Study Skills for High School Students

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September 28, 2024

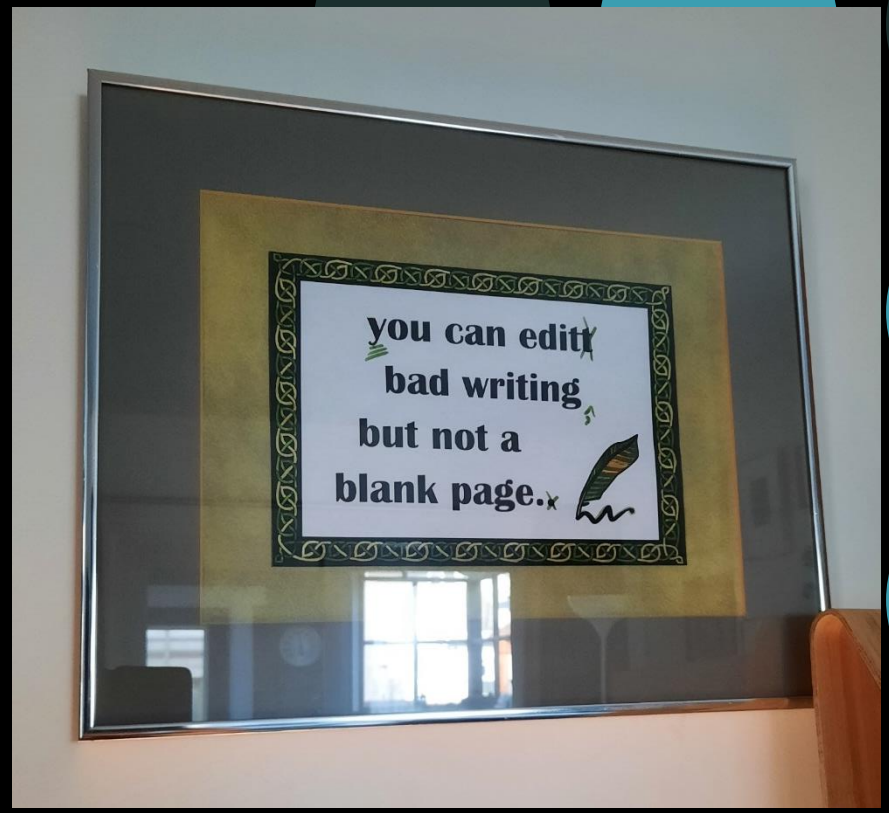
What are discussing today?

- Study environment tips
- Time management
- What does “read this part of the textbook” mean?
- Note-taking & remembering information
- Review strategies for before and after a test
- Test-taking skills

Study environment tips

What makes a good study space?

- Distraction free
- Music – yes or no?
- Organized
- Some portability (for when normal space can’t be used)
- Can you post a study goal where you can see it?



https://studymagazine.com/student-tips/creating-productive-work-study-environment/
https://www.rasmussen.edu/student-experience/college-life/study-environment-tips/

Brainstorm

What distracts you when studying?

Brainstorm

How can you
minimize distractions
when studying?

Organization

- Physical Organization
- Digital Organization
  - File naming
  - Organizing files in your computer
  - Methods of tagging files (and creating reference lists!):
    - Zotero (https://www.zotero.org/)
      - https://www.commonsense.org/education/reviews/zoterobib
    - Mendeley (https://www.mendeley.com/reference-management/reference-manager)

Time management

Brainstorm

What is procrastination?

Why might you procrastinate?

Procrastination

Delaying or avoiding a task or activity. “I can do this tomorrow!”

- *Everyone* does this some times for some things
  - Become self aware – when are you doing it? Why are you doing it?
- Fear of failure?
  - If you have never failed at anything, you don’t know what your limits are
- Hate doing the thing?
  - Remind yourself of what happens if you don’t do it
- Been working too long (burnout)? Daydreaming?
  - Take a break!

