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Education and Training Board

Ideas for Integrating Literacy in Craft Apprenticeships

Alison Jones

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Adult Literacy Organisers Association

This is the thrd draft of Tips to Integrate Literacy and is being developed continuously.

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Alison Jones

Alison.jones@gretb.ie

091 706289

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Introduction

This booklet has been drawn up based on support work done to integrate literacy in GRETB Training Centre, Mervue, Galway. Its aim is to give examples of how to make written course materials more accessible to any student with reading and comprehension difficulties or for those who may have been out of education for some time. There is information about a multi-sensory approach and how to teach to different learning styles as well as information on student support online for spelling and reading. Also included are various specific types of exercises which have been adapted from text books currently in use here in Galway. Visually appealing exercises like these can to be used both in the classroom and for students to work on at home and aim to support reading, comprehension and study skills. A study aids section is also included.

Contents

Alison.jones@gretb.ie

Tips for Creating Written Materials

Use Plain English

- Write shorter sentences using everyday English
- Explain acronyms
- Write clear statements in a logical order
- Keep your learners in mind as you write

Use good quality photocopied material

- Not blurred or faded
- No dark, unclear photos

Use different coloured paper as appropriate

- This could help to make a topic or a unit stand out
- Also helps students with dyslexia

When typing up documents use:

- Bullet points
- Bold text as appropriate
- Clear font (e.g., Arial, Calibri, Verdana, Tahoma) at size 12 at least
- Good spacing in between lines
- Good use of paragraphs
- Good use of tables, charts and timelines
- Good use of images

Questions and answers technique

- This is a worksheet with a list of questions. It is a good way to attract attention and to help your learners focus on a topic.

Proofread your document

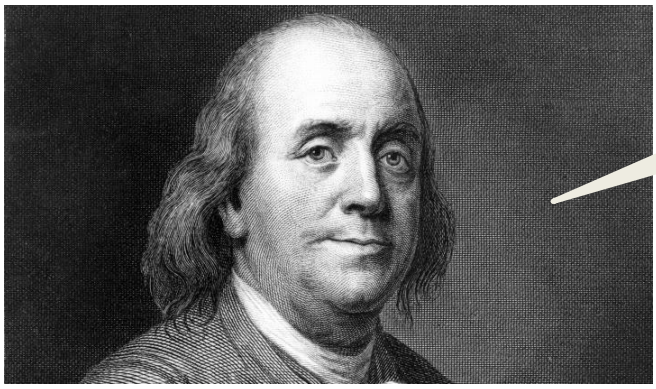
This list is not exhaustive!

Check out NALA's Plain English Guidelines at a Glance on www.nala.ie

Alison.jones@gretb.ie

Useful Classroom Tips

Some Suggestions for Theory Classes



"*Tell* me and I forget, *teach* me and I may remember, *involve* me and I learn."

Benjamin Franklin

At the start of the class

1. State the aim of the lesson clearly (set the scene)
2. State what will be required of the students
3. Give an idea of the timings involved

During the class

1. Ensure all learners are engaging with the material and explain in a different way if not (see Multi-sensory approach)
2. Check students' comprehension with frequent questioning

At the end of the class

1. Ask students to recap
2. Ask for questions
3. Clearly present any follow up activities and write on board
4. Conclude the lesson

Alison.jones@gretb.ie

Use a Multi-sensory Approach to Present Topics/ Ideas

People learn in different ways and have different learning styles. You can cater for these learning styles in the following ways:

For a Visual Learner (someone who learns best by seeing):

Use images and diagrams

Include slides or videos

Write down the word on the board

Draw timelines or flow charts

Use handouts

Use coloured text or coloured paper

For an Auditory Learner (someone who learns best by hearing):

Repeat difficult concepts using clear terminology

Ask students to feedback what was said

Short direct answer quizzes or question sessions

Mnemonics

Small group discussion

Reading aloud (check this first with student)

Directed listening tasks (listening is an active task, not a passive one)

For a Kinaesthetic Learner (someone who learns best by doing):

Students come up to the board to solve questions

Hands on activities or demonstrations

Group or pair work

Multi-media approach (e.g. software or apps)

Different types of exercises/interactive flashcard also good

A **varied approach** is advised and all techniques can be used. Try different styles at various times to see which one has the best results.

Note: There are various questionnaires available to check the learning style of your students. There is one at the end of this booklet.

Alison.jones@gretb.ie

Spelling Tips

Teach essential words using the multi-sensory approach e.g. look at the word (visual), sound out the word (auditory) and ask students to write the word (kinaesthetic).

Syllable Division

- Break down the word into syllables e.g. car/ bur/ et/ tor
- Say the word and sound out the each syllable
- Study and point out how each syllable looks
- Test the students on each syllable
- Test the students on the whole word

Other techniques

Some students prefer to write the word down repeatedly.

Some like to sound out the word or write it down to see how it looks.

It is a good idea to use mnemonics to help with important words
e.g. station**ar**y (**ar** as in c**ar**) station**er**y (**er** as in pap**er** or E for Easons!)

Some may want to keep a personal dictionary of words or store them on their phones.

Spelling Online

Check out the spelling support on www.bbc.co.uk/skillswise

There is also a free app called **Spelling Free**, which allows learners to create, study and test themselves on tailor made lists. They can even add their own audio to each word.

Alison.jones@gretb.ie

Reading Tips

The key elements for reading are:

- **Word recognition** (to recognise everyday words)
- **Decoding words** (to break down words) e.g. fer|ro|mag|net|ic
- **Comprehension** (to grasp the meaning of the text)

It is also important that material is accessible and relevant to learners.

Some reading techniques include:

- Training fluency by reading frequently, both at home and in class.
- **Close reading**: can be accompanied by note taking or using a highlighter pen to mark out the main points.
  Comprehension is key.
- **Scanning** techniques (moving quickly over the text to find a particular piece of information.) This is useful when looking up a particular topic or a particular word.
- **Skimming** techniques (an overall look to obtain the gist of a piece of writing). E.g. look at the first sentence of a paragraph: this is the topic sentence and will often indicate what the rest of the paragraph is about.

Alison.jones@gretb.ie

Aiding Comprehension when Reading

- Encourage your students to use the steps below when reading their text books
- Remind them that they are **reading for meaning**
- Give students the following advice:

Don't be put off by large amounts of text. Take each sentence **one by one.**

Look at the headings

Underline and then look up words they don't know

Read the first sentence of each paragraph carefully.

