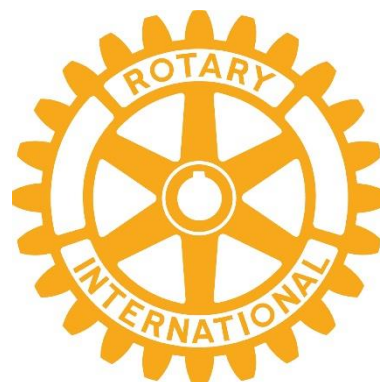


Instruction Manual for Teacher in a Box

(KOLIBRI v1.3)



www.teacherinabox.org.au

A PROJECT OF THE ROTARY CLUB OF PADDINGTON QLD. AUSTRALIA

This deployment undertaken by:

File name: instructions_master_laptop-server-v1.3._kolibri

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We should also remind you that *Teacher in a Box* is distributed on donated secondhand computers. We try and ensure that it will give a long and reliable service by using only good quality computers, currently i-3 and above (if available), but we can offer no warranties or guarantees apart from some limited assistance. Please be aware that any action you take upon the information contained in *Teacher in a Box*, or in the operation of *Teacher in a Box* is strictly at your own risk. We can accept no liability for any losses and damages in connection with its use, misuse or malfunction, however caused.

Short List for Experienced Users:

Setting up the TIB server:

- Plug in the **Wi-fi router** (*if you wish to provide Wi-fi access, otherwise there is no need*)
- Turn on the computer
- Password: **Passw0rd21**
- Open Browser (Firefox)
- If RACHEL screen does not appear automatically click on the Home button or type **127.0.0.1** in the address line to go to the home screen
- **Shut down** by clicking on the icon in **top right-hand corner** and follow the links

If the clock screen-saver appears then press any key to go to the login screen

Setting up client devices:

- Go into Settings on the device – select **Wi-Fi = K4L**
- Password: **12345678**
- Open Browser
- Type: **http://192.168.0.10** in the address line

Note: Not all modules will be compatible with modern smart phones. Firefox is best for iPhones. All modules should work on computers that have the free Adobe apps installed (Adobe Reader and Adobe Flash Player).

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1 Introduction

Over the past few years, the "online learning revolution" has generated a lot of excitement. Organizations, such as [Khan Academy](#), were founded with the mission to making free learning accessible for everyone, yet one of the greatest barriers is that an estimated 4.5 billion people still lack Internet access.

1.1 About the Foundation of Learning Equality

The Foundation for Learning Equality, a not-for-profit organisation, was started up by a group of university students in San Diego, USA, to explore solutions for distributing and hosting Open Educational Resources via low-bandwidth and offline channels.

The result is an open-source platform for viewing and interacting with [Khan Academy](#) videos and exercises. It has the look and feel of learning on-line but does not need internet access. Students can connect to the Teacher in a Box server from within the classroom, on a tablet, laptop or desktop computer.

The Foundation for Learning Equality has developed the a new platform [Kolibri](#), which has added to the very impressive list of functions already available.

1.2 About World Possible

Another amazing not-for-profit organisation, *World Possible* developed the RACHEL server (Remote Area Computer Hotspot for Education and Learning), which works in a similar way to our Teacher in a Box servers. As part of their project they have gathered an enormous amount of open licence educational content and made it freely available to all. *World Possible* is the other major content provider for our Teacher in a Box (RACHEL) build.

1.3 About Computers 4 Learning

Computers 4 Learning Inc. (C4L) is a project of the Rotary Club of Nundah. It is a voluntary organisation located in Brisbane Australia whose business is refurbishing donated computers and selling them at a very cheap price to disadvantaged locals and to not-for-profit organisations.

It was volunteers at C4L who developed the first Teacher in a Box server with the view of adding value to the services they already offered. As the Teacher in a Box servers gained momentum it became necessary to set it up as a project in its own right.

