

DRAFT

Basic Study Skills

**A presentation on some key
steps to success in learning**

**GEM/TKI 07:10:04a
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A presentation on some key steps
to success in learning

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Sections

- Understanding “Knowledge” and “Learning”
- “Spotting” & “Fixing” Learning Problems
- Learning in the Classroom
- Note-taking skills & tips
- “Practical” learning in Labs and Workshops
- Learning by reading textbooks & doing homework
- Doing SBA’s and similar assignments
- Preparing for Theory and Practical Exams
- Exam techniques
- Learning for Life and for Work

SECTION I:

Understanding “Knowledge” and
“Learning”

First, what is knowledge?

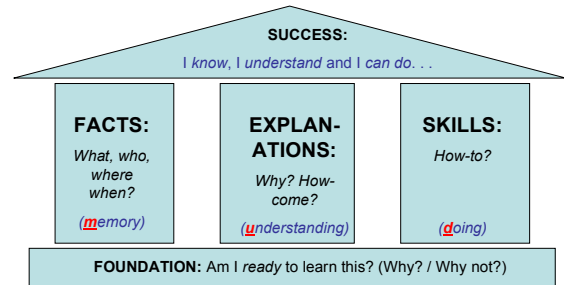
- Learning is about *knowledge*, but what is that?
- Summing up: *knowledge is “justified, true belief”* -- *what we accept (or should accept) as true or sound, on good grounds for doing so.*
- Sometimes, we make mistakes in what we think we know, but if we know gaps or errors exist, that means that *we can spot and correct them!*
- Learning, then, is *the art of building up knowledge* – including, finding and fixing our gaps, errors and “roadblocks.”

What about skills?

- Knowledge as viewed above has been mostly about “*know-what*” and “*know-why*.”
- Skills expands this: **KNOW-HOW**. (And that is very important indeed!)
- So, *when we are skilled, we can put what we know to work*, to solve paper or (especially) practical problems, overcome challenges, and achieve success.
- Study skills, of course, are the know-how for learning . . .

Knowing: What, Why, How

- This brings us to *the Three Pillars of The Temple of Learning*:



Attitude

- This one is simple . . .
- **Attitude determines altitude!**
- So, we must recognise that if millions have learned these things before us, chances are so can we . . .
- *IF WE APPLY OURSELVES, working hard and working smart.*
- But, that also means that we have to work at it, diligently, day by day, week by week.
- For that, what follows will help us . . .

SECTION II: “Spotting” & “Fixing” Learning Problems

MUD and “de-bugging”

- “MUD” identifies three keys to success, and is useful in breaking through learning roadblocks:
 - **Memory**: we have to be able to remember key facts, words, symbols, diagrams etc.
 - **Understanding**: we have to be able to “make good sense” – identify and explain -- the key facts etc.
 - **Doing**: we have to be able to solve problems and overcome challenges, as well as do practical things, or our “learning” is largely useless.

Fixing Roadblocks, 1: Memory

- First, we *have to identify the key facts etc.*, from class, from books or the Internet, or whatever.
- These are *the ones that allow us to understand what we are studying and solve the problems we need to solve.*
- Then we *have to organise them for easy learning* (e.g. the temple diagram above, the “MUD” initials, a set of 3” x 5” index cards or even times tables), and then *review and check them until the information “sticks.”*
- If there are gaps, they will show up as “holes” in our who-what-when-where information.
- So, let us look for such holes and patch them!

Roadblocks, 2: Understanding

- If there is a gap in our understanding, we will be unable to answer why or how questions.
- This is because we will not “see” how things are tied together, and how they work together.
- A good test is if we are able to draw or use a diagram, and make sense while we discuss it. (Compare the learning temple diagram . . .)
- To fix this, start with a simple case or two -- maybe a hands-on practical example -- and see how they work, then move on to more difficult cases. (Ask for help if you are still stuck . . .)

Roadblocks, 3: Doing

- *If you meet a practical or pencil-and-paper problem in school, chances are, someone already knows how to solve it.*
- So, if you are stuck, the trick is to figure out why, and then to find out and do the steps to get it right.
- One way: review the instructions, and follow them step by step, making sure you have in hand and properly lay out all the facts, materials etc you need.
- Another: look at and follow the steps in a paper or practical example
- A third: ask for help! (Don’t be afraid: This is a part of the job of a teacher.)

Section III: Learning in Class

Being *prepared* to learn in class . . .