2.1 Ferromagnetic Materials

Materials that make good permanent magnets are reluctant to change their magnetic direction. Such materials are said to be magnetically "HARD", e.g. alnico.

Some materials such as soft iron become magnetised more easily than other materials, but they also lose their magnetism easily, so magnets of soft iron are called temporary magnets. Some materials become strongly magnetised in the same direction as the magnetic field. These are called *ferromagnetic* materials.

Examples are: Iron, steel, nickel and cobalt.

Use a highlighter pen to note key points

Notice any words that are highlighted or emphasised in the text. These are often important words.

Paramagnetic Materials

Some materials become weakly magnetised in the same direction as the magnetising field. These materials are called *paramagnetic* materials.

Examples are: Aluminium, Platinum, Manganese and Chromium.

They must make notes for revision later on.

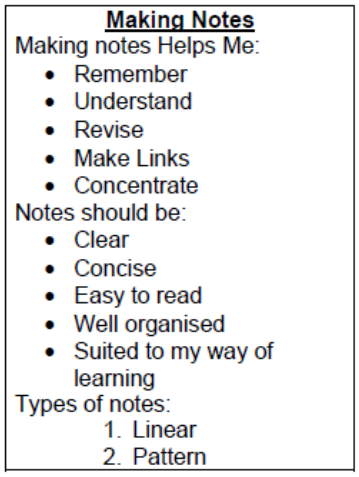
All of these techniques are presented in the 'Study and Learning Handbook' for apprentices. See page 38 for more details.

Alison.jones@gretb.ie

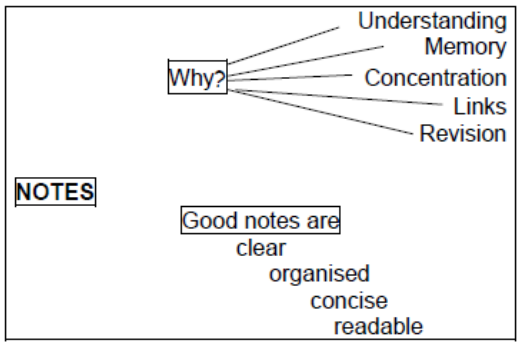
Tips for Notetaking

Good note taking will aid comprehension and is essential when it comes to exam revision later on. Students can use the following techniques:

- Give the notes a clear heading at the top of the page
- A table format is easy to create and easy to read
- Include images and drawings as needed
- Use bullet points
- Use numbered lists
- Use flow charts or patterns
- Use a style of notes that they like best
- Notes must be kept in good order for use later on



Linear notes are written in lines.



Pattern notes are more visual

Taken from Kerry ETB *Study Skills Notes*

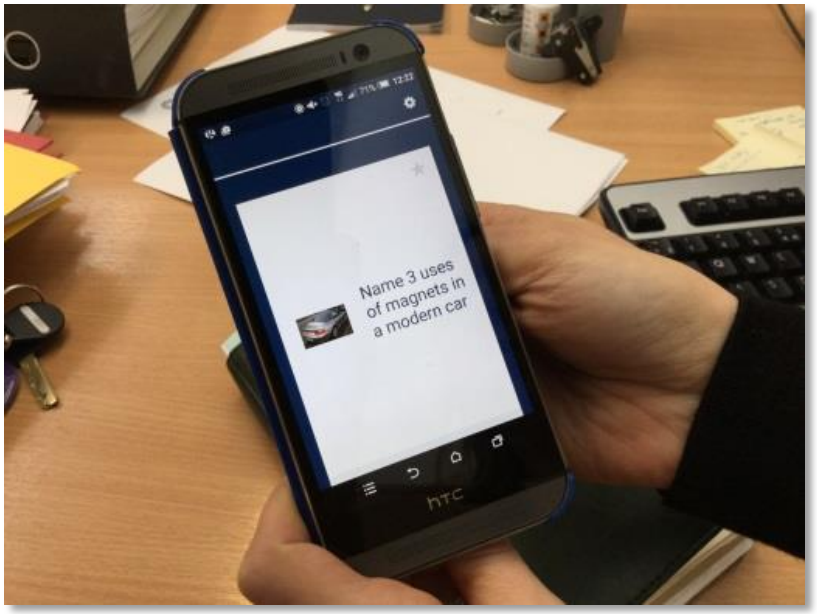
Alison.jones@gretb.ie

Integrating Literacy Techniques to Aid Comprehension

Some ways to present material to aid comprehension

- Ask learners to explain the topic in their own words
- Foster learner autonomy e.g. students find out for themselves
- Create glossaries
- Use a variety of different handouts to present the information
- Images to label
- Cloze exercises (filling in the blanks)
- Completing a table or a chart or a timeline
- Comprehension questions
- Quizzes and puzzles (apps available)
- YouTube videos
- Wall posters
- Flashcards

See examples of all the above on the following pages in this booklet



Quizlet.com app for creating interactive flashcards

Alison.jones@gretb.ie

Creating a Glossary

Creating a glossary

This is a useful way to help students to learn and understand basic terms

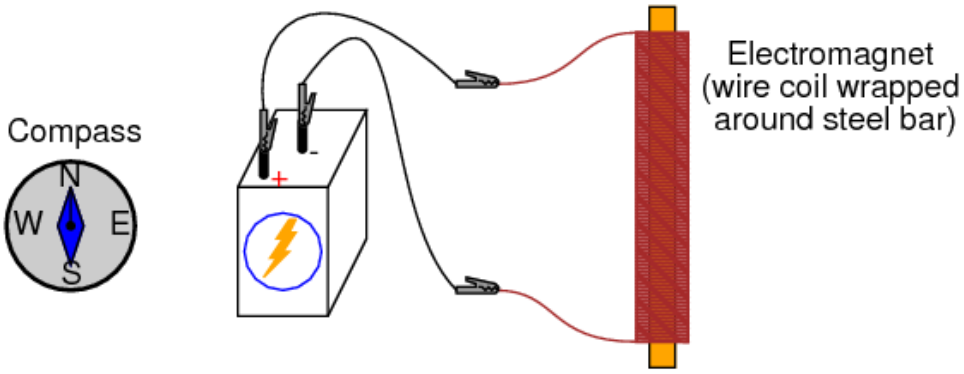
- Create a table in Word
- Use plain English as much as possible to explain terminology
- Use images as needed