2 About Teacher in a Box

Teacher in a Box was taken up by the Rotary Club of Brisbane Planetarium which has since been re-named to the Rotary Club of Paddington. We are about giving people access to free education. The materials are offered at no cost through our website and for those who are unable to access the internet for whatever reason there is the offline option of a Teacher in a

Box server. These servers are repurposed computers that create a Local Area Network (LAN) and allow many people to access the tens of thousands of books, videos, worksheets and other educational materials via any wi-fi enabled device such as laptops, tablets and even smart phones. **No data costs are incurred as users are not accessing the internet.**

By building our server out of a laptop computer, we have overcome issues identified with the Raspberry Pi version that we first trialed. The main benefit of the laptop server version is that it has a screen, keyboard, hard disk drive and power fail device already built in. The other benefits are that it can be used as a standalone system as well as a Wi-Fi server and that its networks range covers a wide area.

If this is starting to all sound complicated don't worry... it's not... it is just the terminology that makes it sound that way. All of the hard work has been done for you..... just follow the directions and practice it again until you feel comfortable!!

3 What educational and training materials are available in Teacher in a Box?

TOPIC		MODULE/CHANNEL	LANGUAGE
Children's Story Books	R	Book Dash	English – early level
	R	Cat and Dog Books	English- early level
	R	Great Books of the World <ul style="list-style-type: none"> ● Adventure ● Children's Stories ● Fantasy ● Comedy and Humour 	English – early to independent level
	R	Fantastic Phonics	English – early level
	K	Global Digital Library	Various – early to developing level
	K	Pratham Books Story Weaver	Various – early level
	K	African Story Book	Various African – early level
	R	Mustard Books	English – early level
Classroom Teacher Training Resources	R	Fantastic Phonics for Adults- vocational training words	English early to developing level
	R	GCF Learn Free– computer training	English
	R	Hesperian Health Guides <ul style="list-style-type: none"> ● Disabled Village Children ● Helping Children Who are Deaf ● Helping Children Who are Blind 	English
	R	UNESCO's IICBA Electronic Library <ul style="list-style-type: none"> ● Primary, Secondary Maths and Science ● School management ● HIV/AIDS information 	English
	K	Learn English Online	English

	K	Engage NY – common core curriculum Pre K to Grade 12 English, Maths	English
	K	MIT Blossoms – Biology, Chemistry, Engineering, Maths, Physics	Various
	K	Touchable Earth <ul style="list-style-type: none"> ● Children teach culture 	English
	K	Khan Academy – Primary to University lessons in Maths, Science, Economics, Arts, Computing, Test Prep, Partner content, College, careers, Resources	English
	K	Be Strong – Internet safety resources 10 learning modules	English
	K	TESSA – Teacher Resources – Life Skills, Literacy, Numeracy, Science, Social Studies and the Arts at Primary and Secondary levels plus Teacher Resources. TESSA Share <ul style="list-style-type: none"> ● Environment and Sustainability ● Analysis of an effective teacher ● Characteristics of a good teacher ● Teaching and learning methods examples ● Audio Resources ● TESSA Competition Winners – samples of teacher preparation 	English, French, Swahili English
	K	CK-12 - lessons <ul style="list-style-type: none"> ● Math – Elementary Math, Arithmetic, Measurement, Algebra ● Science – Earth Science, Life Science, Physical Science, Biology, Chemistry, Physics ● English - spelling 	English
	K	Open Stax – Instructor resources, student handbook, student resources <ul style="list-style-type: none"> ● Humanities – US history ● Math – Algebra, calculus 1-3, college algebra, elementary algebra, introductory statistics, pre-algebra, precalculus. 	English
	K	PHet Interactive Simulations by level from elementary to university with multiple topics <ul style="list-style-type: none"> ● Physics ● Biology ● Chemistry ● Earth Science ● Math 	English