Breaking up your study time

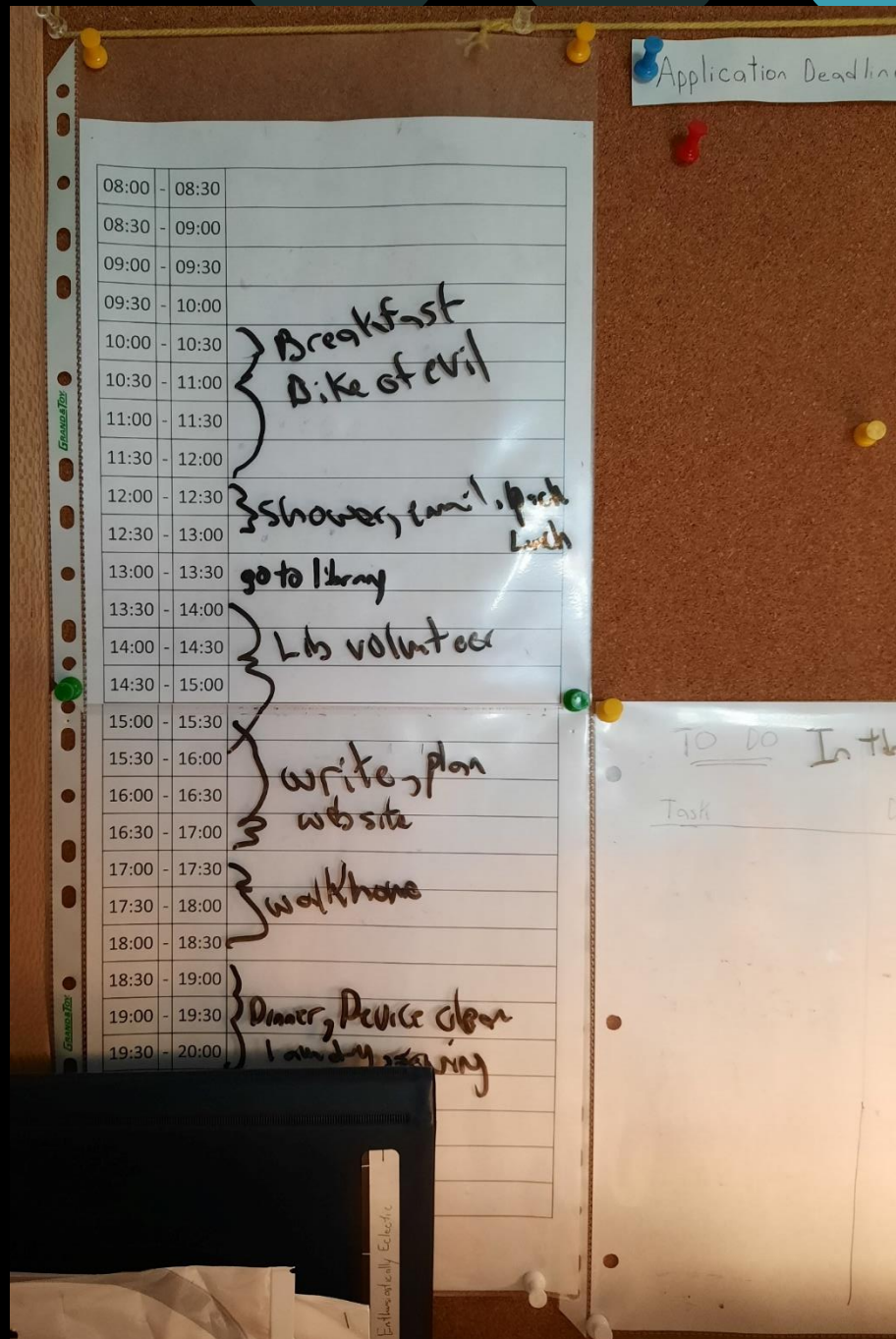
- Break up your study time into chunks about 25-30 min long.
- Take a five minute break.

More information:
https://www.forbes.com/sites/bryancollinseurope/2020/03/03/the-pomodoro-technique/

Scheduling

- How do you spend your time?
- How should you spend your time?
- Making a schedule
  - Physical calendar vs. Electronic Calendar
  - Work back from a deadline to decide how to split up your time

- Schedules are not set in stone, be prepared to change



Brainstorm

What is multi-tasking?

Multi-tasking

- Doing more than one thing at the same time
- Can be bad or good!

Bad multi-tasking

- Bad multi-tasking affects how well you can do one or more of the tasks and can even be dangerous.
- If multi-tasking will make you unsafe, don’t do it!
- Examples:
  - Making toast while in the bathtub

Bad multi-tasking

The consequences of distracted driving are devastating, and the trend is only increasing.

Nationally, distracted driving is the second biggest cause of traffic deaths after speeding.

