

Now You're Cooking With Brains

A cookbook?

Have you ever tried to follow a basic recipe before?

Was it successful? Most of you will say yes to both of these questions.

Did you go to culinary or chef school?

No? Then how were you able to do it without having much experience or training?

Recipes make complex tasks easy

Recipes are all around us:

- We use instructions (recipes!) to put together or assemble toys, models, or furniture.
- We use directions (recipes!) to help us find our way to somewhere we've never been before.
- We successfully (I hope) follow chemistry experiments (recipes!) in a way that decreases the likelihood we are accidentally blown up.
- We use walkthroughs (recipes!) to cheat on video games in order to defeat our friends.

So why have we not been applying this to learning? You know, in that one place where we are being constantly evaluated and judged, where we spend most of our day, and, unfortunately, too many of our nights!

A recipe book for your learning

Now You're Cooking With Brains is a learning cookbook that provides simple and easy to follow recipes that will allow you to better use that brain of yours during projects, to keep track of what you need to get done, to take notes, to read your texts, to study, and to take tests.

- Like any cookbook you do not need to read it front to back.
- That being said, you should read Chapter 2: What and How, as it teaches a concept we will use in almost every chapter.
- After that, go to the recipe that you need, when you need it. Eventually you'll have the entire recipe book memorized!

Why is the book so short?

Simply, are you going to read a 300-page book on being a smarter student?

Me neither.

How about 3 pages on being a better note taker? That's my kind of book!

Introducing: What & How

For any recipe to work, we need to know what we are going to make (the end result) and what we have to work with (the ingredients). This also relates to getting school work done successfully, on time, and without having to work all that hard.

The first step of all of our recipes in this school cookbook will be the **WHAT & HOW** step. Trust me when I say that it is the most important step in completing all your projects, essays, presentations, and during tests or exams.

Oh, and by the way, when I first started writing this book, I had only met one student (yes - just one!) who naturally completed the WHAT & HOW step. Let's think about that. This means that nearly everyone you know is already messing up at step one. Not off to a great start!

Example Project

Should stores be able to sell violent video games to children or adolescents? What does the research say about the impact of these sorts of games on these populations?

- Spend a moment thinking about how you would get started with this question.
- Write down what your very first step would be.
- What would you do next?
- What direction are you going to go in for this essay?

Don't worry we won't make you do the actual essay.

Analyzing your approach

- Was your first step thinking about what kind of research you are going to do?
- Have you already formed an opinion (video games forever!) and are you going to go seek out evidence for it?
- Did you skip the steps above and go right to finding the research prior to thinking about what you wanted to collect?

Most people start their work at this point. Unfortunately, these activities are from step 3 and 4 (we'll explore all the project steps later), which you are also probably combining at this point into a single mega-step.

You're smart ... Let us start acting that way

In order to work smarter, you have to first understand what you are being asked to do. This is a step most students and professionals (even your parents) fail to complete.

In fact, it's a trap a lot of smart people fall into.

- Smart people get lots of big ideas when they see a topic they know something about.
- Smart people get stuck in that chain of thoughts or ideas and start missing the small details.
- Sometimes smart people answer the wrong question altogether!

How do we avoid this? Surprisingly, it is not that hard. We just need a good procedure that allows us to not only be smart, but to work smart: **WHAT & HOW**.

WHAT?

In simple terms, the WHAT question is exactly what it sounds like it would mean:

- **WHAT** am I being asked to do here?

If you are anything like I was in school, then you see the main topic and your mind races to everything you know or had studied about that topic. That path of thinking sometimes made me blind to exactly what the questions were asking and, more than once, I answered the wrong question altogether. Oops.

To focus our work and make sure we answer the right question we need to understand what is being asked. Let's revisit the project question from earlier.

Example Project

Should stores be able to sell violent video games to children or adolescents? What does the research say about the impact of these sorts of games on these populations?

How many questions do we have here?

It seems like the obvious answer, but there is a trick here.

Why does the question say “children or adolescents”?

That’s because these are two different groups. Have you noticed that there are different “age ranges” on video game ratings? There’s a reason for this.

So, in this case we are actually being asked (the WHAT) four different things:

1. Should stores be able to sell violent video games to children?
2. Should stores be able to sell violent video games to adolescents?
3. What does the research say about the impact of these sorts of games on children?
4. What does the research say about the impact of these sorts of games on adolescents?

This can also be visualized to make planning easier:

Violent Video Games	Children	Adolescents
Sales? Yes or No		
Research on impact		

What if you read the question and you are still not sure what you are being asked to respond to?

ASK! The teacher will see this as being proactive, not as being a sign that you are not bright.

SUMMARY: What?

- What is the question/assignment asking me to do?
- Are there multiple questions?
- Does each question have multiple parts?
- Are there any words that I’ve ignored when I rephrased the question? Do they seem important?

HOW?

By this point, you probably have a good idea of WHAT you are being asked to do. There is still one more question we need to ask:

HOW should you present this information?

From our WHAT procedure we have some details regarding what areas we should be covering. However, think about everything else we may need to know prior to planning on how to get started:

1. What format should this be provided in? (e.g., Formal essay? Are charts OK?)
2. Is this a fact-based project or an opinion piece?
3. Which question should I answer first?
4. Should I provide references? If so, what format should I use for this? How many references should I am for?
5. How long should the project be?
6. Does that length include references?
7. When is it due?
8. ~~Who am I? What am I doing here?~~

We already have some of this information. Our WHAT procedure showed us that we have four questions, of which two are opinion based (e.g., Should stores be able to sell to children? Should stores be able to sell to adolescents?) and two are fact based (e.g., What does the research say for children? What does the research say for adolescents?).

So that is #2 down. We can use logic to figure out #3:

- Opinions should be based on facts. Therefore, the facts go first and then the opinion.
- It makes sense to talk about children first then adolescents.

Research needs to be supported by data, so we will need to provide references (question #4), but we will need to know what format to use for the references if the teacher does not tell us.

Let's presume the teacher told us it has to be four pages, double spaced, not including the references and that it is due in two weeks. We now know #5, #6, and #7.

If we predict that we will need a half page for the introduction and half page for the conclusion, this means we have 3 pages left over to cover our four questions.

This means we need to do enough research and take enough notes to fill $\frac{3}{4}$ of a page on each of our four questions.

That's a lot more information than we had before. We now know where to start and can better predict how long things are going to take.

SUMMARY: How?