		<ul style="list-style-type: none"> ● Chapter 5 – systems of linear equations ● Chapter 6 – polynomials ● Chapter 7 – rational expressions ● Chapter 8 – exponents and roots ● Chapter 9 – quadratic equations 	
	R	Wikipedia for Schools – reference material in words and images for teaching, learning and research	English
	R	Wiktionary – a dictionary	Various
	R	Interactive World Map – searchable locations	Universal
Medical Training/Information	R	Boundless Textbooks – includes biology, physiology, microbiology and psychology in text and illustrations.	English
	R	Fantastic Phonics for Adults – literacy for Healthcare 1 and 2, Aged Care 1 and 2.	English
	R	Hesperian Health Guides – easy access to medical information in locations where medical help is limited.	English
	R	UNESCO's IICBA Electronic Library – HIV/AIDS information for teachers and community	English
	R	Infonet-Biovision – includes Human health and hygiene.	English
	K	MIT Blossoms – includes physiology	English
	K	Sikana En – includes videos about health for practical knowledge and skills.	English
	K	<p>Osmosis.org –video and text learning for training doctors and health workers.</p> <ul style="list-style-type: none"> ● Pathophysiology ● Neurology ● Cardiovascular ● Pulmonology ● Musculoskeletal ● Paediatrics ● Microbiology ● Immune disorders ● Haematology ● Genetics ● Endocrine ● Physiology ● Gastrointestinal ● Psychiatry ● Ear, nose and throat ● Dermatology ● Reproduction ● The science of teaching and 	English

		<p>learning</p> <ul style="list-style-type: none"> ● Renal ● Fluid and electrolyte ● Maternal pathology ● Anaesthesiology ● Emergency medicine ● Osteopathic principles ● Ophthalmology ● Radiology ● Surgery 	
	R	MedlinePlus Medical Encyclopedia – searchable illustrated text with alphabetical order links	English
	R	OLPC Educational Packages – includes Biology	English
	R	Practical Action – includes waste management and water and sanitation.	English
Community Information	R	Boundless Textbooks – includes business, communications, finance, marketing, management.	English
	R	Fantastic Phonics for Adults – 140 lessons for learning to say words, read and spell.	English
	R	Fantastic Phonics - aimed at children or beginning readers for schools and families	English
	R	Food Plant Solutions – advice on obtaining good nutrition from locally grown plants in different locations.	English
	R	GCF LearnFree.org – job related videos and text including digital training for computers.	English
	R	Hesperian Health Guides – easy to understand advice for medical problems.	English
	R	UNESCOs IICBA Electronic Library – learning about HIV/AIDS	English
	R	Infonet-Biovision – illustrated information about agriculture, environmental and health topics.	English
	K	Learn English Online – learn to speak and read English with audio and illustrations.	English
	K	Sikana - includes videos on how to fix things, cooking and health	English
	R	Practical Action – printable articles about construction, farming, power, environmental change, food and hygiene, bee keeping, manufacturing, economic development, social development, road building, water quality and treatment and other like topics	English
	R	Interactive World Map – search for	Universal

	locations	
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We are actively seeking content for other regional areas so that we will be able to customise Teacher in a Box builds to better suit the needs of users in other developing countries. Please contact us via our website if you can help.

4 Components of a Teacher in a Box server

	<p>A laptop computer has been programmed to act as a server. This is a high-powered unit capable of supporting as many, many users with Wi-Fi devices all at the same time and with an expected range of at least 100 metres with Line of Sight transmission.</p> <p>All of the files are stored on a 500 GB or larger, hard drive on the computer.</p>
	<p>TP Link Router is attached to the Teacher in a Box server. It is configured to the motherboard of the computer and enables external devices to connect to the server and access the files via Wi-Fi</p>
	<p>Network cable is used to connect the Router to the laptop server</p>
	<p>Router powered by USB connection cable to the computer</p>

5 Setting up your Teacher in a Box server

Prior to switching on the computer it should be set up as follows:

- Use the network cable to connect the router to the laptop
- Use the fire wire cable to connect the router to a USB input in the laptop
- Connect the laptop to power and switch on.



6 Starting up a Teacher in a Box server

After plugging in the router, you may switch on the laptop.

IMPORTANT: Be patient: it may take a couple of minutes to boot up, there's a lot of work going on in there!!

Once the screen has reached the point where it displays an orange bar displaying **Administrator**, the server has booted up and can now be accessed by Wi-Fi devices. Instructions on how to do this is covered in full later in this document.

You will need to login as Administrator if you want to use the server directly. You do this by clicking on the screen to get it to ask you for a password

Enter exactly as it appears here: **Passw0rd21** that is the number zero, not the letter "O".



If the computer has been left idle for a time it will go into **Lock Screen** mode. This displays as an orange coloured screen with a clock on the front. Just hit Enter (or Return) to get to the login screen.

