

Chapter
3**LEARN with the Memletic Process**

The Memletic Process is five core steps that help you learn faster and remember more. It uses much of what we know about strong learning performance. Each step provides you with new insights into learning well. All the steps together deliver a powerful and repeatable method for achieving many learning goals. Let's explore the Memletic Process...

This is a summary of the Memletic Process chapter from the Memletics Accelerated Learning Manual. You can find more information on the manual by visiting <http://www.memletics.com/manual>

The Memletic Process is five steps to follow while learning any new topic or skill. These steps are Locate, Explore, Arrange, Reinforce, and eNquire. The following diagram outlines these steps:



As you can see above, the first letters (or sounds) of these steps create the mnemonic LEARN. Here's a summary of each of these five steps:

- **Locate.** Find content for your course. This may involve using standard books and manuals, however it could also involve getting material from lectures, one-on-one tutoring sessions, the Internet and other references.
- **Explore.** Work through and understand your content. There are some general principles to follow, such as learning content using the *deeper, wider, higher* principle. You may also want to try some exploration techniques specific to your personal learning styles.
- **Arrange.** Prepare your content for memorization, where needed. In this step you select suitable techniques to reinforce the content you've explored, and then prepare content to use with those techniques
- **Reinforce.** In this step, you use the various techniques to reinforce knowledge, skills and behaviors. This book has many different techniques you can apply to various forms of content.

- **eNquire.** eNquire on your overall progress. Review both the content you've learned, as well as the effectiveness of the techniques and processes you've used along the way.

This chapter looks at each of these steps in more detail. Two quick points before we begin though. Firstly, you may find that you already use a similar approach when you are learning. That's fine. The Memletic Process makes each step clear. This helps you understand how the other parts of Memletics fit into your overall learning strategy. It also allows you to compare your current practices and discover if you're missing any key steps or activities.

Secondly, don't consider these steps as rigid or prescriptive. You may find that you move back and forward between the steps. In addition, you may not need to do all the steps for every learning objective.

For example, when you explore some material you may find you need more information on a particular topic, and so you go back to the Locate step to find it. Alternatively, when you start to reinforce (and practice) what you've learned, you may find you need to explore it further to understand it fully. Lastly, a simple learning objective may allow you to skip the explore step.

Locate—find content for learning

The locate step involves gathering the content you need for learning. Sometimes this may be easy. The course may prescribe texts and materials for you. At other times you may be learning something that few others have, so you have to forge your own way. You may be somewhere in the middle, with some texts prescribed for you and some further research to do.



Let's look at some typical content sources, as well as some general tips for locating content.

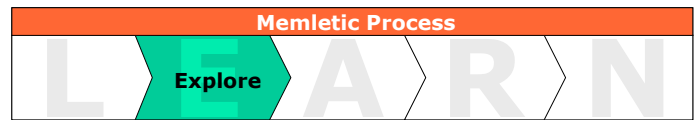
Content in the book includes:

- Typical content sources and comments on each, including books, texts, instructors, lecturers, the Internet, computer based training, students, others in the field, biographies, video, and others
- Includes an in-depth guide of what to look for while searching for content. Contrasts theoretical information with practical and useful knowledge, and how to tell the difference. Uses an example of presentation training to make this clear.
- Specific content collection techniques – note taking, highlighting, and organizing your notes.
- Note taking covers what to write down, use of white space (eg Cornell technique), getting used to writing in your own books, and use of alternative formats
- Intelligent highlighting covers why highlighting is an important skill, and how its misuse can be dangerous to good learning. Includes what to highlight, when to highlight, use of colors, use of notes with highlighting, and transfer of notes to other formats.

- Note organization tips include using summary or index, rating what you find, and checking against your training plan to ensure adequate coverage.

Explore—understand content

The next step in the learning process is to *explore* your topic and the material you've collected. Your goal is to *understand* the topic, rather than just rote learn it. A fundamental learning principle underlies exploration. If you learn something in more depth up front, you remember it for longer.



Learning material by rote sometimes appears easier. You *could* learn some topics faster by rote compared to trying to understand the details behind the topic. However, this typically results in slower overall learning for two reasons.

Firstly, if you forget part of the topic learned by rote, you have little to help you recall it. If you understand the underlying ideas, it's more likely you can rebuild parts of the topic in your mind. Consider a mathematical formula. If you only rote learn it, you may forget whether to add or subtract some item in the formula. If you understand the theory behind the formula, it's more likely you can work out whether to add or subtract.