In 2021, it was estimated that 1,768 Canadians lost their lives in fatal collisions, and distracted driving was responsible for 19.7% of these deaths.

https://www.insurancebusinessmag.com/ca/news/auto-motor/whats-behind-soaring-road-fatalities-in-canada-445011.aspx

Good multi-tasking

Good multi-tasking does not affect how well you do any of the tasks. Examples:

- Start a load of laundry, start studying. Take a break from studying when you need to change loads.
- Listen to an audio recording of something you need to study while walking or exercising.
    - Want to record audio for your own studying?
        - Try Audacity, a free audio recording and editing program
        - Sheep River Library has a high-quality microphone and sound-dampened recording area, and more equipment for video recording. https://sheepriverlibrary.ca/Services/In-the-Library/Podcast-Room

What does “read this part of the textbook” mean?

Brainstorm

What does it mean to you when a teacher tells you to "read something" for a class?

“Read this!”

- Read it, think about it
- Take notes
  - If you own it, feel free to write in it!
  - If you don’t own it: some photocopying is legal for *personal or educational use*

    You can legally copy up to 10% of a Published Work, including:

    a) a chapter from a book

    b) an article from a periodical (magazines and newspapers are types of periodicals)

    c) an entire entry from an encyclopedia, dictionary, annotated bibliography or similar reference book
  - If a works that are “public domain” or have an appropriate “creative commons” license can be copied freely.

This webpage is meant for university professors, so it may be a bit more technical guide to what can legally be photocopied for educational use than you want:
https://libraries.dal.ca/services/copyright-office/for-faculty/photocopying-guidelines.html

If you are told to “Read this”

- 1st: why are you reading it?
  - Skimming – what are the important topics from the reading?
- 2nd: read in depth and take notes

Note taking & Remembering Information

Note taking

- Different strategies work for different people – these are only suggestions
- Taking notes requires you to think about information
  - The more you think about it, the more you know it!
- Don’t record everything, just what is important to you

Some things that may help make good notes

- Include the course (or meeting name) and date.
  - something other than a class? include the name of the textbook, book, website address, etc.
  - When taking notes on a textbook, include page numbers. This way you can easily go back and re-read it.
- Learn abbreviations for common words or develop your own.
- Learn what you can go back and fill in later.
- Review the notes as soon as possible!
- Spelling *generally* doesn't matter if the meaning is clear!
- Consider using ¼ inch graph paper.
- Consider using underlining, highlighting, different colour pens, or *handwriting* mixed with printing.

Taking notes: websites

- Record the web address and the access date.
- Consider printing the website as a PDF so you can go back to it later

Method: Outlining or listing with or without comments

- Summary of key topics of the text or lecture. It is:
  - easier to both see what the notes are about and find notes later.
  - Indenting the sub-topics helps to show how the information is related
  - most practical way of note-taking for a lecture.

Example with internal comments

World Geography – Feb/15/2023

Canada, Chapter 2 (pg 42) Canadian Geography

2.1 (pg 44) Canadian (CAN) Geography
- Pop: ~35mill (2016), capital: Ottawa, north of USA (except AK), size: ~3.85 million sq. miles (bigger than US!!!!)
- Land borders: USA, Denmark (Hans Island) (Whiskey "War" is hilarious. Topic for Canada class essay?).
- Sea borders: USA, Denmark/Greenland, France (St. Pierre & Miquelon Islands) (Need to learn "territorial waters" definition)

2.2 (pg 46) CAN Provinces
- definitions: *province* (large CAN geographic area, similar to US states), *territory (???territory??? Ask teacher)*
- total 10 provinces and 3 territories
  - Alberta (AB) (pg 48), province
    - Pop ~4 mill (2016), capital: Edmonton (ask: are cities other than capitals on test?), western (north of MT), size: ~2.6 million sq. miles
  - British Columbia (BC)...

Example with comments on the side

World Geography – Feb/15/2023

Canada, Chapter 2 (pg 42) Canadian Geography

bigger than US!!!

Hans Island/Whiskey "War" is hilarious. Topic for Canada class essay?

Need to learn "territorial waters" definition

???territory??? Ask!

ask: are cities other than capitals on test?

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  - definitions: *province* (large CAN geographic area, similar to US states), *territory*
  - total 10 provinces and 3 territories
    - Alberta (AB) (pg 48), province
      - Pop ~4 mill (2016), capital: Edmonton, western (north of MT), size: ~2.6 million sq. miles
    - British Columbia (BC)...