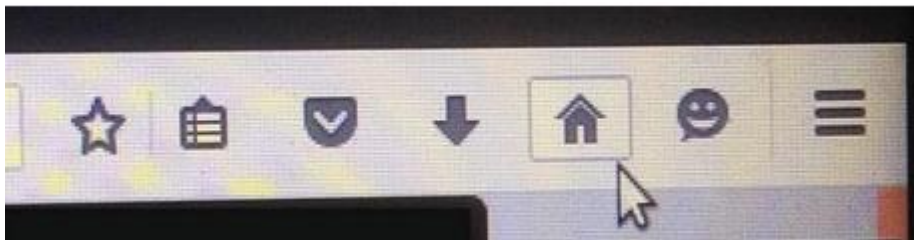
7 Opening the Web Browser on your Teacher in a Box server

Once the password has been entered this page will open. On some machines the Team Viewer application may display. This is a nuisance but not a problem, just close it by clicking on the little X in the top right-hand corner of the Team Viewer window and proceed as usual.

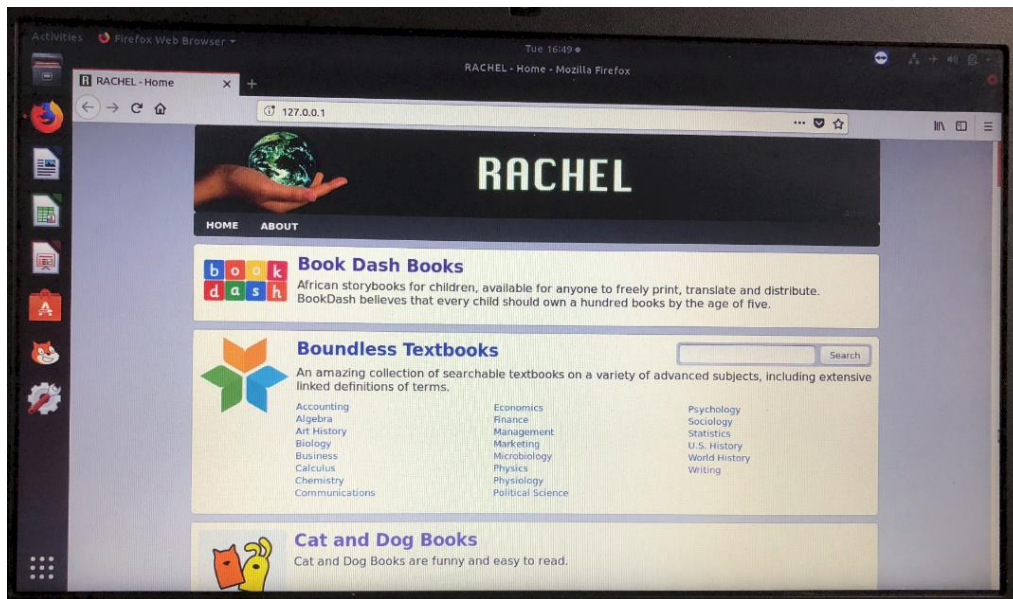
Select the Firefox icon as shown, and the RACHEL screen should display.



If, for some reason, it does not automatically go straight to the RACHEL home screen, simply click on the HOME icon (see below) to go to the RACHEL home page. This icon can be used at any time you get lost or just want to go back to the main screen.



Rachel should load up automatically and look something like the screenshot below. If it doesn't then just click on the Home button... or failing that reboot the machine.



8 Setting up a basic Wi-Fi Network


The diagram below is showing the Teacher in a Box server, with its little blue and white router, surrounded by several Wi-Fi devices (tablets and laptop computers). These devices could be accessing different books and videos on the Teacher in a Box server all at the same time wirelessly via the router... note that the files on the server are not copied or downloaded to these devices. They just “look” at the files on the server. (MIT Scratch and Kolibri components do, however provide a download option which is suitable for computers and this is covered separately in a later section)

9 Connecting up other Devices via Wi-Fi

Once modern wireless devices have been correctly configured they should automatically access the RACHEL files via Wi-Fi.