HOW am I supposed to respond to the assignment, project, or test question?

- Which question do I answer first?
- How should I format things?
- How much information do I need to fit the length requirements?

A final thought ...

Your teacher is the one doing the marking right? Maybe it's a good idea to know how they are going to mark it (e.g., the rubric).

The WHAT & HOW procedure will help you stay one step ahead of the rest of your classmates. You will spend less time doing work, because you will be spending your time on what exactly is needed to get things done. You will focus your efforts on tasks that boost your marks, not busy work that leaves you feeling overwhelmed and behind.

The Note-Taking Recipe

WHAT is the reason we take notes in class?

Most of my students look a bit confused when I ask this question. While all of them eventually come up with an answer when asked, most of them will also admit that they take notes because they are “supposed to”.

What are the most common answers received to this WHAT question?

- “It is a shorter version of what is in the textbook.”
- “It helps you learn.”
- “It helps me know what is most important in a lesson.”

These are all good answers, but none are perfect. The last answer is close. Look at the conversation below to reveal the real reason most of us take notes.

Student: “It helps me know what is most important in a lesson.”

Me: “Important for what?”

Student: “Important to know.”

Me: “Important to know when?”

Student: “On tests.”

Now we are really close to the answer.

Me: “Do you review your previous lesson notes every day?”

Student: “No.”

Me: “When do you look at your notes again?”

Student: “When I study”

Again, WHAT is the reason we take notes in class?

We take notes so we can study from them when we have a test.

Great! Now we know why we are taking notes.

Are we taking notes in a way that helps us study from them later?

HOW can we take notes that help us study better?

To create better notes, we need to think about what makes notes “bad” in the first place.

- Bad notes are disorganized so we can't find important information fast.
- Bad notes seem cluttered and overwhelm you unless they are rewritten prior to studying.

Student: “Can't I just highlight my notes or rewrite them?”
 Me: “You could, but that is a lot of extra work and time.”
 “You could be spending that time studying, working on other things you need to get done, or playing video games.”
 Student: “But I learn the material when I review and rewrite my notes.”
 Me: “True, but you will learn the material much faster and better if you focus on just reviewing the material during studying and skip the rewriting busy-work.”

A little neuroscience before we get to the recipe?

Student: “Will there be a test on this?”
 Me: “No, this will just help explain why this note-taking system and some of our studying activities work so well.”

Our brain loves relying on categories. It's how we learn new concepts, it's how we interpret the world, and it's how we store and later retrieve our memories. We refer to the part of the brain that facilitates a lot of this as “categorical reasoning”. You can think of it as how we label file folders based on the content that is inside.

An example: In your brain, you do not simply categorize, learn, or remember a “maple tree” as being just that.

We categorize it first under “types of trees”. This is so we can quickly search our brain through just the “tree drawer” in our mental filing cabinet rather than search our entire brain when we have to identify or respond to something about maple trees. Once you learn more about trees, you may even sub-categorize it as “deciduous trees” (the ones that lose their leaves).

Now when we search our memory banks, we go to the “tree drawer” then skip to the file for “deciduous trees” and then grab the note on maples.

The Note-Taking Recipe

[STEP 1] Draw some lines like the dotted ones down below (you can make them solid lines - we have dotted them here just so you know what you need to draw). That's two horizontal lines across the top and one vertical one after those.

UNIT: **[STEP 2]** Write the unit title

DATE: **[STEP 3]** Write the date

[STEP 6] Write a very brief summary of the day's notes, just a few point form notes highlighting what topics were covered today. No real details are needed.

You only need this on the first page of the day's notes. If you create more than one page of notes that day you only need to draw this box once.

[STEP 5] Write down keywords (example: definition titles; subject areas; theory names) for each major topic in the notes you took in step 4.

This will make information faster and easier to find without having to read all your notes over again.

If the teacher said something is "important", make an easy to find note over in this box.

You can create these keywords while you are taking your notes (that will become easier once you have some practice), but must happen before you go to sleep after you took the note. More on that later!

[STEP 4] Write your notes as you normally would (just keep them in this box).

The nice thing about our note-taking recipe is you do not have to do anything differently from what you have done in the past. We are just going to add a couple of very short steps that make your notes ready for studying and learning.

- As you are writing, think about what the main topics are.
- Is the section you are writing here called something?
- What would your teacher call this on a test?
- Is there something your teacher said was very important and would definitely be on a test or exam?

You may be writing a lot of these things down already, but are you doing it in a way that is easy to find later, when you forgot exactly what was said, or you forgot when you actually heard it?

Have you ever noticed how text books are set up? They have a bunch of big bold titles, little boxes of key information, and essential definitions separated from the actual paragraphs or "notes" in a book. Often these are on the left-hand side of a page so they are easy to find.

Time for Step 5.

So how does this help us again?

This note-taking approach takes advantage of all we know about brains and how they learn best (categories!), how they remember information quickly (categories!), and what they are not very good at (going through a bunch of information that is not in categories!). Confused?

You have now just labelled the file folders in your brain

If we were taking a geography or biology course that was covering “types of trees”, our notes would have likely categorized or grouped all the information we had just learned in our brain under a giant file folder called “trees”.

This is not very efficient (or specific) and would mean we have to re-learn things when we study in order to figure out how to break it into smaller folders.

That is a waste of time when we could have filed it correctly the first time.

- Taking the moment to add the keywords makes sure you file things correctly the first time.
- It also means we understand some of the key sub-categories that make up a bigger topic.

Keeping the above ideas in mind, it is very important that you do the category or “keyword” step before you go to sleep after taking the note. This is because our brain does a lot of filing with our “file folders” when we go to sleep.

If you have not done the keyword step before you go to sleep it may be misfiled and you will need to un-learn that system in order to learn the new one. I don't know about you, but I don't like learning things twice.

You can now search your notes faster ... WAY faster

One of the best things about your notes is that they are now super organized and it only took you a minute or two to set them up that way.

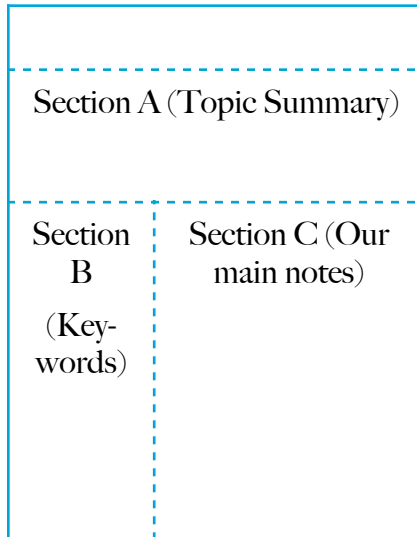
Trying to find something in your old notes could have meant looking through pages and pages of a unit trying to find some specific topic or definition. Now you just look at each day's “Step 6” (the summary section) to see if it was covered on that day.