Tip: Copy and paste images from Google images

Alison.jones@gretb.ie

Creating a Glossary

Example

Ferromagnetism	'Iron' magnets
Alnico	Al= aluminium Ni=nickel Co=cobalt (sometimes titanium and copper also) Used to make permanent magnets and known as magnetically 'HARD'  
Permalloy	an alloy of nickel and iron
electromagnetism	 A magnet made from an electric current
Paramagnetic materials	These materials are susceptible to magnetic fields, e.g. aluminium, platinum
Curie point	When iron is heated up to this temperature, it cannot be magnetized and loses its magnetism

Alison.jones@gretb.ie

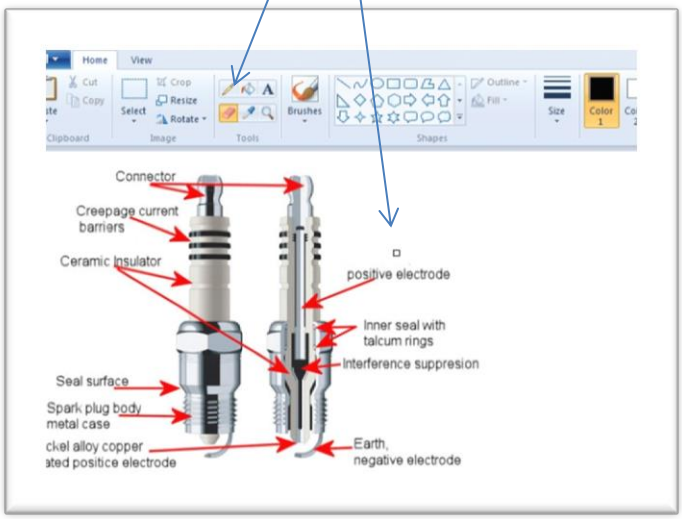
Labelling a Picture

Labelling a picture or Matching images/ symbols

- Select your picture from google images or copy it from the text book
- Copy it and paste it into your word document
- Insert arrows as needed (Insert + Shapes)
- Optional: use a text box at the end to help (insert + text box)

Tip:

If you need to adjust your picture, copy it into the Microsoft Paint programme and use the eraser to remove what you don't want. Save it and insert as a picture into your document

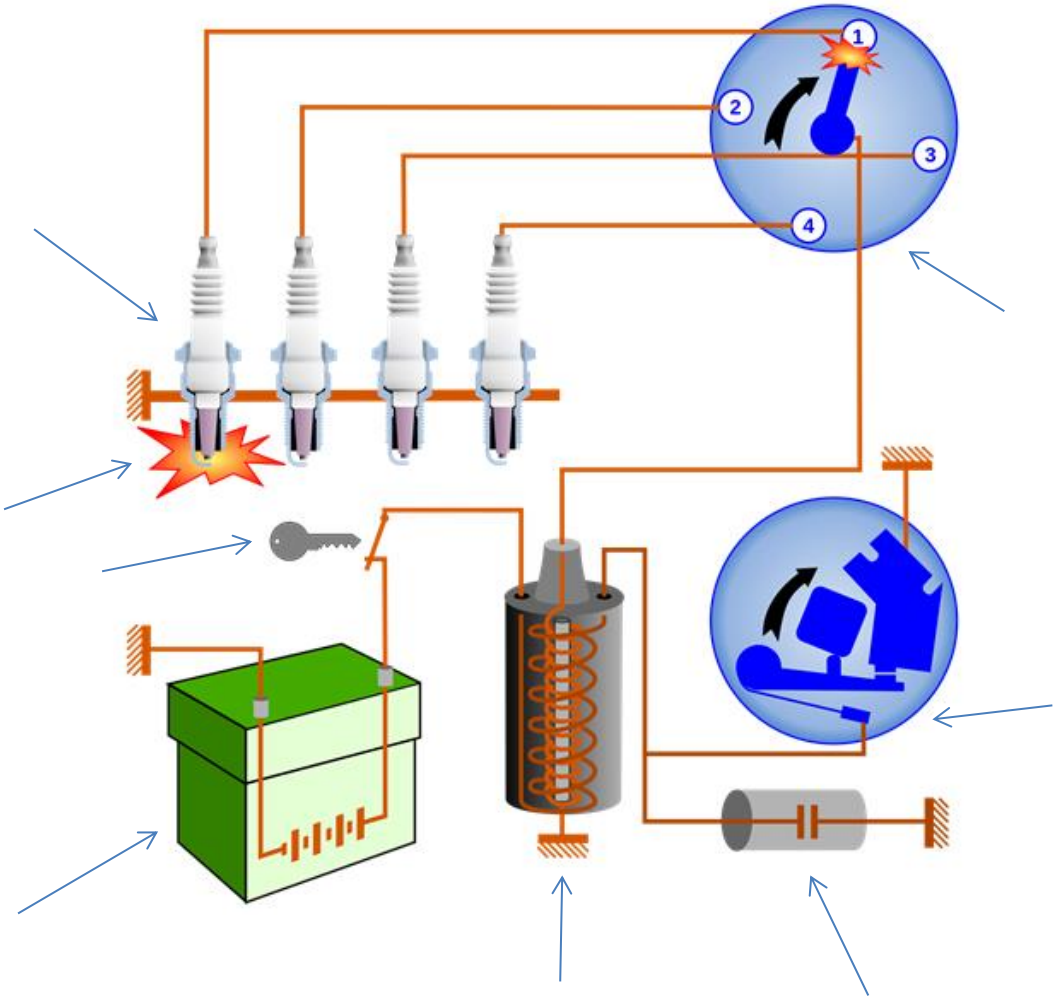


Alison.jones@gretb.ie

Labelling a Picture

Example

Label this picture of an ignition system:

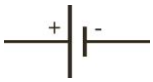
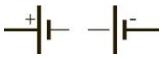


Distributor	capacitor	contact breaker	spark plugs
Ignition coil	electric arc	contactor	battery

Alison.jones@gretb.ie

Labelling Graphical Symbols

Example: complete the table with the correct labels

Ammeter	Fuse	Resistor	Battery	Cell
Ohmmeter	One Way Switch	Incandescent Lamp		Voltmeter

Alison.jones@gretb.ie

Completing a visual guide

Example: complete the instructions with the correct words

Fitting a Butt Hinge

Bradawl

Hinge

Pencil

Marking gauge

Chisel

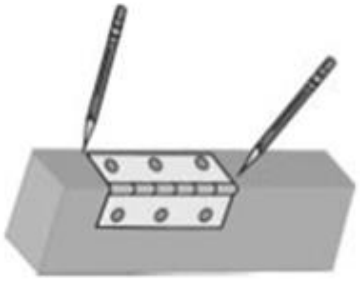
Mallet

Pencil

Screwdriver

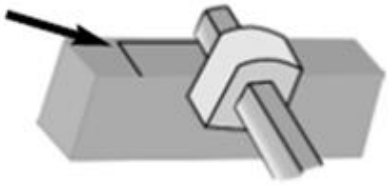
Instructions

1.