- First, *be there* – regularly, and on time!
- *It helps to read ahead* if you know what is coming, and to make notes on points you see in the book and on questions to ask.
- (I sometimes will make notes IN PENCIL in the margin of my books, and make a mini pencilled-in index at the front, for key things I need to know where to find.)
- Next, have the materials: books, notebooks, pens tools etc. (Handy hint: *Use your school-bag and timetable.*)

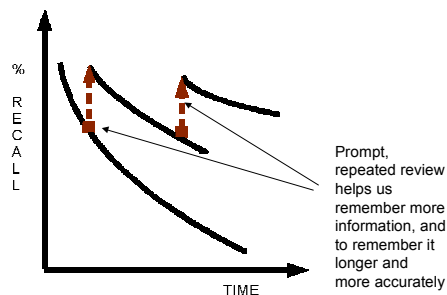
Learning in the Classroom

- **Pay attention.**
- Make well-organised notes [in the proper notebook or file folder],
- Ask questions if necessary, and listen to the answers.
- Take part in discussions (and make notes!)
- Write down assignments in a homework notebook: *subject, date given, date due, what to do.*
- Do in-class assignments, and ask for help if you get stuck.

As you get home . . .

- At the end of the school day, spend a few minutes looking over the notes you made in your classes that day.
- This helps refresh your memory and helps you build up how much you remember as time goes on.
- It may be helpful to glance in the textbook at the relevant section too.
- Jot in additional points or questions in your notes, as they come to mind.

Why such early review is key:

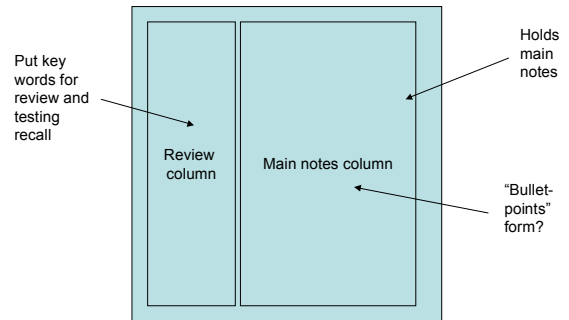


SECTION IV: Making Notes

Making Notes . . .

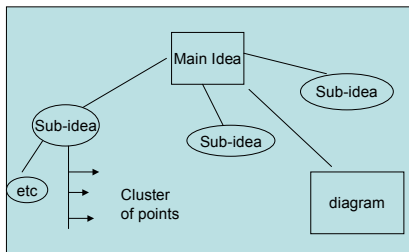
- “*The weakest ink is stronger than the strongest memory*” – an old Chinese proverb
- That is, good notes help us record and summarise information for later review and use.
- As this presentation shows, “points-form” is helpful.
- It may also help to rule in a wide margin [maybe $\frac{1}{4}$ the width of the page] in your notebook, to make a “review column.”
- (To use it, write key words there and then cover up the main column. Next, recite to yourself the main points, and check. Repeat till satisfied.)

So, a Possible notebook layout:

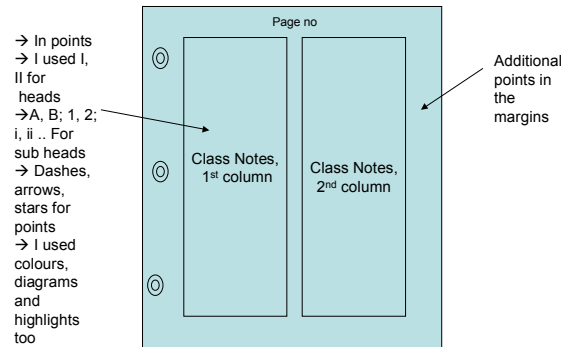


Idea Mapping Notes:

- Best for thinking through a topic or laying out ideas and their links for writing an essay, or to make a broad review of the key points of a topic etc:



How I laid out my own notebooks



Making Notes, 2 . . .

- I find 3-ring folders very useful for making notes (and for assignments).
- Manila file jackets are almost as useful. (I have even sometimes punched holes in cut out Cornflakes box fronts and backs, and laced in my pre-punched notes and printed off Internet downloads pages.)
- One trick: Add in an “extra” section for each subject, for general supplementary notes, based on reading or research on the Internet etc.
- Another: make a general note summary of key terms, laws, principles, diagrams etc, for exam review. (You might want to use a deck of 3” x 5” index cards for that – check out a stationery store.)