If not, skip to the next day's notes. If you spot the topic on this day's list, go to the “keyword” column (step 5) and track down the specific category/topic/definition you need. Then read the content related to it in the main note box.

You will not believe how much time you just saved.

Your class notes are already study notes!

I'm about to blow your mind. If not, at least pretend I did!



Have an essay test?

1. Cover Sections B and C.
2. Quiz yourself - what are the categories that make up this topic?
3. Reveal Section B to see if you remembered correctly (study this more if not).
4. Quiz yourself - what is the definition/theory/steps of the keyword in Section B?

Short answer test?

5. Cover Section C .
6. Quiz yourself - what is the definition/theory/steps of the keyword in Section B?

Multiple choice test?

7. Cover Section B.
8. Review Section C and ask yourself “what is this called” or “what definition is this”?

Note: Step 8 works best if you made your keywords during your note taking and did NOT include the keywords in the note itself. Otherwise, it reveals the answer to you.

Summary

You will not believe how much better your notes are now.

Right from the start, you've built notes that are organized in a way that helps you learn, makes your notes as easy to search as a good text book, and they are already prepared for studying. Now you can spend more time playing video games or on (enter current popular social network here) or getting your homework done.

Want to master this note-taking thing? See some additional hints below!

Tips, hints, and some extra tricks!

My students have come up with all sorts of “tweaks” over the years. Here are some you might like:

For math courses, try this approach to adding keywords:

1. Keyword or title for the subject/definition covered (e.g., perimeter definition)
2. Another keyword when the formula is listed (e.g., perimeter formula)
3. A final keyword for when you provided an example (e.g., perimeter example)

For classes with lots of rough work and practice questions, think about putting these in a different part of your notebook or binder. This will keep your important “study notes” clean and together without all the clutter.

What about using this system with computers or tablets?

1. Break your page up using tables in a manner similar to what I did for your examples right in this chapter. Save this document as a template you can use in the future.
2. With a tablet and stylus you can either create a table or you can simply draw in the lines.
3. Consider using Evernote (evernote.com). You can make tables and Evernote will make all your notes searchable (You can even search handouts or hand written notes that you scan in or take a picture of).

Teacher uses PowerPoints? It's tempting to write on them, but this ends up cluttered

1. Print out the slides, number the pages if they are not already.
2. Take notes like we have already explained, just link these to the numbered slides.

The Reading Recipes

Scientists don't read textbooks!

Do you wish you had the brain power of a super famous scientist?

~~Then never read another text book again!!!~~

Sorry ... I know you were hoping that was where I was going with this.

While I can't make it so your textbooks and other readings go away, I can teach you how to get through your assigned reading work in the same way a super famous scientist would.

Let's take a moment and go back to our WHAT & HOW.

WHAT is the purpose of reading what has been assigned to you?

- Fun and excitement?
- Torture and to have something to laugh about in the teachers lounge?
- Because the teacher is hoping that I will learn something that is covered in the reading.

Yah ... that one seems a bit more likely.

HOW should you read assigned work when you need to learn something from it?

I bet you have not spent much time thinking about this.

Sound familiar? We had the same problem with interpreting questions (Chapter 2) and taking notes (Chapter 3).

- Me: "Well, how would you read chapter 13 of a textbook if I assigned it to you right now?"
- Student: - blank stare -
- Me: "It's not a trick question really."
- Student: "I would open the book to chapter 13 and I would start reading it."
- Me: "The same way you would read any book right?"
- Student: "Right."
- Me: "Wrong."

Wait, what?

Readings can be completed in a faster and better way if you use a step-by-step approach like our “recipe” model. We just need to spend a bit more time thinking about our WHAT & HOW.

We know that we are being asked to learn the material. How can we do this smarter?

- We need to avoid a “start at the beginning” all-or-nothing strategy.
- We need to avoid feeling overwhelmed with information half way through the readings and before we get to the important stuff.
- We need to learn based on “smarts” and not pure memorization.

Time for a little neuro-science again.

A little neuro-science before we get to the recipe?

The average adult can remember 5 to 9 distinct pieces of information (we call these chunks) before they start forgetting things that are not “linked” to some sort of bigger concept.

Basically, we are saying that we are pretty good at understanding the “big picture”, but the “small details” are hard to keep track of.

How many “small details” do you think there are in a textbook chapter? Oh oh.

Most brains were not built for textbooks.

Student: “No wonder I can’t remember anything I read!”

Don’t worry. Scientists used this information to create a different approach to writing that looks a bit backwards to people who do not read science journals (yet). Instead of writing a textbook, which takes forever to write, they create a short(er) and focused article that is backwards when compared to a textbook chapter.

Student: “I don’t think I can read something backwards.”

Me: “Not that kind of backwards. Geesh.”

In this case it is backwards because in science journals they always put the summary first.

Student: “Why would they do that?”

Because the summary has 5 to 9 distinct pieces of information (“chunks!”) that focus on the main concepts that need to be remembered. This makes sure the reader can memorize the important stuff first.

These 5 to 9 distinct pieces of information become our “big picture”. It helps us to understand the other stuff we are reading and essentially creates a file folder in our brain for each of these concepts. We can then file away the “small details” into the right “big picture” folder.

The little stuff will now be easier to understand and easier to remember.

Types of readings you do in High School and College-University

1. **Fact-Based Textbooks.** A fact-based textbook has big chapters that give you a lot of information to learn and memorize, without much paper-and-pencil work like math calculations. We see these books in the social sciences (example: psychology; anthropology; politics), business, philosophy, geography (usually), and sciences that are not heavily math based (example: biology; usually not chemistry or physics). They are also sometimes used in the Language Arts.
2. **Narrative-Based Fiction or Texts.** These are what you usually read in English class, some philosophy classes, and once in a while in social science courses. They include novels, plays, and long drawn out essays written by people who died a very long time ago and who don't seem to speak the same form of English that we normally use to read, text, or tweet.
3. **Math and Hard Science Texts.** Almost every math course, some chemistry classes/units, and most physics books. These texts are written in a highly structured way, with each page teaching you the next step you need to solve the final problem.
4. **Journal Articles.** Those things the scientists are writing. Most journals (including the non-sciences) will use the same format. Summary first.

