

Picture yourself sitting at a desk, an open book in your hands. Your eyes are open too, and it looks as if you're reading. Suddenly your head jerks up. You blink. You realize your eyes have been scanning the page for 10 minutes, and you can't remember a single thing you have read.

Or picture this: You've had a hard day. You were up at 6 a.m. to get the kids ready for school. A co-worker called in sick and you missed your lunch trying to do your job and his. You picked up the kids, then had to shop for dinner. Dinner was late, of course, and the kids were grumpy. Finally, you got to your books at 8 p.m., and you began plodding through something called the "equity method of accounting for common stock investments." You tell yourself, "I am preparing for the future," as you claw your way through two paragraphs and begin the third.

Suddenly everything in the room looks different. Your head is resting on your elbow, which is resting on the equity method of accounting. The clock reads 11:30 p.m. Say good-bye to three hours.

Sometimes, the only difference between a sleeping pill and a textbook is that the textbook doesn't have a warning on the label about operating heavy machinery.

"Muscle Reading" is a technique you can use to avoid mental mini-vacations and reduce the number of unscheduled naps during study time, even after a hard day. More than that, Muscle Reading is a way to decrease effort and struggle by increasing energy and skill. Once you learn this technique, you can actually spend less time on your reading and get more out of it.

This is not to say you can avoid all work and still challenge your self in your education. Muscle Reading might even look like more work at first. Effective textbook reading is an active, energy-consuming, sit-on-the-edge-of-your-seat business. That's why this strategy is called Muscle Reading.

### **How Muscle Reading Works**

The key idea behind Muscle Reading is that your textbooks have something you want. They offer knowledge and valuable information. Sometimes the value is so buried that extracting it requires skill and energy.

Muscle reading is a three-phase technique you can use to accomplish that extraction. Each of the three phases has three steps. To assist your recall of all nine steps, memorize three short sentences:

***Pry out questions.***

***Root up answers.***

***Recite, review, and review again.***

Take a moment to invent images for each of those sentences. First, visualize or feel yourself prying questions out of a text. These are questions you want answered based on your brief survey of the assignment. Make a mental picture of yourself scanning the territory, spotting a question, and reaching into the text to pry it out. Hear yourself saying, "I've got it. Here's my question."

Then root up the answers to your questions. Get your muscles involved. Flex. Feel the ends of your fingers digging into the text to root up the answers to your questions.

Finally, hear your voice reciting what you have learned. Hear yourself making a speech about the material. Hear yourself singing it.

These sentences are an acrostic. The first letter of each word stands for one Muscle Reading process.

Thus:

<b>Pry</b>	<b>Out</b>	<b>Questions.</b>	<b>Root</b>	<b>Up</b>	<b>Answers.</b>
r	u	u	e	n	n
e	t	e	a	d	s
v	l	s	d	e	w
i	i	t		r	e
e	n	i		l	r
w	e	o		i	
		n		n	
				e	

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Configured another way, the three phases and nine steps look like this:

### ***Before you read: Pry out questions.***

- Step 1: Preview
- Step 2: Outline
- Step 3: Question

### ***While you read: Root up answers.***

- Step 4: Read
- Step 5: Underline
- Step 6: Answer

### ***After you read: Recite, review, and review again.***

- Step 7: Recite
- Step 8: Review
- Step 9: Review again.

A nine-step reading strategy might seem cumbersome and unnecessary for a two-page reading assignment. It is. Keep in mind that Muscle Reading is not an all-or-nothing package. Use it appropriately. You can choose what steps to apply as you read. The main point is to preview, read, and review. The nine steps are just strategies for accomplishing those three tasks.

Muscle Reading takes a little time to learn. At first you might feel it's slowing you down. That's natural. Mastery comes with time and practice. If you're still concerned about time, give yourself some options. For example, apply the following techniques to just one article or part of a chapter.

### **Before you read**

#### **Step 1: Preview**

Before you begin, survey the entire assignment. You did a survey of this book for Exercise #1: "Textbook reconnaissance." Research indicates that this technique, called previewing, can significantly increase your comprehension of reading material.

If you are starting a new book, look over the table of contents and flip through the text page by page. Even if your assignment is merely a few pages in a book, you can benefit from a brief preview of the table of contents.