Note-Taking Method: Q&A

Question and answer arranged in a table

- Can easily scan the questions when studying to find the answers

Related form of study notes: flash cards.

- question on one side of the card, answer on the back.

Example of Q&A style notes

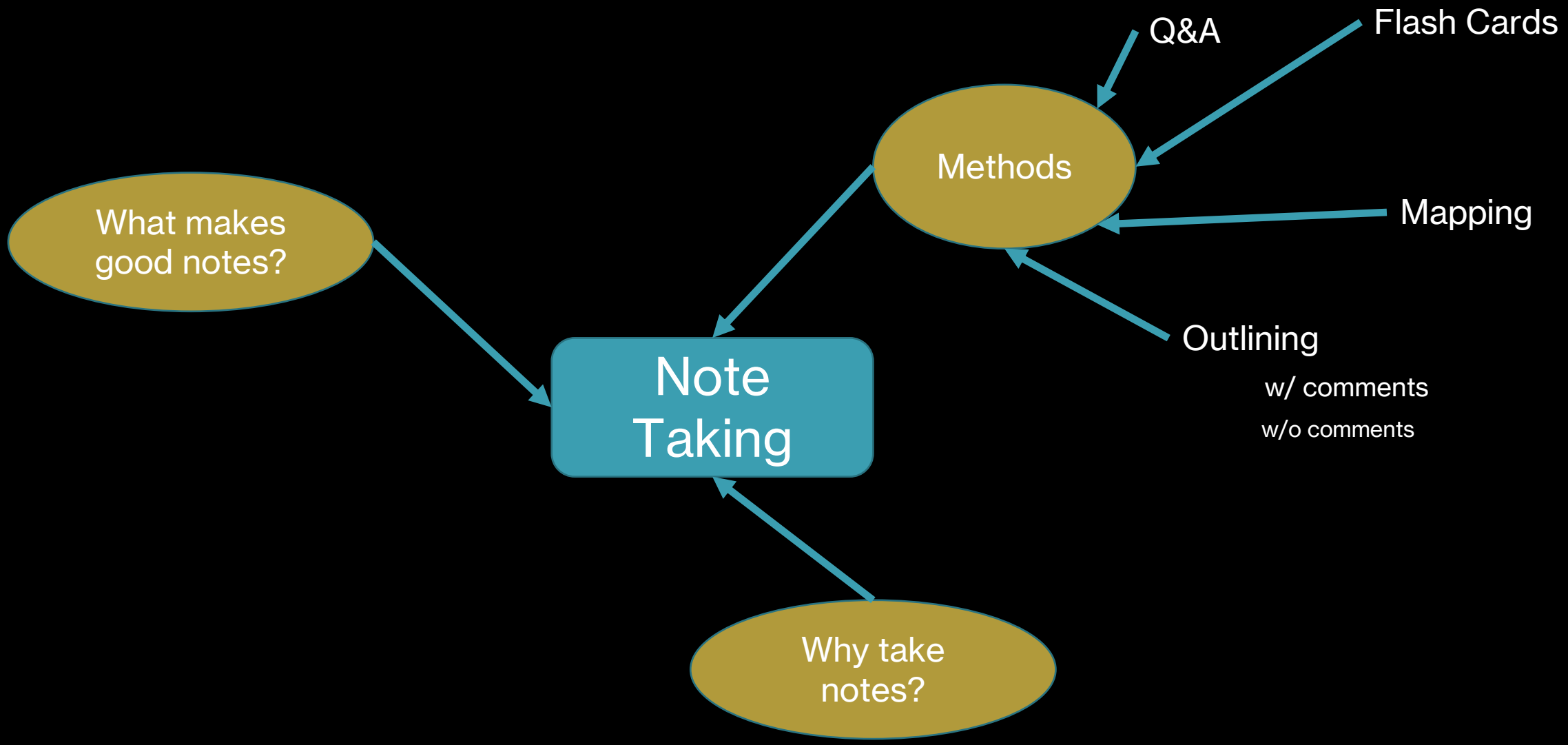
World Geography – Feb/15/2023

Canada, Chapter 2 (pg 42) Canadian Geography

Capital of Canada?	Ottawa (pg 44)
Population of Canada?	~ 35 million (2016). (pg 44)
How big is Canada?	size: ~3.85 million sq. miles (pg 44)
Where is Canada	North of US, except AK (pg 45)
Countries that Canada has a land border with?	USA, Denmark (Hans Island). (pg 45)
Countries that Canada has a sea border with?	USA, Denmark/Greenland, France (St. Pierre & Miquelon Islands) (pg 45)
What is a Canadian *province*?	large CAN geographic area, similar to US states (pg 46)
What is a Canadian Territory?	(pg 46)
How many provinces and territories does Canada have?	10 provinces and 3 territories (pg 46 & 47)
What is Alberta?	Canadian province (pg 46, pg 48-50)
Population of Alberta?	~4 mill (2016)
Capital of Alberta?	Edmonton
Location of Alberta?	Western CAN (north of MT),
Size of Alberta?	~2.6 million sq. miles

Note-Taking Method: Concept Mapping

- a drawing of how topics relate to one another



Activity: add more to this mind map!

Memorization

- Some things need to be memorized.
  - Facts
  - The way things are done
  - The order things occur in
  - Or some combination of the above
- Some you will be taught in class. Others you will need to create yourself.

Examples of memorization where order is important

- ABC song
- Astronomy: My Very Excellent Mother Just Served Us Nuggets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune - Order of planets starting closest to sun)
- Biology: Kindly Pass Cheryl Oreos, For Goodness Sake! (Kingdom, Phylum, Class, Order, Family, Genus, Species. How different organisms can be divided from the largest number of similarities to the smallest)

Examples of memorization where order is *not* important

- French: Dr & Mrs Vandertramp (passé compose verbs that use être)
- Determining if information is good to use: the CRAAP test (Currency, Relevance, Authority, Accuracy, and Purpose)
- Social Studies/History: In 1867, Victoria was Queen and Needed Seven Old Nice Boats. (Canada became a country in 1867 while Victoria was on the throne, and the first four provinces were Quebec (“Queen”), Nova Scotia (“Needed Seven”), Ontario (“Old”), and New Brunswick (“Nice Boats”).)

CRAAP test

- Currency, Relevance, Authority, Accuracy, and Purpose
- Each word will help you remember something that you need to think about when deciding to use the information