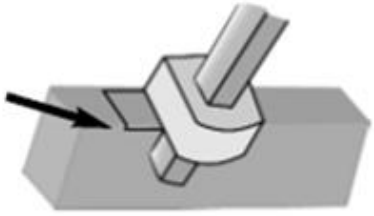
With your ____ , mark on the wood where you are going to put the .

2.



Set your _____to the width of the hinge. Using your gauge, mark a line on the wood as shown by the arrow in the picture.

3.

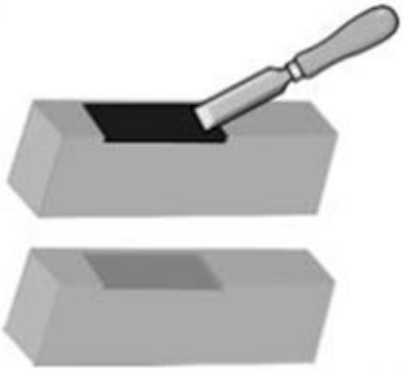


Set your marking gauge to the thickness of the ____. Using your gauge, mark a line on the wood as shown by the arrow in the picture.

4.

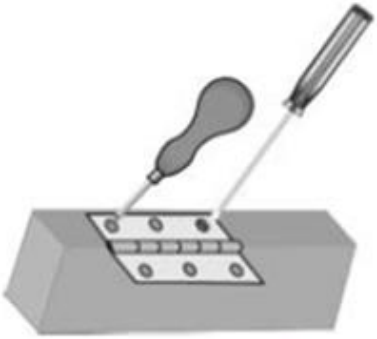
Using your ____, darken the space inside the lines you have marked.

5.



Using your ____ and ____ , chop out the darkened space to make a slot for the hinge to fit into.

6.



Place the hinge into the slot. Use your _____ to make holes for the _____ Screw the hinge on with your _____

Taken from *SkillsWords* NALA

Alison.jones@gretb.ie

Using Charts and Tables with Comprehension Questions

Using charts and comprehension questions

Information presented in a table is easy to read. Students can also practise their scanning techniques.

- Copy the chart you want and paste it into your word document
- Type up questions as needed

Tip

- Make the questions more difficult as the exercise progresses to stretch the learners

Alison.jones@gretb.ie

Using Charts and Tables with Comprehension Questions

Example

Short-term load		*Permanent load*	
Per interior lamp	5W	Ignition	20W
Per flasher lamp (indicator)	21W	Electric fuel pump	50–70W
2 stop lamps	42W	Electronic petrol injection	70–100W
Per reversing lamp	21W	*Long-term load*	
Horn	25–40 W	Car radio approx	10–100W
Fog lamp	21W	Per licence-plate lamp	10W
Rear-window wiper	30–65W	Side lamp	5W
Wipers.	80W	2 headlamp dip lights	110W
Cigarette lighter	100W	2 headlamp main beams	120W
Rear-window heater	120W	Per rear tail light	5W

For diesel cars	
Heater plugs for starting (per cylinder)	100W
Power windows	150W
Electric radiator fan	200W
Starter	800–3000w

Answer the following questions:

1. Which system has the highest value for the short-term load? _____
2. Which system has the highest value for the permanent load? _____
3. How many watts are needed for the 2 headlamp main beams? _____
4. For diesel cars, how many watts are needed by the starter? _____
5. Which systems require the least wattage? _____ & _____

Alison.jones@gretb.ie

Using Cloze Exercises

Using cloze exercises

Cloze(filling the gaps) is a useful technique to assess comprehension, word recognition and can consolidate skills learned in class.

- Select the words you want to remove from your text
- Write them into a text box below the exercise
- Leave underlined spaces in the text
- Use images to help present the exercise

Alison.jones@gretb.ie

Using Cloze Exercises

Example

Fill the gaps for each sentence:

The Rotor: contacts the central high _____ cable from the coil via a _____ _____ carbon brush.

The Rotor arm: passes close to the output _____ which connect via _____ _____ _____ to the spark plug of each cylinder.

Inside the distributor: the high voltage _____ is able to jump the small gap form the _____ _____ to the contact.

The distributor shaft: has a _____ that operates the contact breaker.

The points: opening the points causes a high induction voltage in the _____ _____ _____.

Cam	rotor arm	ignition system's coil	voltage	energy
Spring loaded	high tension cables	contacts		

Alison.jones@gretb.ie

Using Flow Charts

Flow charts

A good way of explaining a system that is visually appealing and easy to follow

- Click insert + text box and type in your the text
- Click insert + shapes to choose an arrow type that you want

Tip:

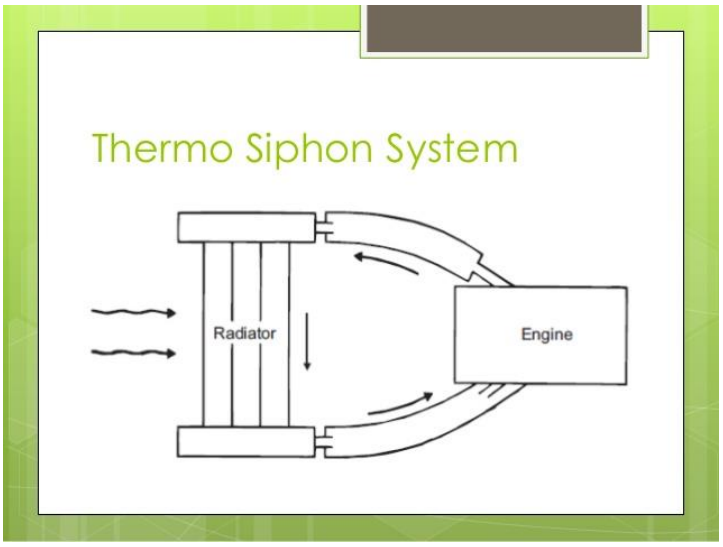
You can copy and paste text boxes and arrows to save time, then adjust accordingly.