Keep the preview short. If the entire reading assignment will take less than an hour, your preview might take five minutes. Previewing is also a way to get yourself started when an assignment looks too big to handle. It is an easy way to step into the material.

When previewing, look for familiar concepts, facts, or ideas. These items can help link new information to previously learned material. Look for ideas that spark your imagination or curiosity. Ask yourself how the material can relate to your long-term goals. Inspect drawings, diagrams, charts, tables, graphs, and photographs.

Keep an eye out for summary statements. If the assignment is long or complex, read the summary first. Many textbooks have summaries in the introductions or at the end of each chapter.

Read all chapter headlines, section titles, and paragraph headlines. These are often brief summaries in themselves.

If you expect to use a book extensively, read the preface. The author often includes a personal perspective in a preface. A picture of the person behind the words can remove barriers to understanding. Look for lists of recommended books and articles. If you have difficulty with a concept, sometimes another viewpoint can nail it down for you.

Before you begin reading, take a few moments to reflect on what you already know about this subject, even if you think you know nothing. This technique prepares your brain to accept the information that follows.

Finally, determine your reading strategy. Skimming might be enough for some assignments. For others, all nine steps of Muscle Reading might be appropriate. Ask yourself these questions: "How will I be tested on this material?" "How useful will this knowledge be later?" "How much time can I afford to spend on this assignment?"

To clarify your reading strategy, you might write the first letters of the Muscle Reading acronym in a margin or at the top of your notes and check off the steps you intend to follow. Or write the Muscle Reading steps on 3 x 5 cards and then use them for bookmarks.

You don't have to memorize what you preview to get value from this step. Previewing sets the stage for incoming information by warming up a space in your mental storage area.

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### Step 2: Outline

The amount of time you spend on this step will vary. For some assignments, fiction and poetry for example, skip it. For other assignments, a 10-second mental outline is all you need.

With complex material, take time to understand the structure of what you are about to read. If your textbook provides chapter outlines, spend some time studying them.

If a text does not provide an outline, sketch a brief one in the margin of your book or at the beginning of your notes. Then, as you read and take notes, you can fill in your outline.

Section titles and paragraph headlines can serve as major and minor topics for your outline. If assigned reading does not contain section titles or headlines, you can outline the material as you read. In this case, outlining actively organizes your thoughts about the assignment.

Use whatever outline style works best for you. Some readers prefer traditional Roman numeral outlines. Others prefer mind maps or notes in the Cornell format. (These methods are explained in Chapter Five.) If your text includes headings in bold or italic print, you can also outline right in the text. Assign numbers or letters to each heading, just as you would for a traditional outline.

Outlining can make complex information easier to understand.

### Step 3: Question

Ask yourself what you want from an assignment before you begin reading. Your preview might suggest some questions. Imagine the author is in the room with you. What would you ask him? How can he help you get what you want from your education? Create a dialogue. Begin your active participation in the book before you start to read.

Write down a list of questions. Be tough. Demand your money's worth from your textbook. If you do not understand a concept, write specific questions about it. The more detailed your questions, the more powerful this technique becomes. Knowledge is born of questions.

If a reading assignment seems irrelevant, sit back for a minute and think about what it is you want from your time in school. Check to see if your education will be complete without this piece of the puzzle. Even if a particular assignment doesn't have personal meaning for you at the moment, it may be tied to a broader goal like getting a certain grade in the class.

Another useful technique is to turn chapter headings and section titles into questions. For example, if a subtitle is "Transference and Suggestion," you can ask yourself, "What are transference and suggestion?" "How does transference relate to suggestion?" Make up a quiz as if you were teaching this subject to your classmates.

Make the questions playful or creative. Have fun with this technique. You don't need to get an answer to every question you ask. The purpose of making up questions is to get our brain involved in the assignment. Take your unanswered questions to class, where they can be springboards for class discussion.

Learning to ask effective questions takes practice, and you can discover rewards for developing this skill. The questions you formulate help you stay alert through complicated reading.

Boredom and fatigue tend to disappear when you're busy finding answers. In fact, when you find one, expect to feel a burst of energy. It might be a small burst, if it was a small question. Or it might bring you right out of your chair if the question was important to you. If you find a series of answers in a reading assignment, you might finish the assignment feeling more energetic than when you began.

