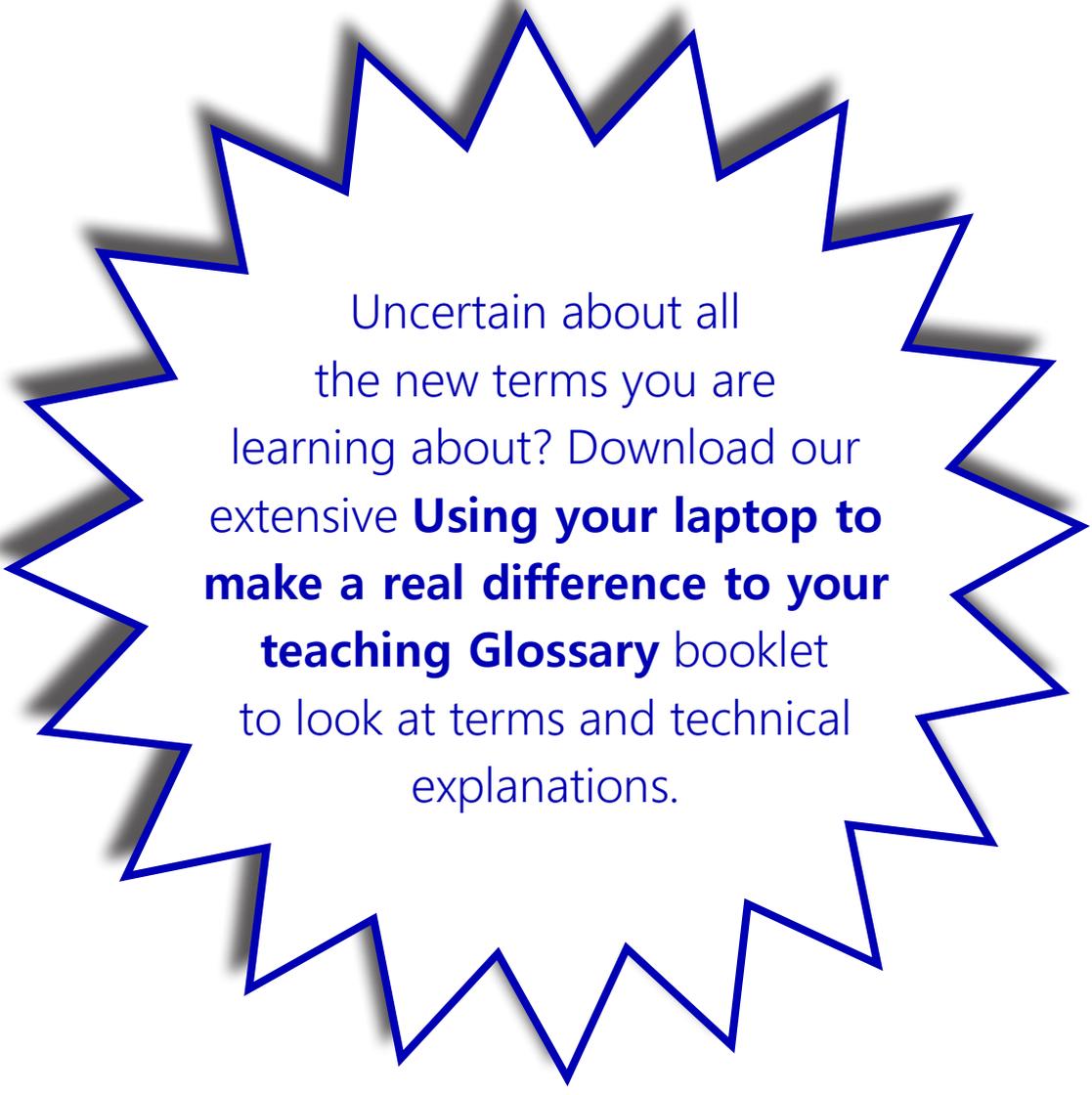
Indicate the ONE correct response for each question.

| | |
|----|---|
| 15 | Select the choice with the words that best fill the gaps. The main difference between document cameras and overhead projectors is that _____ are capable of displaying documents on plain paper, overhead transparencies _____, _____ can display only see-through transparencies. |
| a | document cameras, three-dimensional objects, overhead projectors |
| b | overhead projectors, three-dimensional objects, document cameras |
| c | document cameras, three-dimensional objects, data projectors |

The keyboard of a laptop



Additional Resources



Uncertain about all
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to look at terms and technical
explanations.

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