This can be done by following these instructions:

9.1 Laptop Computer

- Expand the toolbar on the bottom right hand side of the computer and select the network icon which will probably look something like this: 
- Select the Router Name (**K4L**) and enter the Router Password: **12345678**

9.2 iPhone or iPad

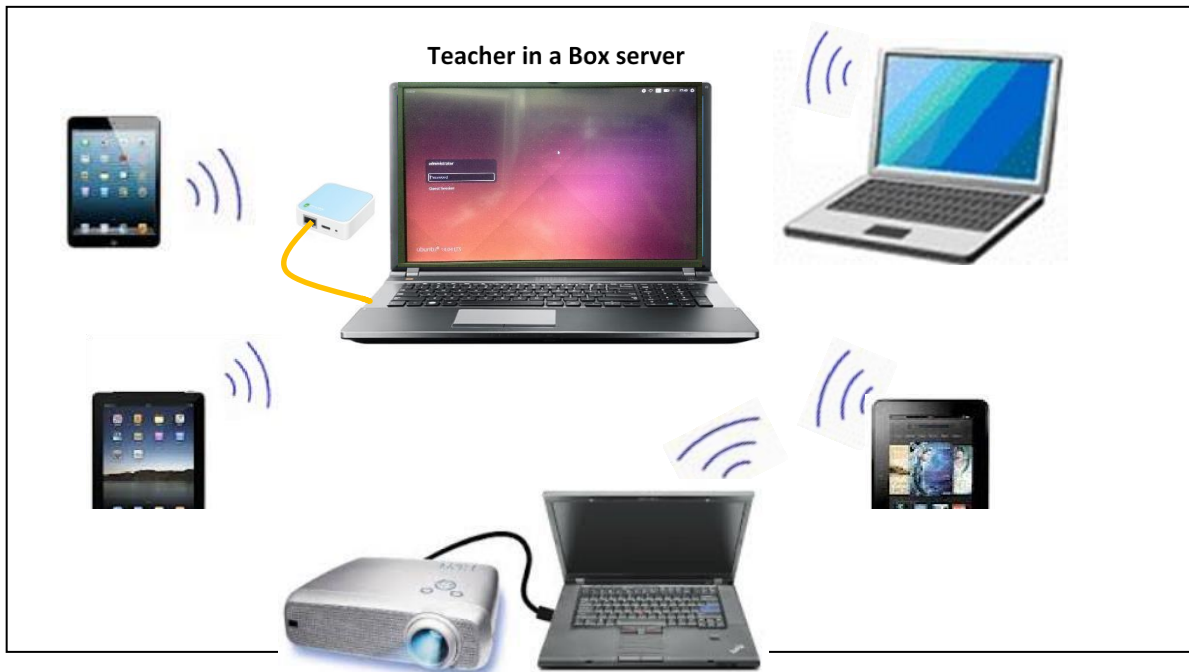
- Go into “Settings” on the wireless device and select Wi-Fi
- Select the Router Name (K4L) and enter the Router Password: 12345678

9.3 Tablet

- These will all vary slightly in the way they look but they will follow a similar process to the iPad
- The settings icon usually looks a bit like a **wheel cog**

After the Router has been selected it will take a couple of minutes to established the network connection **so be patient**.

Once you've done this, all the hard work is done... the device can automatically link to the Teacher in a Box server whenever the server is switched on and the user will, from then on, be able to access the files through the web browser. Some wi-fi devices may need you to re-select K4L each time you want to start up a new session.

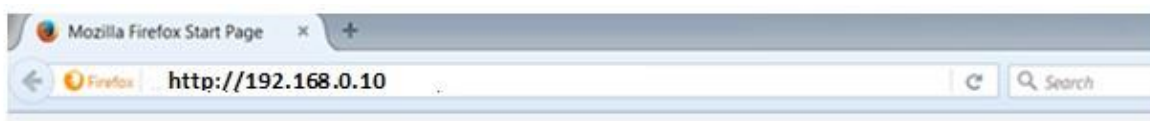


10 Opening the Web Browser on your devices

The files can be accessed using your standard **web browser** and these browsers will work with most files on Teacher in a Box however as devices are upgraded they start losing backward compatibility. For example, iPhones no longer support “Flash”. We have found that downloading and installing FireFox currently has fewer compatibility issues and the web browser *Dolphin* will support Flash and has a previously been downloaded onto tablets sourced through the Teacher in a Box project.