Recipes, recipes, and even more recipes.

The right way to read the material you have been assigned will change depending on what kind of reading it is. Just to make things easier, figure out what kind of reading it is (based on the above) and then flip to the recipe that covers the approach you need to take.

They start on the next page ...

Fact-Based Textbooks

Fact-based textbooks usually have a summary or key topic list at the end of the chapter. In some textbooks, there actually may be a few summaries in each chapter.

The recipe below will allow you to get through these chapters faster and in a way that focuses your learning on the “big picture” first and then then “small details”.

Fact-Based Textbook Recipe

1. **SCAN.** Look through the chapter or assigned reading to figure out how it is designed (for most textbooks you will only need to do this step once).

ADAPT. If there is a single summary at the end of the chapter you will repeat steps 2 to 4 once. If there are several different sections in the chapter, each with its own summary, repeat steps 2 to 4 for each summary or key points section.

2. **REVIEW.** Read the summary. What key points has the author tried to teach to you?
3. **SEEK.** Now that you know what the key points and topics are, go search in the chapter for more information to boost what you know. We are now entering the “small details” into our “big picture” folder.
4. **QUIZ.** Now return to the end of the section/chapter. Are there review questions? If so, go through the questions and see if you can answer them.

If you can answer them correctly, you have likely read enough.

If you are confused, you need to review the content of the chapter a little more.

Fact-Based Textbook Hints

- You might not need to read the whole chapter. There are a lot of things put in there to just make the writing flow a bit more. The approach above will allow you to test yourself to see if you learned what you were supposed to.
- If the book does not have review questions you may want to see if there are any in the study guide (if one is available).
- Definitely buy the study guide if one is available. If you do, an even better approach is to read the “summary”, then the study guide, then expand your knowledge in the chapter itself.
- Pay attention to bolded headers and words, definitions, and boxes in the margins. They put them there for a reason!

Narrative based fiction or texts

The problem with narrative based fiction or texts is that they rarely have summaries that we can use to focus our reading. This is on purpose, stories are written to take you on a journey.

Student: “OK, that is fine when you choose to go on a journey for pleasure, but seriously, I did not choose this book.”

Fortunately, we can often still do a summary first approach to reading this stuff. We just need to find the summary!

Where (try these ones in order)?

- Your first stop should be sparknotes.com, bookrags.com, or cliffnotes.com
- If that doesn't work, you could try the pay site yorknotes.com
- Cliff Notes and Coles Notes summary guides are also available in many bookstores
- Many books and philosophical texts also have brief summaries available on wikipedia.org
- As a last resort you could simply try googling “chapter summary” and the name of the book.

Narrative Based Fiction or Texts Recipe

1. REVIEW. Read the chapter or scene/act summary first. This will allow you to know what will be important to pay attention to when you are reading the actual chapter. It does ruin the story, but are you really reading this for fun?
2. READ. Trust me. It's tempting to stop here, but you need to read the chapter/scene/act. Your teacher also reads sparknotes. They will know if you only read that. Who knows, maybe you will actually enjoy the reading now that you actually understand what is going on.
3. EXPAND. When you are done reading a chapter you may want to review the character summary for any characters that were introduced or who died (this happens a lot in Shakespeare). This will let you know if you need to pay much attention to the character in the future or, if they died, whether they were important to the overall book.
4. FOLLOW-UP. Take just a minute to review the last chapter summary before you move on to the next reading. This will solidify the key details and will allow you to be more prepared for the next chapter.

Narrative Based Fiction or Texts Hints

- This book is brutal, can I just watch the movie? Tempting, but they usually skip a lot of small details. Watching the movie first can help. A better option if you do not want to read it the old fashion way is audiobooks. Check out librivox.org gutenber.org (both free), your local library website, or audible.com (not free).

Math and Hard Science Texts

OK, some bad news:

Math and hard science (e.g., chemistry/physics) textbooks are often formatted quite differently and do not necessarily have a lot of short-cut options. The trick is to still do a self-evaluation procedure to figure out how each section is formatted.

The good news is that this just means we need a different type of recipe...

Math and Hard Science Texts Recipe

1. **SCAN & PLAN.** There may be several unrelated or complex topics that are discussed and explored independently in the same chapter or reading.

It is a good idea to approach each of these sections at a different time (even if you only take a 5 minute break).

This will allow your brain to focus on the material as a new topic and will decrease the likelihood you mix these things up in your head.

It is kind of like breaking a big chapter into a bunch of smaller chapters.

2. **REVIEW.** Complete all assigned review questions. This proves whether you have acquired the information correctly.

If you go to sleep having learned it wrong you will register incorrect memories. Then you will need to erase those memories first before you can start trying to relearn it.

If no review questions were assigned, consider completing any that are available in the textbook or study guide just to prove to yourself that you have figured it out correctly.

3. **LEARN LOGICALLY.** When completing math-type review questions ask yourself:

WHAT is the question asking me to do here?

HOW do I know when a question is asking me to answer it this way?

Math and Hard Science Texts Hints

- Math and hard sciences are all-or-nothing subjects. You either get it perfect or you get it wrong. Act smart and in a way that promotes a little bit more perfect and a bit less wrong.
- Consider splitting similar review questions in two, one set for when you are trying to master the concept and one set for when you are preparing for the tests.
- The study guide for math and hard science texts will often have many additional practice questions for you to try out for tests and exams.

Journal Articles

Journal articles were set up to allow experts to quickly determine what is important to know and where you can go to find more information in the article itself. Almost all the work is done for you and an easy to follow recipe will allow you to see the important details through a lot of noisy data.

Journal Article Recipe

1. **REVIEW.** Journal articles generally start with a summary that you should read first. It is typically called an “abstract”. Keep in mind that most abstracts are written with one or two sentences each for the introduction (background), what was being examined (hypothesis/thesis), how it was examined (method), the results (results!), and what does it all mean (discussion).
2. **SEEK** - Seek out the extra details you need.

Based on the abstract, do you already know the background of the material, understand how it was assessed, but find the results a bit of a surprise? If so, go to that section first.

Are you unsure whether the areas of interest were measured in a way that relates to your work? Then jump to the methods section and ...