You can jumble the boxes up for students to order in the correct sequence (see example)

Alison.jones@gretb.ie

Using Flow Charts

Example: how a Thermo Siphon System Works



As engine heats up, coolant rises up the engine block by convection

Returns to the engine via the **lower radiator hose**

The radiator removes the heat

Coolant is stored in the radiator and the engine

Enters the radiator via the **top hose**

Write the boxes in the right sequence to explain how a Thermo Siphon system works.

1	→
2	→
3	→
4	→
5	→

Alison.jones@gretb.ie

Creating a Worksheet Template

Creating a template for use with practical tasks

- Create a table
- Insert the headings that you want
- Leave enough space for students to write the answers

Tip:

Your headings can act as a guide for students so you can be precise about these. They can mirror tasks as outlined in the text book.

This template can be adapted for use in a variety of activities.

Alison.jones@gretb.ie

Creating a Worksheet Template

Example

7.2 Using a DVOM to Measure voltages p15

Practical Unit: p 15 & 16 Complete the table	
Objective	
Safety check	
Points to note	
Step by Step	
1. Set up the meter for a voltage check	
2. Check the meter function	
3. Check the voltage of the battery	
4. Interpret the results	

Alison.jones@gretb.ie

Creating a Puzzle Online

Creating a puzzle

This is an online tool that creates different types of puzzles in double quick time.

- Go to www.puzzlemaker.com
- Choose the type of exercise you want to create
- Follow the instructions to insert your answers and to create your puzzle
- Copy and paste into a word document
- Check it before you use it!

Tip:

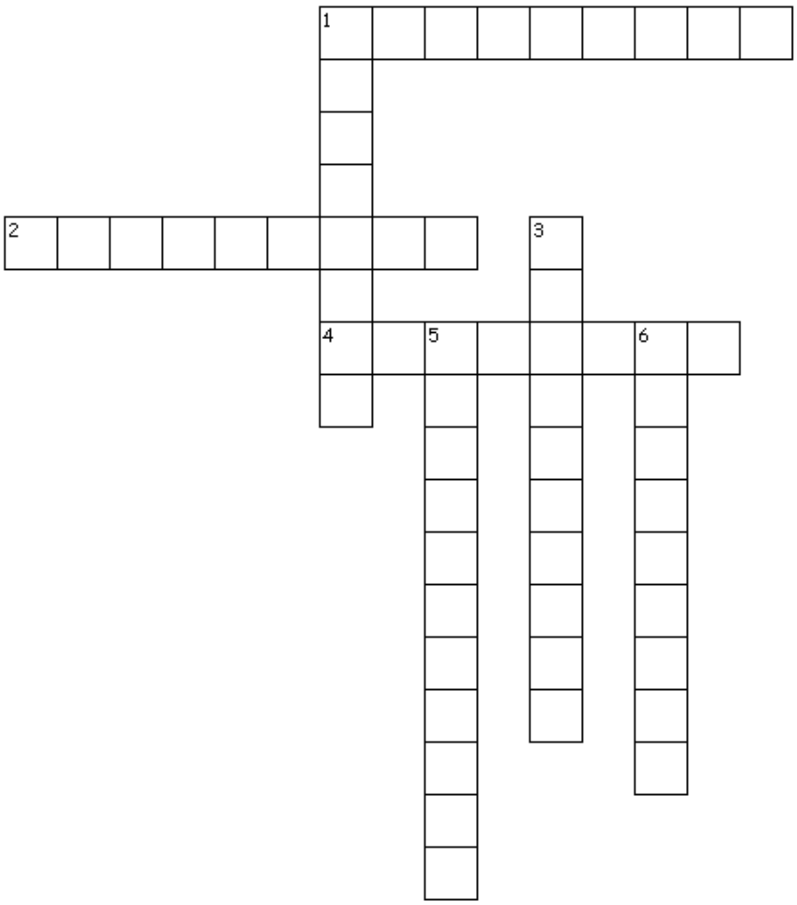
Give the answers in a text box below if desired. You can turn it upside down using the green circle on the active text box.

Alison.jones@gretb.ie

Creating a Puzzle Online

Example

Oil Additives Puzzle



Across

1. An inhibitor that stops acid forming
2. An inhibitor that stops hot oil combining with oxygen to produce sticky material
4. Different combinations of these do different jobs in an engine

Down

1. _____ intermediates that enhance performance
3. Will reduce carbon deposits on piston rings and valves
5. Will collect particles that clog the system
6. A _____modifier will change the thickness of the flow of oil for example

Answers: Dispersants, detergents, viscosity, oxidation, corrosion, chemical, additive

Alison.jones@gretb.ie

Study Aids: Q & A Worksheets

Question and Answer Sheets

This is an ideal way to target specific areas that you want your students to study.

- Create a table in word and insert your questions
- Give page numbers if necessary to assist the students

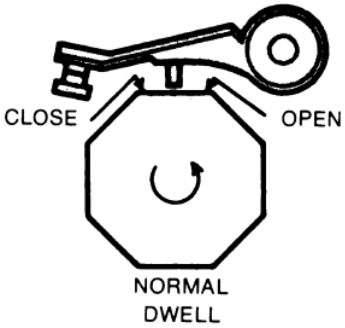
Alison.jones@gretb.ie

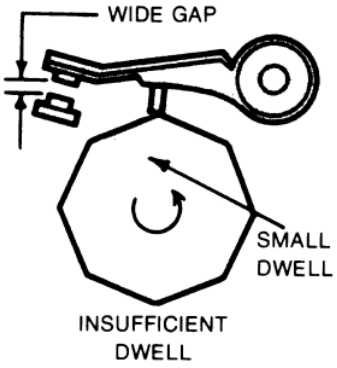
Study Aids: Q & A Worksheets

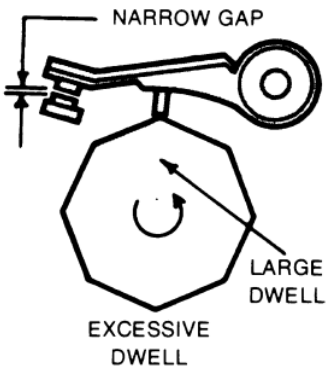
Example

3.7 Dwell Angle p15

What is it?	
How is it specified?	
What happens during each rotation of the cam/distributor?	
How long must the points stay closed?	
How long must the points stay open?	
A large gap→	Gives a small dwell angle
A small gap→	Gives a large dwell angle