Open the appropriate **web browser on the external Wi-Fi device** and enter **http://192.168.0.10** into the address line as per below.

(You MAY need to turn mobile Data to OFF on phones so that the device doesn’t try to access the internet. Don’t forget to turn it back on again later.)



Now, sit down and brace yourself because once you hit enter then it will open your RACHEL session... over 10,000 instructional videos and 1000s of books and instruction sheets will be at your fingertips. Enjoy!!

To make it easier to access in the future, you should save this address in your favourites or store it as an “App” on your home screen, and when you find resources that you want to go back to just add these addresses to your Favourites too.

Note: If a Wi-Fi device tries to access the Teacher in a Box server before it is fully booted up then the Wi-Fi device may get locked out. If this happens simply close down the Wi-Fi device and boot it up again.

11 Setting up a more advanced Network

The basic set up listed above will be appropriate for most deployments however in cases where there are existing desktop computers or in cases where the signal needs to be carried over a larger area then additional equipment may be needed such as a Wi-Fi USB dongle or a range extender, a switch or possibly other equipment.

You will find some information sheets on our Teacher in a Box web page that will assist in gathering the necessary information to determine the requirements.

www.teacherinabox.org.au/

Once you have gathered all of the information you may wish to [Contact Us](#) through our web page so that one of our technicians can contact you to discuss.

12 Setting up MIT Scratch


The MIT Scratch app allows you to download the app from the Teacher in a Box server and install on a **computer** that is operating on Linux, Mac or Windows. For other devices such as iPads and tablets then you will have to download it from your usual Apps store.

MIT Scratch has also been installed on the Teacher in a Box server since September 2016. Click on the “Cat” icon on the left-hand side of the screen to open it up.

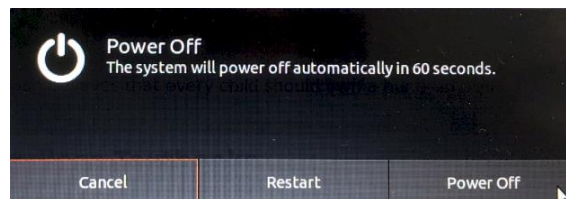
13 Closing Down the Teacher in a Box server

- Select the upside-down triangle in the top right-hand corner to open the menu





- Select the Shut Down icon  to bring up the next menu

- Click on the Power Off button.



After the computer has been left idle for a time it will go into Lock Screen mode. This displays as an orange coloured screen with a clock on the front. In this mode it is OK to just hold down the Power button on the computer to shut it down.

14 Frequently Asked Questions

Question	Answer
What is the maximum number of devices we can use on the Teacher in a Box server?	More than enough, we have only tested it with 30 devices... all hitting the same video at the same time... however it is calculated that our Teacher in a Box servers will be able to support well over 100 users at the same time.
How far will the signal transmit?	Depends greatly on the environment but expect more than 100 metres with Line of Sight transmission. Walls and other barriers will reduce the distance. It may be possible to boost the signal to a far greater using a Wi-Fi Range Extender but it may be easier and cheaper to just buy an additional Teacher in a Box server.
How much space do the files use?	Our Teacher in a Box servers are now going out with 500GB hard drives to cater for the RACHEL and Kolibri content
What happens if something goes wrong?	Hardware is selected carefully to try to ensure reliability, but it is not guaranteed. It is the responsibility of each school or learning centre to arrange their own support locally. Remote support may be possible if your technician needs advice.
How do we get a KA Lite network installed at another school or centre??	If an application was to be made <u>through your local Rotary Club</u> , then we could possibly assist to find another Rotary Club or other organisation for them to partner with.
What happens if I want to go back to the main page??	<p>Simply click on the HOME icon on the toolbar located in the top right hand corner to go back to the RACHEL home page.</p>  <p>To go back to the Kolibri main page you select the Channels icon.</p> 
What if they already have computers and tablets that need to be able to access Teacher in a Box?	If the computers are to be used in the same room as the Teacher in a Box server or close by, and they are Wi-Fi enabled, then “no problems” ... simply follow the instructions provided under the section, “Connecting up other Devices via Wi-Fi”. Otherwise, follow the instructions provided under the section “Connecting up a more advanced Network”.