SECTION V: “Practical” Learning in Labs and Workshops

Rule No. 1:

- **BE SAFE** – follow instructions; a lab can be a very dangerous place!
- That means you must listen to or read such instructions
- Then, carefully lay out the equipment and materials, etc.
- Next, follow the steps in their proper order.
- If you don't understand something: ASK!

Before the Practical Lesson . . .

- **Be prepared** -- read prep materials, and lay out the step by step instructions in your practical notebook so you can see what you are to do.
- If you are to build or assemble something -- especially if you will be using power tools or hot soldering irons etc -- make sure you understand the exact steps, illustrations and safety procedures you will use.
- If information is to be collected and observations are to be made, draw up tables to collect information, set up what you need to draw sketches etc.
- Make sure you know what to do to make ACCURATE observations.

Scientific method: O, HI PET . .

- **O** -OBSERVE patterns (and “exceptions”) in nature
- **H** - HYPOTHESIS: what is the apparent underlying pattern [explanation, or theory, or model], or law etc?
- **I & P** - INFER & PREDICT: based on the pattern, what do you expect to happen in new experiments or to see when you make fresh observations?
- **ET** - EMPIRICAL TESTING: check ideas and predictions against the “real” world. (Does observation reliably support or contradict the predictions?)

A “standard” school lab write-up

- Subject, experiment title, date, name and other personal information, etc.
- Objective: what is this exercise trying to achieve, relative to O HI PET?
- Theory background: in light of O HI PET, what do you expect for the situation you will explore?
- Diagram(s), Apparatus, procedures.
- Results and Observations, graphs etc.
- Discussion and conclusion: what did you achieve?

For instance . . .

Name, form _____ Date _____
Subject _____
Title of Experiment or Exercise _____
Objective:
Theory/Background:
Diagram:
Apparatus:
Procedure:
Results & Observations:
Discussion & Conclusion:

During the Practical Session

- Settle down to work as soon as you arrive, and begin as soon as you are to do so.
- Make sure equipment, materials, & information are in good order, and are laid out so you may work safely, accurately and without delays.
- Make records as you work, and draw graphs etc. as you proceed, so you can see where you may need to make adjustments.
- Make a preliminary analysis -- is this what was expected? Is there a problem? How can it be fixed?

After the session

- Complete the write-up, as instructed
- It should be well-organised, neatly laid out and legibly written
- Submit it in good time
- Examine corrections, and apply the lessons learned

SECTION VI:

Learning by reading textbooks
& by doing class-/home- homework
exercises

Useful features of a textbook

- Chapters and sections on the topics to be learned
- Chapter summaries
- Lists of key words
- Diagrams, graphs, tables, pictures -- and their captions
- Text boxes with additional information
- Worked examples and set exercises
- The Table of Contents (how the book is organised)
- The Index (where to find what)
- The Glossary (a mini-dictionary)

SQ3R:

- **S: survey** the chapter or section to see the key ideas, words, facts, etc
- **Q: question** – ask who, what where, when, why, how about the key points you picked up
- **R1: read**, in light of the Q's, making notes as necessary.
- **R2: recite** – say to yourself in summary what you learned, especially in answer to the Q's
- **R3: review** – go back through your answers

Worked examples:

- These often show how to use the information in the text to solve the sorts of problems you will have.
- It can be very helpful to try to solve the worked out problem yourself, then check to see how the text solves it.
- Correct your mistakes.
- Ask for help if necessary.
- Now that you see how to solve the problem, try the exercises . . .

Making sense of stories

- Often, we read (or must write or tell) stories -- whether page-length or novel length. (Plays and movies simply act out stories on-stage, or on the screen.)
- Start by identifying the key parts of a story:
 - 1] *characters*,
 - 2] their *setting* -- where and when,
 - 3] the *challenge* they face,
 - 4] the *adventure*: events, issues & strategies
 - 5] *resolution* -- how does it all come out, why?
- Jot down notes on these points as you read it, and use them to guide you in answering questions.
- You can also use the same approach in writing or telling your own stories.

Class-/Home- work Exercises

- These are very important for review, and they help build up skills to solve problems.
- Record the set exercises in your homework notebook, and do them in good time for when they are due.
- Use the worked examples to help you, and if you are stuck, refer to the relevant section of the chapter.
- Don't be afraid to ask for help if you are "really" stuck.