- More information: https://libguides.cmich.edu/web_research/craap

Currency	How long ago was this created?
Relevance	Is it related to what I am trying to learn? (eg: Calgary, AB vs. Calgary, Scotland) Is it created with me in mind? (eg: children, teens, adults, adults with a lot of experience on the topic?)
Authority	Can I trust the writer? How did they learn this information? (eg: which is more likely to have accurate information about income taxes? An accountant, or a race car driver?)
Accuracy	Are there any obvious mistakes? Is there obvious bias in the writing (eg: does it make personal attacks on people who disagree with it)?
Purpose	Why was this created? (eg: communicate facts, opinion, or propaganda?)

Review strategies for before and after a test

Before and After the Test

Before

- Review notes, do practice tests, look over mistaeks from previous tests and assignments
- Have you figured out how to correct “mistaeks” and misteaks?

After

- Immediately after: relax. You have done everything you can.
- When you get results back: were there things you got wrong consistently that you need to learn
- Take notes on what you did wrong, and decide if you need to change how much/what you study

Stress

- Reduce stress with social life – find “your people”
- Bad things happen in life. Don’t be afraid to reach out for help!
  - School councillors.
  - https://kidshelpphone.ca/
    - https://kidshelpphone.ca/urgent-help
      - Text CONNECT to 686868
      - Call 1-800-668-6868
  - Alberta Health Link
    - 811, or for emergencies 911
    - The Mental Health Help Line at 1-877-303-2642
    - Getting Help During a Mental Health Crisis (All ages) https://myhealth.alberta.ca/Health/pages/conditions.aspx?Hwid=acl8766
    - Teens helping friends who are talking about self-harm https://myhealth.alberta.ca/Health/pages/conditions.aspx?hwid=acl8771&lang=en-ca#acl1429

Test-taking skills

Brainstorm

Why might a person finish their test before you?

Remember:

- How fast a person finished an exam has nothing to do with how well they did!

Before, during, and after a test

Brainstorm

What should you do before a test?

Before the test

A few days or weeks before:

- Review notes, do practice tests, look over mistaeks from previous tests and assignments
  - Have you figured out how to correct “mistaeks” and mistakes? If not, where can you get help?

Day or night before:

- Check that you have a pen/pencil and a backup. If you will be using a calculator, does it need batteries?
- For higher level exams: do you know where the room is? If you are allowed a “formula sheet” or “cheat sheet,” is it ready?
- Sleep (probably at night).