<p>We have the internet on here. How do I know that this system is NOT using up my Internet allowance?</p>	<p>The little white box attached to the Teacher in a Box server transmits to the devices, it does not receive info from the internet. If your Wi-Fi devices are connecting to K4L then you know that you are accessing the information stored on the Teacher in a Box server and not from the internet.</p>
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15 Trouble Shooting

Problem	Comment
<p>How do I get rid of the lock screen with the clock on it?</p>	<p>We wish we could- it's confusing. Just press the Enter (or Return) key and it will disappear and allow you to enter the password.</p>
<p>My Wi-Fi device cannot find the K4L network belonging to the Teacher in a Box server.</p>	<p>Check that the router is plugged in properly. If still no good, simply reboot the Teacher in a Box server. Assuming that it has already been set up correctly as shown in the instructions, AND you are located not too far away from the server, then the most likely reason is that you tried to access the Teacher in a Box server before it had fully booted up. Simply switch off your device and start it up again. If still no good, simply reboot the Teacher in a Box server.</p>
<p>I have just logged on to the Teacher in a Box server and it has displayed a System Error message and wants to know if I want to report it. What should I do?</p>	<p>This occurred with some very early builds. Just ignore the message. It does not impact on the performance of the Teacher in a Box server.</p>
<p>The Team Viewer application displayed when I logged into TIB.</p>	<p>A nuisance but not a problem, just close it by clicking on the little X in the top right-hand corner of the Team Viewer window and proceed as usual.</p>
<p>I am connected to K4L but it opened another screen and not the RACHEL modules.</p>	<p>Try typing this address in the browser instead: http://127.0.0.1</p>
<p>My device can't find the RACHEL modules because it keeps on trying to access the internet.</p>	<p>Make sure that Mobile Data is switched off on your device and try again. If still unsuccessful turn off your device and turn it back on again.</p>

My iPad 1 is able to access RACHEL OK but will not play the videos.	Unfortunately older devices such as iPad 1 are no longer being fully supported. If you do find a way of making your device HTML 5 compatible we would love to know about it.
I am accessing the files remotely using my COMPUTER but some programs such as Scale of the Universe do not run.	You will need to install Adobe Reader to read the PDF files on your computer and Adobe Flash Player for the videos. These are available free from the Adobe web site https://get.adobe.com/uk/reader/ https://get.adobe.com/flashplayer/
My ANDROID device can access most files OK but will not play videos in GCF and Maths Expression and Music Theory do not work.	Some modern internet browsers no longer support Flash. Install Firefox for Android or the web browser Dolphin from your App Store and access Teacher in a Box using this browser.
My iPHONE will not play videos in GCF and Maths Expression and Music Theory do not work.	Install Firefox by downloading from your Apps Store and access Teacher in a Box using this browser.
Problem	Comment
My device can access most files OK but will not play videos in GCF and Maths Expression and Music Theory do not work.	Some modern internet browsers no longer support Flash. Install Firefox for Android or the web browser Dolphin can be installed and used to view these videos. Check what Apps are available for your android device
KA Lite is not opening correctly (only in early RACHEL versions).	Press the CTL-ALT-t keys all at the same time to open up a window then, in the command line type "kalite start". Wait a few seconds before trying KA Lite again
Music Theory and Power Typing does not work on my iPad or android device.	These apps only run on devices with a Flash player installed. These apps will be dropped because of ongoing compatibility issues
The GCF videos do not work on my iPad or android device.	Flash is not supported by these devices unless they have it installed as an app.
The MedlinePlus search function is not working properly.	This is a known issue that we are working on.
The Hesperian Health Guide search function is not working properly on the iPad.	This is a known issue that we are working on.
The Math Expression videos are not playing on my tablet.	This is a known issue that we are working on.
I am unable to open some of the worksheets on my device.	Your device needs a PDF viewer to be installed
Whatever the problem.	Be patient!! Some of these files are HUGE and take a lot of loading. When all else fails... turn it off... wait a few seconds... and then turn it back on again.