RAW SEA: Math-type problems

- **R - READ:** What is the problem about? (Can you *draw a picture* that shows what is going on?)
- **A - ASK:** what are they *asking* for as the *answer*?
- **W - WRITE:** Jot down the *given facts* that will help answer the problem, and any equations, theorems, or additional information that you think will help.
- **S - STEPS:** What are the *steps* to move from the given info and the equations etc, to get to the *solution*?
- **E - EXECUTE** the steps, in logical order. (I find it may help to give a brief note on why each key step was taken.)
- **A - ANSWER:** State it. Does it make sense? Why/why not? If not, how can you fix the problem?

ROPE: Essay Questions

- **R - READ:** What are they talking about, and what are you to do about it: describe, explain, compare, examine pros and cons and conclude, etc?
- **O - ORGANISE:** What relevant points do you know? Are there gaps in your information? (If so, what can you find out, where?) How can this information be most clearly presented, step by step?
- **P - PLAN:** start with the first thing you want the reader to think about; give background info, add new details and raise issues [pro & con!], then weigh-up and conclude.
- **E - EXECUTE:** Write your essay, based on your plan. If you have time, re-read, correct and adjust it to a polished final form.

SECTION VII: Doing SBA's and similar assignments

SBA's

- **School-Based Assessments** [SBA's] are often "extensions" to standard school lab or workshop assignments and projects, but are standardised and set out for examiners to grade them.
- Others are based on fieldwork and library or survey research, in light of O HI PET, or whatever is relevant.
- If you have worked at the steps for doing labs and workshops, and for doing library or fieldwork and survey research, you should be well equipped for SBA's.
- Work closely with your teacher and anyone else who is helping you.
- If you need help, ask . . .

One more thing . . .

- Start working on the report right from the beginning of the project, if it requires an overall report.
- That way, you won't find "gaps" you have to try to write your way around when you finish your project.
- Think about the main point you need to study, and how you will organise your report based on the ROPE approach.
- An Idea Map may also help you to see how the key ideas in the project and its report are tied together.

SECTION VIII:

Preparing for Theory and Practical Exams

Final Review

- The key word is the first one: **FINAL** review.
- It is vital to work steadily through the year, so you are not forced to try to “cram” a years’ work in a few days at the end -- which invites failure.
- But, a final going over and polishing up, with exam-practice is also important. (Not least, this helps avoid panic in the face of an unfamiliar task, under unfamiliar, high-stress test conditions.)
- By the way, this is one reason why mock exams are helpful.

Past papers & Practice Books

- Working through past papers and exam practice books is a time-tested way to help with final review.
- It is especially important to practice multiple choice and similar questions.
- For, nowadays such papers are often set in such a way that if you have the answer **ALMOST** right, but not exactly right, a handy *distractor* is right there.
- So, enough tiny misses can make you fail just as badly as if you knew nothing at all and were guessing wildly.

SECTION IX:

Exam techniques

As you begin . . .

- Read the instructions, carefully.
- Look at the paper as a whole, and pick your questions if you have a choice.
- Work out how much time you have to answer each question, and see to it that if you get stuck, you move on to the next question.
- Often, exams are set so that one mark is about one minute’s worth of work. [Check this on your past papers.]
- If you can, pick and start with your best question.

Multiple Choice Tips

- Check ahead of time to see if wrong answers get minus marks. (If not, plan to guess the questions you don’t have time to answer.)
- Sometimes, it is easier to eliminate wrong answers than to pick the right one. So, see if you can eliminate all the wrong ones if the right one is not obvious.
- Even if you can’t eliminate **ALL** the wrong ones, you may cut out enough that the odds of guessing right swing in your favour.
- It can help to highlight key words, draw a sketch or quickly work out a calculation.

If you have time . . .

- Quickly look over your answers, and correct or add more as you think wise.
- If you feel like quitting early and walking out, DON'T.
- Instead, look for part-questions, and begin there. Sometimes, as you work, you will see a way forward to the rest of the question.
- Never, never, never give up!

SECTION X: Learning for Life and for Work

School, learning and Life

- Schools may be imperfect, but they reflect the real working world, and help prepare us for life and for earning a living.
- In short, school is vitally important.
- In fact, with technology moving as fast as it is, we will have to be learning fresh things our whole life long, if we are to succeed.
- So, let's make the best of our opportunities under God, and let us find and use our strengths to overcome our challenges.

So . . .

- If we do not focus on learning *now*, then when will we learn?
- If not *here* in school, then where?
- If not *us*, then who?

Again . . .

**Never, never,
never give up!**

-- W. S. Churchill
(school "dunce" and great statesman)

END