3. **EXPAND** - Based on the abstract **REVIEW** we have **SEEKed** to the area we need to know more about. Now we will **EXPAND** our knowledge with a more in-depth review of that section.
4. **RETURN** - Now that we know more, review the abstract again. Do all the parts still make sense to me? Do I need to **EXPAND** somewhere further?

Journal Article Hints

- Not all articles are written equally. Some are just plain hard to read and understand. If you are confused you may want to look for another resource.
- Often people find some of the “narrow” research articles a bit confusing. This is because the authors (and most readers) may be experts and they already know the big picture. If that is the case, try to start with a review article or a meta-analysis (an article that takes a bunch of research and combines it into a bigger project). These often provide a good overview of what the field is currently researching.
- Do not just read the abstract. Use this as your guide. It has given you the big picture, now go expand your mind!

The Project Recipe

Organization issues? Procrastinating? Join the club ...

Every one of us experiences these problems from time-to-time; some more than others of course. Remember the days when your entire project could be assigned one day, completed that night, and handed in the next. Unfortunately, Grade 4 is over.

While we can all become project experts, very few of us have been taught properly how to manage these tasks and to get work done that is high quality and completed without stress.

Successful students approach school work in **small steps**. This allows them to get focused, make a plan, get started on time and get things done faster and better.

The easiest way to meet all the goals above is to get everything out of your head and onto paper. This leaves more space in your brain for being smart. A good way to do this is by applying our “recipe” approach to projects and assignments. This time you are going to build the recipe. Well sort of, I’m going to help a little bit.

One Recipe - Two Parts

- A.** Part A is easy, takes only a few moments and should be done right after things have been assigned. It will help you understand **WHAT** it is you need to do and **HOW** you need to do it. And good news, we already know how to do these steps!
- B.** Part B is a series of small steps that will get your actual work done. We are going to make each step so easy to complete that we will never be left feeling overwhelmed.

What happens when you are overwhelmed?

- Most people get stressed or anxious when they get overwhelmed. This leaves them less able to stay focused and can prevent them from getting their work done.
- Many of us miss important information or steps. This is like a glass of water that is already full, if you put in more water it will overflow and make a mess.
- Some of us procrastinate in order to avoid feeling overwhelmed. While we don’t have to worry about it now, we are only going to make it worse later.
- No matter who you are or how you handle being overwhelmed, it will slow you down and will make your work worse.

PART A - WHAT & HOW

You would be amazed how often students I have taught have answered the wrong question.

Why do you think this happens?

It is usually because the student has focused on one part of the question, quickly decided what they needed to do, and then raced towards getting their work done.

Unfortunately, questions can be tricky (sometimes on purpose) if you rush through them.

Ask yourself the following question to avoid responding to or researching the wrong topic:

Do I have all the information I need to know to get started?

An even easier way to ask and answer this question is through a procedure we already know:

1. WHAT?

What is the question asking about?

What is the topic? What am I being asked to answer?

Is there more than one question here?

2. HOW?

How am I being asked to present this information?

What is the format, length, or style (example: opinion or fact based)?

When is it due?

What happens when you don't do Part A: What & How?

John was asked to answer the following question:

“How have public awareness campaigns about the risk of sun tanning and the proper use of sun screen changed the rate of of skin diseases in North America?”

- John provided a great answer about an important study from the United States. It was well written and well researched.
- Unfortunately, John seemed to have forgotten that North America also includes Canada and Mexico. Well, actually, John simply forgot to ask himself WHAT the question was asking.

PART B - Getting it Done

Now that we know WHAT we are being asked to do and HOW we are supposed to do it, let's think about the steps required to get the actual work done and how our first two steps may guide us as we work on a project.

You are probably completing many of these steps already. However, you are also likely combining too many steps into one super-step. Super-steps will always leave you overwhelmed, will slow your progress, and could harm the quality of your work.

Our Project Recipe continues with several easy to follow steps, each with their own deadline (more on that part soon):

3. How will I do my research or find resources?
4. When will I review my research (during research time or after)?
5. Take notes on the research that was reviewed.
6. Make an outline/plan.
7. Complete the writing step without editing. Allow your ideas to flow!
8. Edit your work as a separate step.
9. Complete a final review before handing in your work.

Why are there so many steps?

Doing too many things at once slow things down, will make you tired, and will increase the number of mistakes you make.

What if you were working on a big project that required you to sit down for an hour or more of research, where you were finding your resources, reading them, and taking notes?

If the most important resource you found was the first thing you came across, you could read this thoroughly and make great notes.

What if this resource was the last resource you came across? You would probably be pretty tired by this point. Chances are high that you would mess it up because you would already be too tired from doing three steps (3 to 5) at the same time.

Having small steps makes it easier to get things done. Say to yourself, all I have to do is 15 minutes of work? Sure, I can get that done tonight.

THE PROJECT RECIPE WORKSHEET

(See Chapter X for copies of all worksheets)

INGREDIENTS

1. WHAT?

(What is the topic? What am I being asked to answer? Are there multiple questions here?)

2. HOW?

(How am I to present this information? What is the format-length-style? What is the due date?)

RECIPE

3. How will I do my research or find resources?

Due Date: _____

4. How will I review resources? Should notes be a new step?

Due Date: _____

5. Take your notes.

Due Date: _____

6. Make an outline.

Due Date: _____

7. Complete the writing step without editing.

Due Date: _____

8. Edit your work as a separate step.

Due Date: _____

9. Complete a final review before handing in your work.

Due Date: _____

Final Thoughts

- Student: “Why do we have due dates for each step?”
- Me: “They help us know when we are ahead of the schedule or behind.”
- Me: “Due dates make sure that we keep ourselves on track and help avoid procrastination.”
- Student: “I do that a lot.”
- Me: “We all do, because we generally underestimate how much work we need to do. We also try to do too many steps at once, which means we end up wasting time multi-tasking, which none of us are good at.”

How you select your deadlines is easy. I generally do Steps 1 - 2 right away when the material has been assigned. I then like to collect my data and do the review steps as soon as possible, as this will give me a good idea of how much work is ahead of me. Let's imagine we had something due in 14 days.

1. WHAT? (Due Date: Day 1)
2. HOW? (Due Date: Day 1)
3. Collecting research (Due Date: Day 2)
4. Reviewing research (Due Date: Day 3)
5. Taking notes (Due Date: Day 4)
6. Make an outline (Due Date: Day 5)

I then go backwards from the due date:

9. Final review (Due Date: Day 13)
8. Edit work (Due Date: Day 12)
7. Write a full draft without editing (Due Date: Day 11).