For some assignments, you might spend considerable time previewing, outlining, and asking questions before you start reading. The potential rewards are understanding and remembering more of what you read and saving time.

### While you read

#### Step 4: Read

At last! You have previewed the assignment, organized it in your mind, and formulated question. Now you are ready to begin reading.

As you read, be conscious of where you are and what you are doing. Practice "being here now". When

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you notice your attention wandering, gently bring it back to the present.

One way to stay in the here and now is to make tick marks on scrap paper whenever you notice your attention flagging.

You might make many tick marks at first. That's OK. The marks signify your attentiveness, so don't be discouraged by lots of them. Most students notice that as they pay attention to their attention, the number of tick marks decreases.

If a personal problem or some other concern is interfering with your concentration, experiment with this idea. Write down the problem along with a commitment to a future course of action. Getting the problem down on paper, with a commitment to take action, can free your mind for the present task.

Another way to stay focused is to avoid marathon reading sessions. Schedule breaks and set a reasonable goal for the entire session. Then reward yourself with an enjoyable activity for five or 10 minutes every hour or two. With practice, some students find they can stay focused up to three hours without a break.

For difficult reading, set shorter goals. Read for a half hour, then break. Most students find that shorter periods of reading distributed throughout the day and week can be more effective than long sessions.

You can use the following three techniques to stay focused as you read.

First, visualize the material. Form mental pictures of the concepts as they are presented. If you read that a voucher system can help control cash disbursements, picture a voucher handing out five-dollar bills.

Second, read it out loud—especially complicated material. Some of us remember better and understand more quickly when we hear an idea.

Third, get a feel for the subject, literally. For example, let's say you are reading about a microorganism, a paramecium, in your biology text. Imagine what it would feel like to run your finger around the long, cigar-shaped body of the organism. Imagine feeling the large fold of its gullet on one side, and feel the hairy little cilia as they wiggle in your hand.

A final note: It's easy to fool yourself about reading. Just having an open book in your hand and moving your eyes across a page doesn't mean you are reading effectively. Reading textbooks takes energy, even if you do it sitting down. One study revealed that corporation presidents usually wear out the front of their chairs first. Approach your reading assignment like the company president. Sit up. Keep your spine straight. Use the edge of your chair.

And avoid reading in bed, except for fun.

### Step 5: Underline

Deface your books. Use them up. Have fun writing and colouring in them. Indulge yourself as you never could with your grade-school texts. Keeping text - books clean and neat might not help you get what you want from them.

The purpose of making marks in a text is to create signals for reviewing. Underlining or highlighting can save lots of time when you study for tests.

A secondary benefit of marking is that when you read with a pen in your hand, you are involving another mode of perception, your kinesthetic sense—that is, your sense of touch and motion. Being physical with your books can help build strong neural pathways in your memory.

Avoid underlining or highlighting too soon. Wait until you have completed a section or concept to make sure you know what is important. Then mark up the text. Sometimes stopping after each paragraph works best. For some assignments, you might want to read a larger section before deciding what to mark.

Some people prefer coloured highlighters to pens for marking up a text. Pens can make underlined sections—in other words, the important parts—harder to read than the rest of the book. You can still use a pen for making notes in the margins and circling important sections.

Underline or highlight sparingly, usually less than 10 percent of the text. If you mark up too much on a page, you defeat the purpose, which is to flag the most important material for review.

Write in the margins of your texts. Write summary statements and questions. Mark passages that you don't understand. If you find a list or series of

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elements in a paragraph, you can circle and number them.

It's true that marking up your textbooks can lower their resale value. The money you lose by doing it is ridiculously small compared to the value of your education. Writing in your textbooks helps you wring every ounce of value out of them.

### **Step 6: Answer**

As you read, get the answers to your questions and write them down. Fill in your outline. Write down new questions and note when you don't get the answers you wanted to find. Use these notes to ask questions in class, or see your instructor personally.

When you read, create an image of yourself as a person in search of the answers. You are a detective, watching for every clue, sitting erect in your straight-back chair, as alert as a Zen master, curious as Sherlock Holmes or Nancy Drew, demanding that your textbook give you what you want—the answers.