During the test remember:

- READ THE EXAM INSTRUCTIONS!!!!!!!!!!
- READ THE ENTIRE TEST!!!!
  - Decide what order you should answer questions to make the best use of your time
- Write your name and (if required) student ID.
- Show your work

Remember: exams are not “traps”

- We want you to demonstrate what you know!

During the test remember:

If you are stressed

- Stop. Close your eyes. Take a deep breath.
- Start by answering what you know. Remember, you may not need to do the questions in order!

Showing work on tests and assignments

Show your work!

Reasons to show your work:

1. To understand how you got your answer (either a correct or an incorrect answer).
2. To help people understand where you are having trouble with a completing a question.
3. To get better grades by demonstrating what you know.

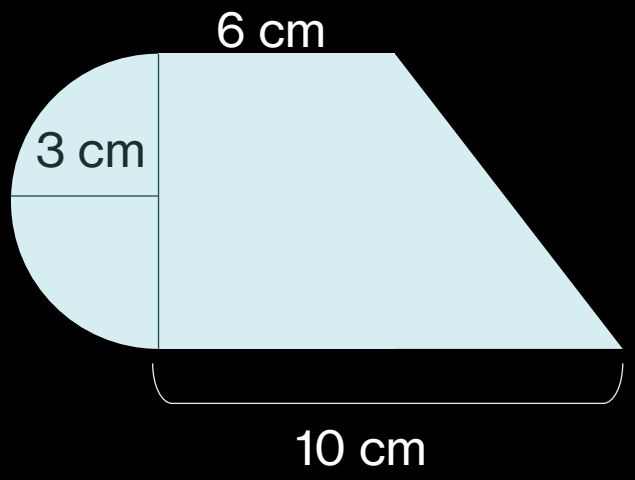
Show your work!

How do you show your work?

1. Write down what you know.
2. Write down what the question wants you to find out.
3. Write down the steps you took to get the answer.

Long answer – show your work!

What is the area of the shape?



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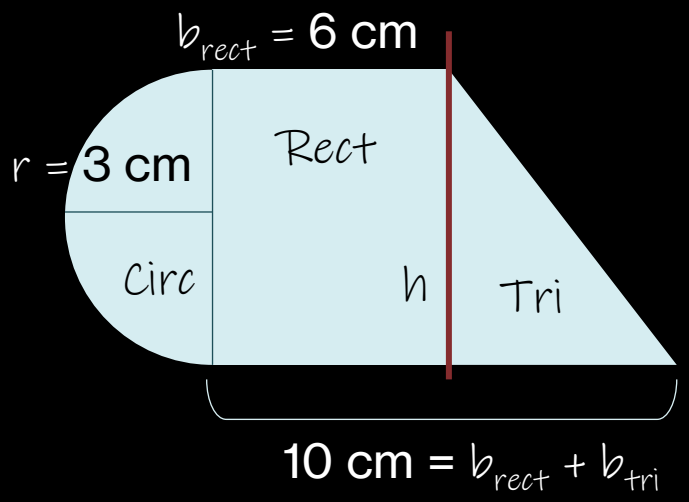


We've divided the shape into three smaller areas: a half circle (circ), a rectangle (rect), and a triangle (tri).

From the formula sheet, we know:

- The area of a circle, $A_{circ} = \pi r^2$.
- The area of a rectangle $A_{rect} = b\ h$
- The area of a triangle $A_{tri} = \frac{1}{2}\ b\ h$

The way we've divide the shape means that the 10 cm is the base of the rectangle and the triangle added together. Also, we know the base of the rectangle, $b_{rect} = 5$ cm