Basically I now know that I have Days 6 to 11 to get the report written. If it is a 4-page report, I only have to do 4 pages in 6 days. Not bad at all!

Keeping Track: From To-Do's to To-Done's

Objectives ... failed

Most of us have tried a number of different ways to keep track of things we need to do. A lot of these were met with mixed success and eventually abandoned.

Even our current strategies are probably not working as well as we would like or have significantly failed us in the past.

Which of these strategies have you tried before?

- A standard agenda book where we enter in future due dates, exams, or homework lists of what needs to get done
- A paper or computer calendar, used in a similar fashion as an agenda
- A paper or electronic to-do list or reminders application
- Random and loose pieces of paper or a note-pad
- Jotting down things in our notes as they come up in classes
- Err ... nothing? I had something I was supposed to do?

Even the first three options, all of which appear far more organized than the last three, have some significant flaws that I will discuss further below. For those who follow the last three models, one piece of advice ... stop it!

Unlike the previous recipes that apply quite specifically to certain topic areas, the task tracking and management model you will ultimately use will depend on preference and, for some, will require you to simply try it out for yourself (what you think may be best for you may not be).

You will see some common themes below, several of which relate to work we've already explored to this point in the book.

The Problems with Agendas and Calendars

There can be an endless number of problems with both an agenda book and a weekly/biweekly/monthly calendar approach, many of them unique to the individual using the system:

- Forgetting to write something down in the first place
- Not entering enough information
- Putting the information you need in the wrong spot
- Including some of the information you need in one spot (agenda) and the rest in another (notes)

There are also problems that are common to almost everyone using these systems:

- We forget to check to see if we need something to get done tonight
- We fail to travel far enough into the future to see what is coming up
- We forget to do something, move on to the next day, and never travel into the past to see what we failed to get done
- We set up a “to-do” item that is so big we get overwhelmed and procrastinate

Missing that something needed to get done ...

Unless you are using an electronic agenda or calendar and have set it up correctly, you are probably missing a little thing that needed to get done here and a little thing that needed to get done there. Sometimes they are big things and sometimes they are steps that were required to prepare us for another task ahead of us.

When we make mistakes like those above, we (or others) may perceive us as forgetful. In some cases, those close to you may think that you do not care or that they are unimportant to you.

“Mrs.” Me: “Can you remember to get milk on your way home today?”

Me: “No problem, as I am a reliable husband who you can trust with such important tasks!”

- A work day passes -

“Mrs.” Me: “Welcome home dear. Where’s the milk?”

Me: “Ooops!”

So, am I forgetful? Do I not care? Let’s look at what really happened:

Me: “No problem. I’m a reliable husband who you can trust with such important tasks!” (Mental Note: When you drive by Grocery Store A on the way home remember to get milk because you are a reliable husband who can be trusted with such important tasks).

- A work day passes -

On the way home from work, I drive down the street that Grocery Store A is on. Just as I am approaching it, I see a really nice car on the other side of the street. I stare at it, it is so pretty. I decide that I’m going to try to remember to put some money aside each month to get myself one just like it! I forget the milk. I then forget to put money aside for the car.

So ... what just happened there?

Prospective Memory (and why we're all bad at it ...)

Prospective memory refers to the ability to remember to perform a specific action (get milk) at an appropriate time (on the way home). When people come into my psychology clinic and complain that they have bad memories, it is almost always prospective memory that they are referring to.

What is a bit confusing is that prospective memory is not really memory. We cannot remember the future. However, we can be alerted in the future in a way that triggers a memory from the past. In a way, prospective memory is a combination of past memories and attention.

In the case above I had designed an attention “trigger” that required me to be focusing on one side of the street (the grocery store) in order to activate a previous memory. Unfortunately, I (and pretty much everyone else) did a really bad job of creating a good “trigger”.

More often than not, we create triggers that are supposed to tell us to remember something, but instead only remind us that we forgot something (In the example above I would usually remember I needed milk. Unfortunately, I generally remember it when I walk through the door, see Mrs. Me, and know I am in trouble!).

Bad Prospective Memory “triggers”

Bad triggers are:

- Passive Triggers. Passive triggers require that I complete some kind of action or notice something in order for the “trigger” to fire.
- Failure Triggers. Failure triggers are not memory triggers at all, but remind me that I've screwed something up.
- Premature Triggers. Premature triggers remind me too early that I need to do something.

Good Prospective Memory “triggers”

Good triggers are:

- Active Triggers. Active triggers (example: an alarm) distract me and break my attention from whatever it is currently focused on (the car I like) and force it onto the memory trigger.
- Infrequent Triggers. Infrequent triggers do not exhaust my attention. If a “trigger” goes off too often, I may start ignoring it all together (example: a repeating alarm ever minute).
- Timely Triggers. A timely trigger allows me to immediately respond to the trigger so I do not have to delay my memories and remember to act again in the near future.

One Step Prospective Memory Trigger Recipes

- **PAPER AGENDA/CALENDARS.** Set an alarm on your phone or watch that goes off either when a specific event must occur or at one or more times during the day to remind you to take just a moment to review your agenda and see if there is anything you needed to get done.
- **COMPUTER AGENDA/CALENDAR.** Pop up reminders require you to be sitting at your computer. If that is your only option, use the same alarm system as above.

However, most reminder systems can sync with your phone (example: Reminders in iOS, RememberTheMilk app/website) or can send you text messages (example: Google Calendar) when something needs to be completed (these are active triggers). Set your default options to always send you a message that will interrupt you before you need to get started.

- **LOCATION REMINDERS.** Many phones also now have location features that can give you a reminder when you arrive or leave a certain place. Set it up to remind you where you need to stop when you leave home or to remind you to put something aside when you arrive so it's prepared for tomorrow.

Making To-Do's Useful

A good "To-Do" list has a few very key features that help us get tasks done or get one step closer to getting a larger project completed. These are some things a "To-Do" list should tell you:

- What exactly needs to get done (example: what pages do I need to read; what questions do I need to answer).
- When does it need to be done by (example: the due date).
- Information about whether it is something I can get done in a single sitting or if it's something I need to make a plan for (example: what type of activity is it).
- Information that helps me predict how much time I need for this task and future tasks.
- A list of the activities and steps I've already completed.

Take a look at the next page for an example "to-do" sheet I've used with many students.