Alison.jones@gretb.ie

Study Aids: Quizlet Flashcards

Quizlet.com

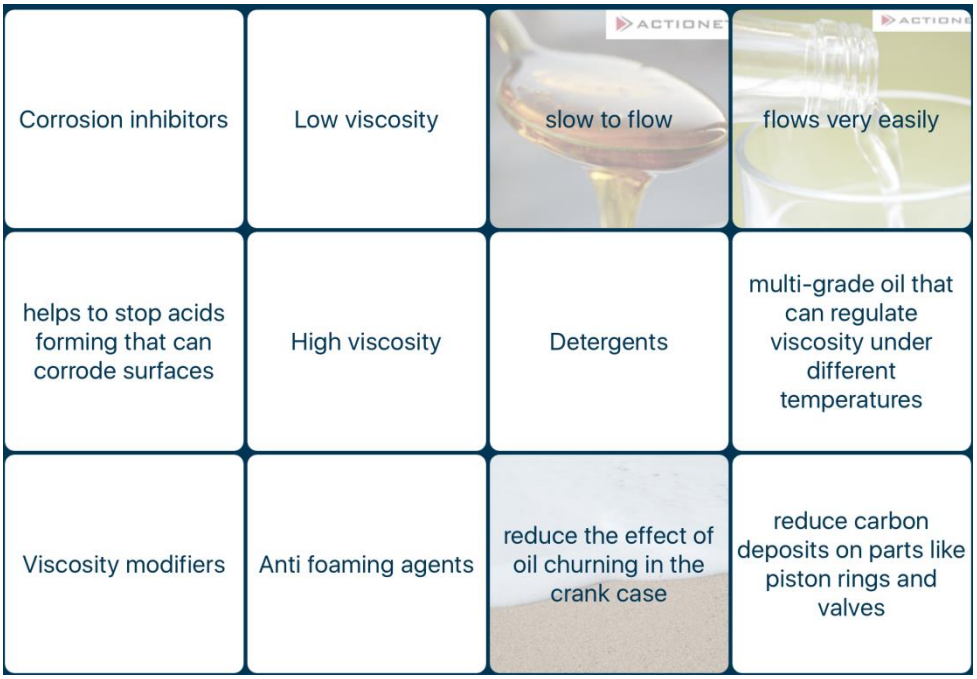
- Go to www.quizlet.com
- Log in (you will have to register but this is a free site)
- Create a set of flashcards for your students
- Tell them about it

Tip:

This website is ideal to create tests as well, with **written tests, true or false, multiple choice questions and matching questions and answers** all available. There are also games options, such as the matching game below.

The app is available free on mobile phones and tables. Students can also compete with each other.