$10\text{ cm} = b_{rect} + b_{tri}$

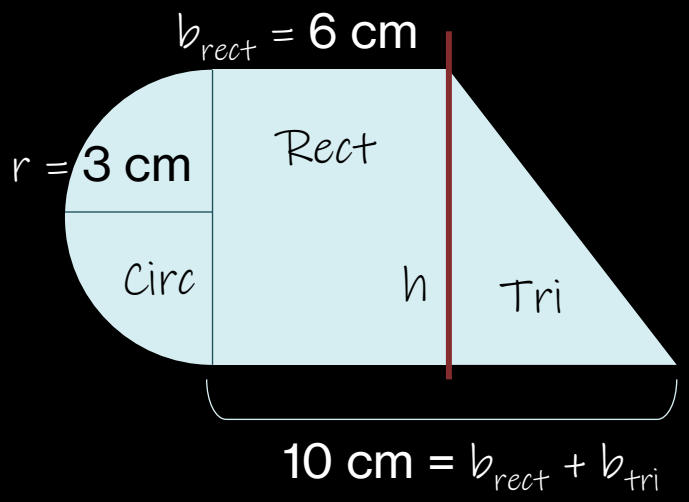
$10\text{ cm} = 4\text{ cm} + b_{tri}$

$10\text{ cm} - 4\text{ cm} = b_{tri}$

$6\text{ cm} = b_{tri}$

Long answer – show your work!

What is the area of the shape?



So, what is the area of the three shapes?

- $A_{circ} = \pi r^2$.
- $A_{rect} = b_{rect}\ h_{rect}$
- The area of a triangle $A_{tri} = ½\ b_{tri}\ h_{tri}$

The height of the triangle and the rectangle are both
$2r = 2 \times 3cm = 6\ cm$

$A_{circ} = \pi r^2 = 3.14\ (3)^2 = 3.14 \times 9\ cm^2 = 28.26\ cm^2$

$A_{rect} = b_{rect}\ h_{rect} = 6\ cm \times 6\ cm = 36\ cm^2$

$A_{tri} = ½\ b_{tri}\ h_{tri} = ½ \times 4\ cm \times 6\ cm = 12\ cm^2$

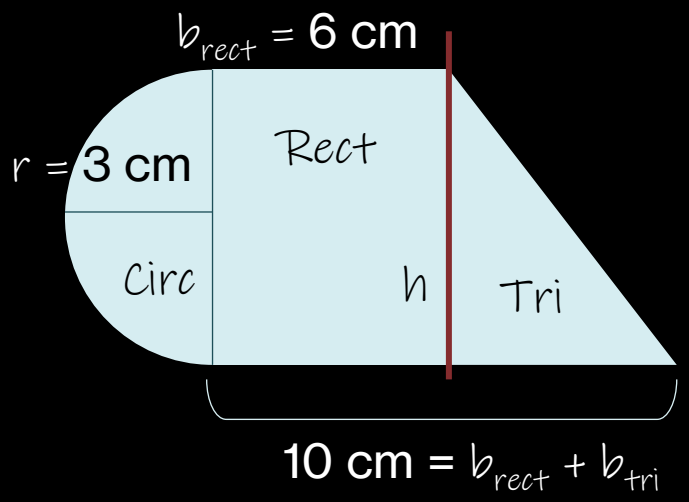
The total area is:
$A = A_{circ} + A_{rect} + A_{tri} = 28.26\ cm^2 + 36\ cm^2 + 12\ cm^2 = 72.26\ cm^2$

Why show this much detail in your work?

- The easier it is for a marker to see what you did, the more likely you are to get part marks if you got a question wrong.
- What did I do wrong in the previous example?

Long answer – show your work!

What is the area of the shape?



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- $A_{circ} = \pi r^2$.
- $A_{rect} = b_{rect}\ h_{rect}$
- The area of a triangle $A_{tri} = ½\ b_{tri}\ h_{tri}$

You have a half circle, this is for a full circle!

The height of the triangle and the rectangle are both $2r = 2 \times 3cm = 6\ cm$

$A_{circ} = \pi r^2 = 3.14\ (3)^2 = 3.14 \times 9\ cm^2 = 28.26\ cm^2$

$A_{rect} = b_{rect}\ h_{rect} = 6\ cm \times 6\ cm = 36\ cm^2$

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The total area is:

$A = A_{circ} + A_{rect} + A_{tri} = 28.26\ cm^2 + 36\ cm^2 + 12\ cm^2 = 72.26\ cm^2$

Long answer – show your work!

Example written response

You need to prepare 1.000 L of 0.1 mol/L $HCl_{(aq)}$ from a 37% w/w stock solution. How much stock solution do you need?

Additional information: the density of the stock solution is 1.2 g/mL at room temperature. The molecular weight of HCl is 36.46 g/mol.

What do we know?

We know $v_f = 1.0\ L = 1000\ mL$, $c_f = 1.0\ mol/L$, $c_i = 37\%$ w/w, density $d = 1.2\ g/mL$, $M_{HCl} = 36.46\ g/mol$

What do we need to find out?