### **After you read**

#### **Step 7: Recite**

Talk to yourself about what you have read. Or talk to someone else. When you finish reading an assignment, make a speech about it. Once classic study suggests that you can profit if you devote up to 80 percent of your study time to active reciting.

One way to get yourself to recite is to look at each underlined point. Note what you marked, then put the book down and start talking out loud. Explain as much as you can about that particular point.

To make this technique more effective, do it in front of a mirror. It may seem silly, but the benefits can be enormous. You can reap them at exam time.

Friends are even better than mirrors. Form a group and practice teaching each other what you have read. One of the best ways to learn anything is to teach someone else.

There is a secret buried in this suggestion. That secret is, have someone else do the work. Your instructors might not appreciate this suggestion, but it can be a salvation when you're pressed for time. Find a friend you trust and split up the reading assignment. Each of you can teach half the assignment to the other. (Warning: You might be far

better versed in the part you read and teach. And if your friend misses an important part, you could miss it too.)

Talk about your reading whenever you can.

#### **Step 8: Review**

Plan to do your first complete review within 24 hours of reading the material. Sound the trumpets, this is critical: A review within 24 hours moves information from your short-term memory to your long-term memory. It can save you hours later on. Review within one day. If you read it on Wednesday, review it on Thursday.

During this review, look over your notes and clear up anything you don't understand. Recite some of the main points again.

At first, you might be discouraged by how much you think you forgot from the previous day. Don't worry. Notice how quickly you pick up the material the second time. One of the characteristics of memory is that even when you cannot recall something immediately, you can relearn it more easily if you have already learned it once. And relearning wears a deeper path into your memory.

This review can be short. You might spend as little as 15 minutes reviewing two-hour reading assignment. Investing that time now can later save you hours when studying for exams.

Also remember that you can stop to review and check your comprehension at any point, even before you complete a whole reading assignment.

#### **Step 9: Review again**

The final step in Muscle Reading is the weekly or monthly review. This step can be very short—perhaps only four or five minutes per assignment. Simply go over your notes. Read the highlighted parts of your text. Recite one or two of the more complicated points.

The purpose of these reviews is to keep the neural pathways to the information open and to make them more distinct. That way, the information can be easier to recall. You can accomplish these short reviews anytime, anywhere, if you are prepared. Take your text to the dentist's office, and if you don't have time to read a whole assignment, review last

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week's assignment or the previous week's assignment. Conduct a five-minute review while you are waiting for a bus, for your socks to dry, or for the water to boil. Three-by-five cards are a handy review tool. Write ideas, formulas, concepts, and facts on cards and carry them with you. These short review periods can be effortless and fun.

Sometimes longer review periods are appropriate. For example, if you found an assignment difficult, consider rereading it. Start over, as if you had never seen the material. Sometimes a second reading will provide you with surprising insights. Your previous experience acts as a platform from which you can see aspects that didn't appear during the first reading.

Schedule some review periods well in advance. You might set aside one hour on a Saturday or a Sunday to review several subjects. Keep your reviews short and do them often.

Finally, take some time to reflect on what you read. As you walk to and from class, in your discussions with other students, or before you go to bed at night, turn over new ideas in your mind. Take time to play with them. Develop a habit of regular review.

Psychologists speak of the primacy-recency effect, which suggests that we most easily remember the first and last items in any presentation. Previewing and reviewing your reading is a powerful way to put this theory to work for you.

### **Want more information?**

The Counselling Department is the best source for advice and information on issues related to learning, studying, time management, and academic performance.

Workshops on learning, studying, etc., are offered regularly each semester by the Counselling Department. Please contact Student Services at Abbotsford - 604-854-4528 (B 214) or Chilliwack - 604-795-2808 (E 105) to make an appointment.

Study Skills Tip Sheets providing information on many learning and time management topics, as well as writing and referencing, are available free to students. The complete range of Study Skills Tip Sheets is available on-line at [www.ufv.ca/counselling/study/](http://www.ufv.ca/counselling/study/).

### **Other Relevant Study Skills Tip Sheets:**

Concentration

How to Cram

Learning from Textbooks

Note-Taking

Reading and the Web

Reading and the Web—Reading from  
Computer Monitors

SQ4R: A Classic Method for Studying Texts

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