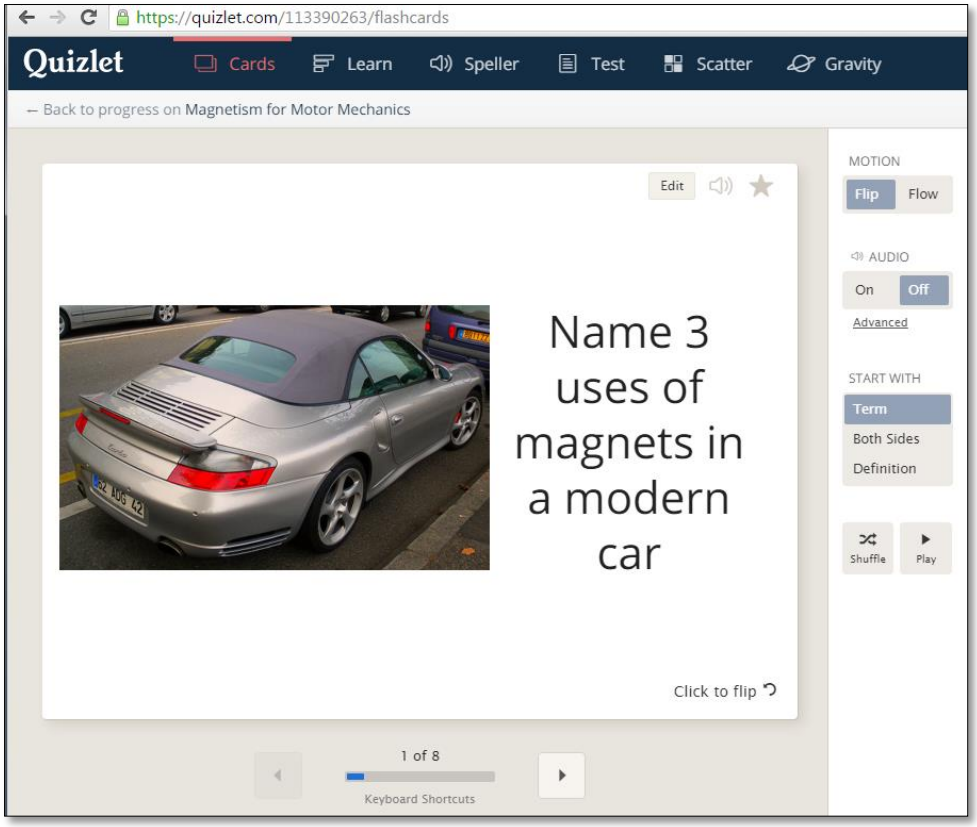
'Match the definitions' exercise

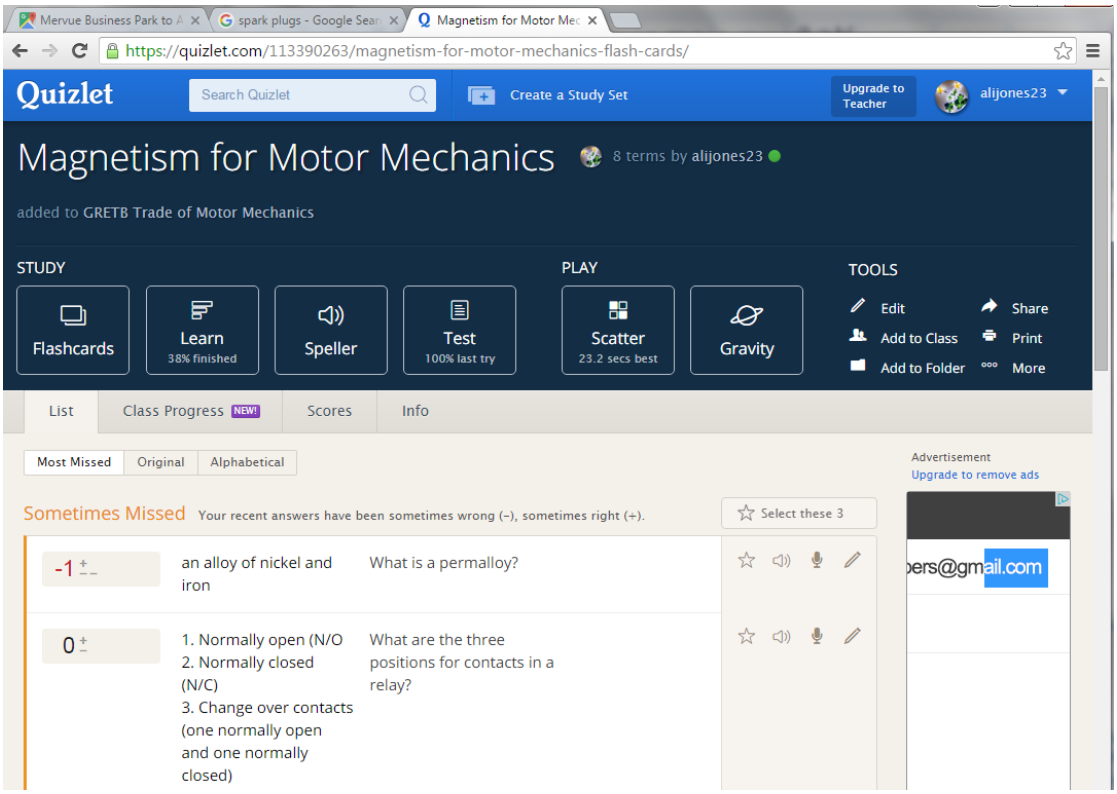


Alison.jones@gretb.ie

Study Aids

Example





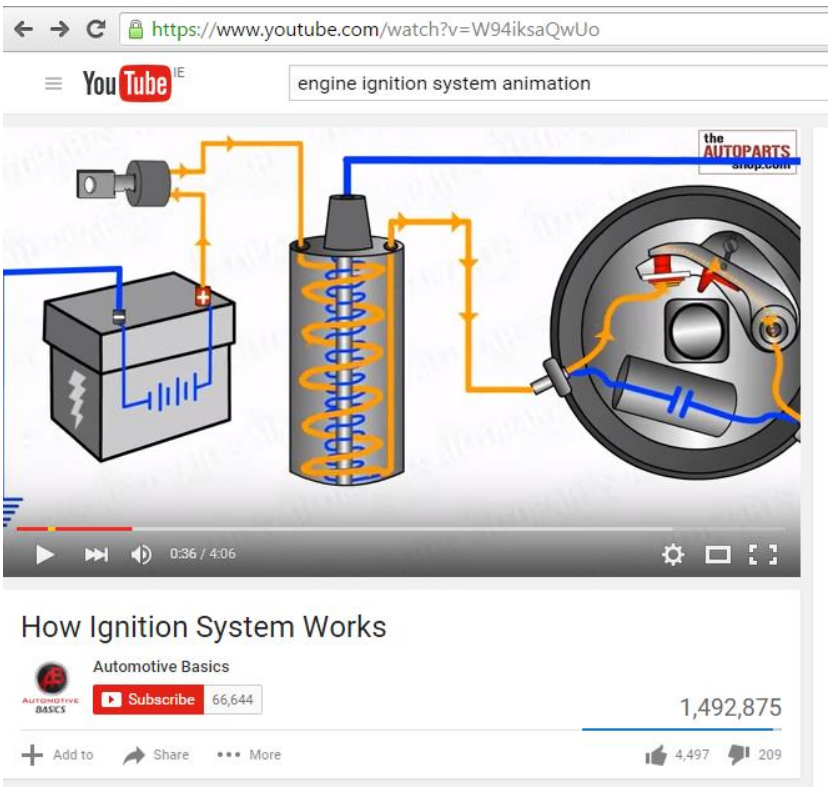
Alison.jones@gretb.ie

Study Aids: YouTube

Short videos with animation are the most appealing and students can search for exactly what they need on YouTube. This is ideal to aid understanding.

Example

Check out this 4 minute animation: https://www.youtube.com/watch?v=W94iksaQwUo

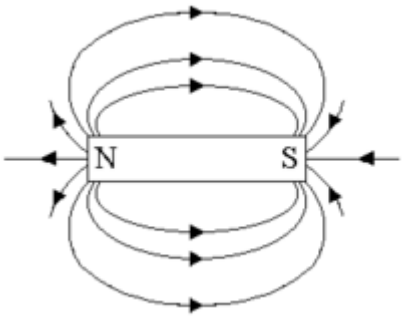


Alison.jones@gretb.ie

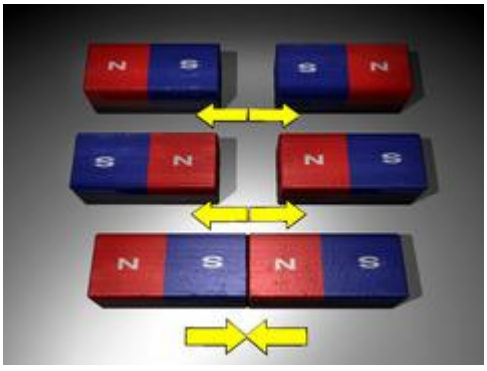
Sample of Multiple Choice Questions Generated by Quizlet

8 Multiple choice questions

1. What is the Curie point?
   - the imaginary lines of a magnetic field
   - Aluminium, nickel and cobalt
   - an alloy of nickel and iron
   - the temperature at which iron cannot be magnetised

2. 