We want to know $v_i = ???$

Solve the question

The formula $c_i v_i = c_f v_f$ cannot be used yet because the two concentrations do not use the same units. So, we need to convert the initial concentration to mol/L.

% w/w is the weight of the solute in 100 g of the solution. So, for a 37% w/w solution there are $m_{HCl} = 37$ g solute (here HCl) in 100 g of solution.

We need concentration in mol/L.

Long answer – show your work!

Show your work! Chem 20 version

$$n_{HCl} = \frac{m_{HCl}}{M_{HCl}} = \frac{37\ g}{36.46\ g/mol} = 1.0148\ mol,$$ to correct sig figs: 1.0 mol.

Rearrange *density* $d = \frac{m}{v}$

to get $v = \frac{m}{d} = \frac{100g}{1.2\ g/mL} = 83.333\ mL$ or with correct sig figs 83 mL

So,

$$c_{stock} = c_i = \frac{1.0\ mol}{(83\ mL)(^{1L}/_{1000mL})} =$$ 12.177 mol/L or 12 mol/L with correct sig figs

All concentrations are in the same units. We can use the formula.

Rearrange $c_i v_i = c_f v_f$

To get $v_i = \frac{c_f v_f}{c_i} = \frac{(1.0\ mol/L)(1000\ mL)}{(12\ mol/L)} = 82.1\ mL$ or 82 mL to correct sig. figs.

82 mL of the HCl stock solution is needed to make the desired solution.

Show your work – essay questions

- An outline is a way to show your work!

Multiple Choice –
How to show your work!

Which province was not part of Canada at Confederation in 1867?

A. Ontario

B. Quebec

C. Prince Edward Island

D. Nova Scotia

Multiple Choice – How to show your work!

Which province was <u>not</u> part of Canada at Confederation in 1867?

No A. Ontario √part of Canada

No B. Quebec √part of Canada

→ C. Prince Edward Island ?not part?

? D. Nova Scotia ?prob part of Canada?

Multiple Choice –
How to show your work!

Which American state was one of the “13 colonies?”

A. Texas

B. Saskatchewan

C. Florida

D. Delaware

Multiple Choice –
How to show your work!

Which American state was one of the “13 colonies?”

A. Texas ?too far west?

B. Saskatchewan not state

C. Florida ?????

D. Delaware ????? 13 colonies – original US states?

Multiple Choice – show your work!

Example Multiple Choice.

The following reaction occurs: $2\ Na_{(s)} + Cl_{2(g)} \rightarrow 2\ NaCl_{(s)}$

What type of bonding is occurring in the <u>product</u> of the reaction?

No	**A**	**Hydrogen bonding**	X Prod has no H to H-bond
?	**B**	**Dipole-dipole interaction**	? dipole-dipole???
No	**C**	**A covalent bond resulting from a transfer of electrons**	X No. Prod not covalent, & covalent bond is sharing of e^-
→	**D**	**An ionic bond due to the attraction between the cation and anion**	Most likely. Prod is ionic. Definition of ionic bond good.

Solaro

- practice tests available to people with a library card
  - Sheep River or Okotoks Library Member? Go to https://sheepriverlibrary.ca/eResources and scroll down to “Solaro.”
  - Calgary Public Library Member? https://calgarylibrary.ca/read-learn-and-explore/digital-library/solaro/

- The card you can get through the Oilfields High School should let you access Solaro using the Sheep River Library link.
- Want to check out books? If you are under 18 and a Diamond Valley Resident, your library card is free! For non-residents, there are family memberships.

More online resources

- www.openoffice.org or google products (free version very similar to Microsoft products)
- www.khanacademy.org
- www.mooc.org
- Quizlet.com (create flash cards)
- Scholar.google.com (usually gives answers at a higher level than high school)
- Simple Wikipedia https://simple.wikipedia.org/wiki/Main_Page
- https://commons.libretexts.org/catalog Online textbooks
  - https://k12.libretexts.org/Bookshelves selection of K-12 textbooks
- https://oercommons.org/ Online Textbooks

Final thoughts

High School Grades only matter for getting into university or college

Getting good grades does not make you a good person!

Want these slides? https://tinyurl.com/BainStudySkills2023

Thank you for coming!

Want these slides?

https://theunrestrictedlibrarian.com/blog/

If you are interested in my tutoring services, contact
https://theunrestrictedlibrarian.com/contact/

Stick around for “Setting and Meeting Class Goals.” Today, 3:00-4:30.