TO-DO	Type	Due Date	ET	A T	DONE

- LEGEND**
- TO-DO:** What activity do you need to do?
 - Type:** Is the activity a single “TASK” (example: reading) or do I need to make a “RECIPE” by breaking it down into several smaller tasks.
 - Due Date:** When do I need to get this step done by?
 - ET:** How long do I think it will take? (Estimated Time)
 - AT:** How long did it take? (Actual Time)
 - DONE:** I’m done!

TO-DO	Type	Due Date	ET	A T	DONE
Psychology: Read Chapter 4 pages 24-40	Task	Sept 12	30	45	X
Biology: Review questions 7-12 on page 30	Task	Sept 12	45	15	X
Chemistry: Get supplies for experiment	Task	Sept 13	60	60	X
Prepare for English Poetry Review Report	Recipe	Sept 13/30	?	10	X
Poetry: Read Poems 1-4	Task	Sept 14	30	30	X
Poetry: Read Poems 5-8	Task	Sept 15	30		
Poetry: Make Notes from Poems	Task	Sept 16	60		
Poetry: Make Outline for Report	Task	Sept 17	15		

To-Do List Recipe

1. Whatever the format, keep your “To-Do” List with you in some manner at all times.
2. Enter any thing that needs to be done in the “TO-DO” column as soon as you are assigned it.
3. For “Type”, enter “Task” if it is something easily completed in one sitting. If it requires more than onestep to complete, select RECIPE.

Later that day, break your RECIPE into a series of smaller TASKs the same way that we organized our projects in our last chapter.

4. Enter the “Due Date”. For RECIPE’s include two dates, one for when you will make the TASK list and one for when the full activity is due.
5. Estimate how long you think the TASK will take to complete (ET). This will help you plan for this activity and to be even better at predicting the demands of future activities.
6. Enter the actual time (AT) it took to complete the task. How accurate were your predictions?
7. Mark “DONE” when you have completed the task in order to keep track of where you are in the process.

Making To-Do’s work for you (HINTS)

- Simply schedule each “To-Do” item into your day if you use a calendar or an agenda and not a to-do list.
- Think about how to integrate the additional information into your current reminder system:

For the iPhone Reminders app you could list the line of our “To-Do” as:

Poetry: Outline of Report (15 mins) [Set to alert me on Sept. 17 when I get home]

- Lots of small things? Set aside a half hour or an hour each day to get things done. Get into the habit of burning through all the little stuff that wasn’t easily scheduled into your day.

Test Preparation & Test Taking

Two Topics - One Chapter

Many of my previous students have felt that they needed strategy training because they “don’t know how to study”. While I certainly agree that this is the case, I would say even fewer of them know how to take the actual test in a strategic way. We will cover both topics here.

Test Preparation

Test and exam preparation strategies require more flexibility on the student’s part than anything else within this book. Tests can be big or small. They can cover things at a very big picture level or they can be all about the small details, you can have a tonne of time of time to prepare or only a couple of days, and every teacher is different.

On the first test with a teacher, the best that you can really do is to prepare yourself in a structured and smart way by relying on all the strategies you have learned up to this point. For sure, you will be more prepared for testing now than you have ever been in the past.

After the first test, all bets are off. Now that you know how this teacher writes tests, revisit your strategy. Figure out what worked and what didn’t. Adapt!

For now, we have developed a recipe that will give you a little bit of help on any topic. We’ve even included some hints for tests that are a little unique (example: math intensive examinations).

Also, check out the worksheets section for an easy to complete “WHAT & HOW” sheet that will get you going in the right direction from the start.

Test Taking

Finally, we’ve included a strategic way to go through your tests. You would be surprised how many hints are right in the test itself that can help you get the highest mark possible.

If you ever feel lost...

Ask for help! Ask us, a tutor, your classmates, or your teacher.

While it may seem hard to believe, your teachers are usually not trying to trick you on tests. They are trying to prove that you learned something that is important for your next step in school.

Ask them for guidance and you may be surprised how much help they are willing to provide.

A Test-Taking Plan

- 1. WHAT & HOW.** This is two steps really, but we are combining them here because we have made you a nice “Exam Pre-Planner” worksheet that you can use for all tests and examinations (See Chapter X).
 - **WHAT?** What topics, units, or subjects are being covered on this test? What types of content in those areas should I focus on?
 - **HOW?** What format will the test be? How long will it be? What is the value of the test?
 - If you cannot answer any of these questions ... **ASK!**
- 2. INGREDIENTS.** Now that you know what you need to study, take a look at what resources you have on these topics. Do your (now well prepared) notes provide sufficient coverage? Do you have quizzes and previously assigned questions that you can review? Review the book chapter summaries. Were there topics covered here that are not in your notes?
- 3. EXPAND.** Based on Step 2, acquire new resources and expand areas that appear to be missing in your notes.
- 4. ORGANIZE.** Based on the units/topics from Step 1, organize your notes so they are “chunked” into each specific subject.
- 5. PLAN.** Create a study schedule (See next page for some guidance).
- 6. REVIEW AND REHEARSE.** Study your material. Spend time re-reading your material but also quizzing and testing yourself.
- 7. RETURN.** Go back to Step 1, have you covered all the topic areas in sufficient depth?

Building a Study Schedule

1. By using the WHAT & HOW Pre-Planner as guidance, break your study days down by subject. If you have 5 topics, try to allot at least 5 days for studying. If you must do more than one unit in a day, study these two units over two time periods in the day (take a break) and try your best to study units on the same day that are not related to each other (this might seem weird, but it will help avoid confusion between two similar topics).
2. Return and review the previous units each study day. You will need to use less and less time to do this each day, but revisiting material means the “pathway” to that information is clearer and you can access the information faster.
3. The schedule on the next page assumes your notes are pretty organized. If they are not and you need to do a lot more preparation, you will want to spend a couple of extra days getting organized before this starts.
4. Take a 10-minute break after each hour of “study” and a 5-minute break after each “self-test”.
5. Do not cram or lose sleep.
 - Trying to get too much into one day will increase the likelihood you mix things up with similar topics.
 - Not sleeping will prevent the information from getting filed in to your long-term memory.

A 4-Unit Study Plan for Final Exams

You will need to add an extra day per topic/unit, combining topics only when this cannot be avoided. You may also need to adjust the time (more time or less time) based on your memory and the amount of work that needs to be covered. Smaller unit tests may involve only one study day, with some brief “self-test” and “review” days following.