What does flux mean?
   - an alloy of nickel and iron
   - the temperature at which iron cannot be magnetised
   - the imaginary lines of a magnetic field
   - Aluminium, nickel and cobalt

3. 
What is magnetic attraction and repulsion?
   - Like poles repel, unlike poles attract
   - Aluminium, nickel and cobalt

Alison.jones@gretb.ie

- an alloy of nickel and iron
- the imaginary lines of a magnetic field

4. What does remanence mean?

.
- the residual effect of the magnetism once the permanent magnet is removed
- the temperature at which iron cannot be magnetised
- the imaginary lines of a magnetic field
- an alloy of nickel and iron

Name 3 uses of magnets in a modern car

- the imaginary lines of a magnetic field
- Like poles repel, unlike poles attract
- window lift motor, starter motor, cooling fan motor, windscreen washer pump, ignition systems
- the temperature at which iron cannot be magnetised

5. What is a permalloy?

.
- an alloy of nickel and iron
- the imaginary lines of a magnetic field
- Aluminium, nickel and cobalt
- Like poles repel, unlike poles attract

6. What are the three positions for contacts in a relay?

Alison.jones@gretb.ie

. an alloy of nickel and iron

Like poles repel, unlike poles attract

1. Normally open (N/O
2. Normally closed (N/C)
3. Change over contacts (one normally open and one normally closed)

Aluminium, nickel and cobalt

7. 

What is alnico?

. Like poles repel, unlike poles attract

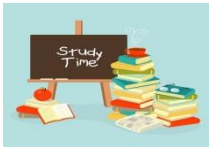
an alloy of nickel and iron

Aluminium, nickel and cobalt

the imaginary lines of a magnetic field

Alison.jones@gretb.ie

Appendix: Learning Styles Questionnaire



Learning Styles Quiz

Complete this quiz by circling the responses which best describe you

1. When learning something new, you

a. like to have the aid of diagrams, posters, or a demonstration
b. like to have verbal instructions
c. Just go for it and try it out

2. When you are reading, do you

a. visualize in your mind the descriptive passages
b. enjoy the characters' dialogue
c. sometimes read action stories, but prefer not to read

3. When you are spelling, do you

a. try to "see" the word
b. sound the word out before or as you spell it
c. write the word down to find out if it looks or "feels" right

4. When concentrating on something, you

a. are distracted by movement and untidiness around you
b. are distracted by noises in the area you're working in
c. have difficulty sitting still for even short periods of time

5. When problem solving, you

a. write the problem down or draw diagrams to visualise it
b. talk to someone or yourself about it
c. try and use concrete objects to find a solution

6. If you are putting something together, you

a. follow the instructions and look at the pictures
b. wish there was a video or tape explaining what to do
c. ignore the instructions and figure it out as you go

7. When trying to recall names, do you remember

a. the person's face but not their name
b. the person's name but not their face
c. clearly the situation in which you met them

8. When giving directions to someone, you

a. visualise the route first or draw a map
b. give clear, concise instructions
c. move your body and gesture as you give them

Alison.jones@gretb.ie

9. If you need help with a particular computer application, would you

a. look for pictures or diagrams to explain the solution
b. ask someone for help or call a help desk
c. persevere and try to figure it out yourself

10. You can remember a list of items best if you

a. write them down
b. recite the list to yourself
c. use your fingers to count the items off

Scoring

Add the total number of responses for each letter (a, b, c) and record each total

a. _____ b. _____ c. _____

If the majority of your responses were for **(a),** you are primarily a **Visual Learner and learn best by seeing**

If the majority of your responses were for **(b),** you are primarily an **Auditory Learner and learn best by hearing**

If the majority of your responses were for **(c),** you are primarily a **Kinaesthetic Learner and learn best by doing**

Many people have more than one learning style, so you may find you have some responses in each category. The category with the greater number of responses will be your main learning style.

Tips for the Visual Learner

- Make sure you can see as well as hear the tutor
- Take notes or ask for handouts
- Use pictures, films, computer programmes
- Use colours to highlight what you want to remember
- Study in a quiet place away from chat (including radio and TV.)
- Make pictures in your mind to help you remember

Tips for the Auditory Learner

- Take part in class discussions
- Read or say out loud
- Make up jingles or rhymes to help you remember
- Record what you want to learn and play it back

For more information on learning styles see www.vark-learn.com

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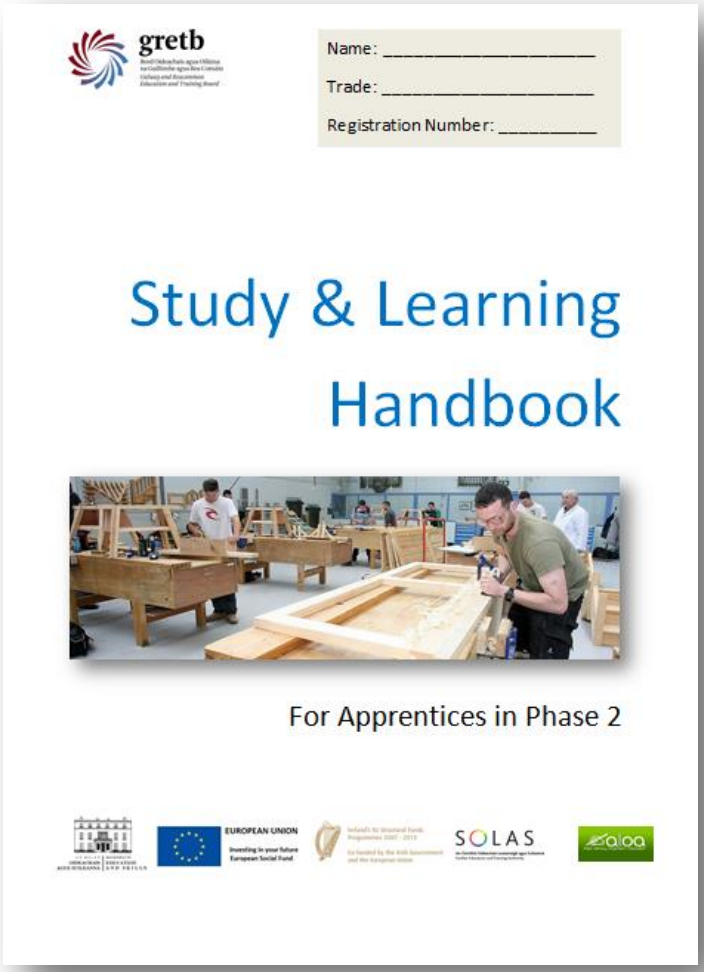
Tips for the Kinaesthetic (Physical) Learner

- Take breaks from learning often
- Move around to learn new things (for example, read while walking around the room)
- Stand while working
- Try and make your learning active or practical by making or doing something

Alison.jones@gretb.ie



Study and Learning Handbook for Phase 2 apprentices now available. Call Alison Jones on091 806289 for a copy or send an email to the address below.

Please send any comments, suggestions, changes or additions to Alison.jones@gretb.ie

Alison.jones@gretb.ie