Day 1: _____ 60 minutes: Study Unit 1
30 minutes: Self-Test 1

Day 2: 30 minutes: Self-Test 1
15 minutes: Review errors
60 minutes: Study Unit 2
30 minutes: Self-Test 1

Day 3: 10 minutes: Self-Test 1
30 minutes: Self-Test 2
15 minutes: Review errors
60 minutes: Study Unit 3
30 minutes: Self-Test 3

Day 4: 5 minutes: Self-Test 1
10 minutes: Self-Test 2
30 minutes: Self-Test 3
15 minutes: Review errors
60 minutes: Study Unit 4
30 minutes: Self-Test 4

Test Day: 5 minutes: Self-Test 1
5 minutes: Self-Test 2
10 minutes: Self-Test 3
30 minutes: Self-Test 4

Math Study Guide

Practice Makes Perfect

It is very important to complete all possible review questions from previous examinations. Practice makes math problem solving fluent (fast) or “automatized”. This means you do not have to think much about the process or steps in the math problem, which instead allows you to focus on being smart and getting the right answer. But:

- There is a risk that you will simply memorize the questions you have been practicing if there are not enough of them!
- Look in your textbook or notes for further examples that look like the ones from your practice examples/tests.
- Work with a partner. Create some questions and answers for your partner to practice and vice-versa.

Practice is NOT Enough

A common problem with using a math study strategy that focuses on just “practice” is that you may be simply memorizing how to complete the problem instead of understanding why you are supposed to do it one way over another. To avoid this common mistake:

- Ask yourself on EVERY math question, “How do I know what the question is asking me to do?”
- This means you ask yourself WHAT (concept are they testing me on) and HOW (am I being asked to respond) every time you view a question during studying and while completing the test.

Ask Your Teacher/Professor

Your teachers write their exams using the logic above. They do not chose random questions! Rather, they ask themselves, “What concepts do I need to make sure my students understand”. They then create questions that cover each of those concepts.

You should always strive to think about a question the same way the person who wrote the question (they also usually created the scoring key). Why not go to your teacher with a previous exam and simply ask, “How do I know what formula this is asking me to use?”

That simple question can be the difference between a C and an A. Why are you not asking it?

General Test-Taking Recipe

You've been organized with your notes, your reading, and your preparation. The test is where it all counts, so do not stop now. Below is an easy to follow step-by-step way to go through your exam. It leverages everything we have learned so far.

- 1. SCAN.** Quickly scan through the overall test to see how long it is and what formats are included. Do not get bogged down reading the questions yet.
- 2. REVIEW.** Look over all of the short answer and essay questions. Which ones of these do you know for sure?
- 3. RESPOND.** Answer the short answer and essay questions you know. Use the Short Answer and Essay recipe on the next page.
- 4. REVIEW Part 2.** Look over the short answers and essays you were not so certain about. Did the other questions you answer remind you of anything? If you for sure know something new complete that question, if not or after you've answered that question move on to #5.
- 5. MULTIPLE-CHOICE.** Answer the multiple-choice questions using the recipe on the next page.
- 6. REVIEW Part 3.** Now that you've answered many written questions and the multiple-choice questions you are bound to remember more than before. If so, answer these written questions now.
- 7. STUCK?** If so, were there any topics or subjects the teacher or professor said would be on the test that you have not seen yet? Does that help jog your memory?
- 8. STILL STUCK?** Time to guess. Just be vague, maybe they will assume you know what you are talking about.

Short Answer/Essay Recipe

1. **WHAT.** Identify what the question is asking you.
2. **HOW.** How many points is it? You need at least that many answers.
3. **PLAN.** Make an outline. Even a word per point in the margins will keep you organized and will speed you up.
4. **COMPOSE.** Write the answer.
5. **REVIEW.** Return when you are done the test. Look it over for errors. Read the answer and then the question, do they make sense together?

Multiple-Choice Recipe

1. **NO ANSWERS.** The problem is you might have studied the other answers too. If you read them first, you may activate the wrong memory in your brain. Read the question, then try to answer it yourself and see if your answer is there.
2. **ELIMINATE.** If it's not there exactly as you said it or you are a bit confused, eliminate the answers you know are definitely incorrect.
3. **REVIEW.** Of those that are left, are there questions that seem partially right and partially wrong? They are probably there to trick you (ok ... maybe they do sometimes try to trick you).
4. **CONFUSED?** If you are still lost, check the tense. If the question is plural and the answer is singular it is likely wrong. The question and the answer should be in the same tense or format.

GOOD LUCK!
GET A GOOD NIGHTS SLEEP.

Your Recipe Worksheets

The next few pages will have unmarked (no chapter titles or pages numbers) copies of all the worksheets that were introduced to you in this book. Just like the book, this section is a work in progress and will expand as new chapters are added to “Now You’re Cooking With Brains”.

You can obtain the most up to date version of Chapter X along with any new bonus Chapters for free at studentstrats.com and cookingwithbrains.com.

The current worksheets include:

The Project Recipe Worksheet

The “To-Do” List

The Exam Pre-Planner

DATE: _____

THE PROJECT RECIPE WORKSHEET

INGREDIENTS

1. WHAT?

(What is the topic? What am I being asked to answer? Are there multiple questions here?)

2. HOW?

(How am I to present this information? What is the format-length-style? Due date?)

RECIPE

3. How will I do my research or find resources? Due Date: _____

4. How will I review resources? Should notes be a new step? Due Date: _____

5. Take your notes. Due Date: _____

6. Make an outline. Due Date: _____

7. Complete the writing step without editing. Due Date: _____

8. Edit your work as a separate step. Due Date: _____

9. Complete a final review before handing in your work. Due Date: _____

DATE: _____

TO-DO	Type	Due Date	ET	AT	Done!

- LEGEND**
- TO-DO:** What do you need to do?
 - Type:** Is it a single “Task” (example: reading) or do I need to make a “RECIPE” by breaking it down into several smaller tasks.
 - Due Date:** When do I need to get this step done by?
 - ET:** How long do I think it will take?
 - AT:** How long did it take?
 - DONE:** I’m done!

DATE: _____

EXAM PRE-PLANNER

Exam Name: _____ Exam Date: _____ Days Until Exam: _____

WHAT?

- What topics/units/subjects are being covered on the test?
- What type of content in those areas should I focus on?

HOW?

- What format will the test be? (e.g., essay; short answer; multiple choice)
- How long will the test be?
- What is the value of the test?