Secondly, it's less likely you can apply a topic in a slightly different way if you only rote learn it. If you learn the details behind a topic, you have more opportunity to work out what you need to change to apply the topic differently. For example, understanding some details behind aircraft navigation makes it easier to apply the same knowledge to maritime navigation.

You can explore at many levels. When you first start your training, you explore the overall course content and understand how each lower level module contributes to the overall objectives. As you progress, you then explore each part in more detail. Both the high and low-level details form part of your understanding of a topic.

Many techniques and tools can help you explore your content. In this section, we first look at some general techniques you can apply to any exploration activity. Then I present more techniques grouped (roughly) into the most relevant Memletic Style. We are yet to cover these styles in detail, so you may want to review the basics of each style in the Overview chapter. In summary, the styles are Visual, Aural, Verbal, Physical, Logical, Social and Solitary learning styles.

Here is a summary of the exploration techniques described in this section:

General exploration

- High altitude view
- Deeper level
- Branch wider
- Abstractions
- Bottom up
- Questions³

Visual exploration

- Diagrams, graphs, and sketches
- Mind maps

Physical exploration

- Walk about
- Get hands-on
- Role-playing
- Index cards & Post-It notes
- Tick it off

Logical exploration

- Logic analysis—OSAID
- Logic trees
- Play with numbers

- Systems diagrams
- Visualization

Aural exploration

- Sound focus
- Record sounds

Verbal exploration

- Lectures and discussions
- Dramatic reading
- Express and summarize aloud
- Write and rewrite
- Write articles
- Write summaries
- Record

Social exploration

- Group learning
- Study buddy
- Opposite view
- Role-play
- Involve others

Solitary exploration

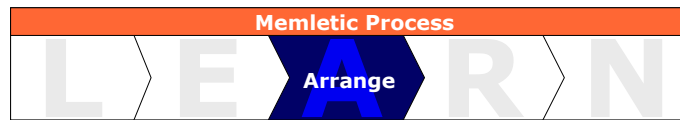
- Reaction notes
- Learning journal or log
- People exploration
- Make up your own mind

How far should you go when exploring your material? It depends on your objectives. If you want to know a particular topic well, you may want to explore it in more detail than a course mandates. Don't go too far though. If you find yourself analyzing the behavior of electrons in water molecules, and how that contributes to a landscape photograph, you have probably gone too far!

Content in the book includes full descriptions of all these techniques.

Arrange—prepare for retention

Once you've explored your material, you then need to work out how you are going to memorize what you've learned. As you can see in the text box on page **Error! Bookmark not defined.**, long-term learning needs to change your brain. Consider this step as preparing your material to help you change your brain.



Arranging involves three basic steps. The first is to analyze your content to understand the type of knowledge it is. This then helps you with the second step—choosing the techniques to use to reinforce and memorize that knowledge. Thirdly, you then prepare the content to suit the techniques you've selected.

This section describes these three steps—analyze, choose, and prepare. Like many other parts of Memletics, you can choose how much time to spend on arranging. Simpler learning objectives may not need much arranging. For important or complex learning objectives, you may need to understand this Arrange step in more detail.

Content in the book includes:

Analyze Content

- An overview of what knowledge is (according to this book), and two knowledge types used to categorize your content.

- Use the five knowledge storage types – facts, concepts and principles, sensory-motor skills, procedures, and higher-order skills (eg problem solving, decision-making, judgment, critical thinking, reflection, communication etc)
- Use the three knowledge usage types – automatic knowledge, working knowledge, and supporting knowledge.
- Use these knowledge types to analyze your content. How to break down your training material into chunks of content. Includes a table to help you assess your own content.
- How to alter your rankings to account for exams and tests.

Technique Selection Matrix	Type				
	Facts	Concepts/Princ.	Sensory-Motor	Procedures	Higher Order
Associate Techniques					
General Association	●	◐	◐	◐	◐
Basic Mnemonics	●	◐		◐	
Linked Lists	●			●	
Peg Words	●	◐		◐	
Peg Events			◐	◐	◐
Mental Journey/Story	●	◐		●	
Roman Rooms	●	◐			
Chunking	●	◐	◐	◐	
Visualise Techniques					
General Visualisation	◐	●	●	●	

Choose your retention approach

- How to use the results from the first step to decide how to retain your content for the long term.
- Use a table to help decide what to memories versus what to use an external reference for
- How to choose techniques. Includes a comprehensive table that rates techniques according to the knowledge types. See the part of the table on the right.
- How to vary your techniques for initial learning versus reinforcing, how to combine techniques, and how to use part task training and recombination approaches.

Prepare for Application

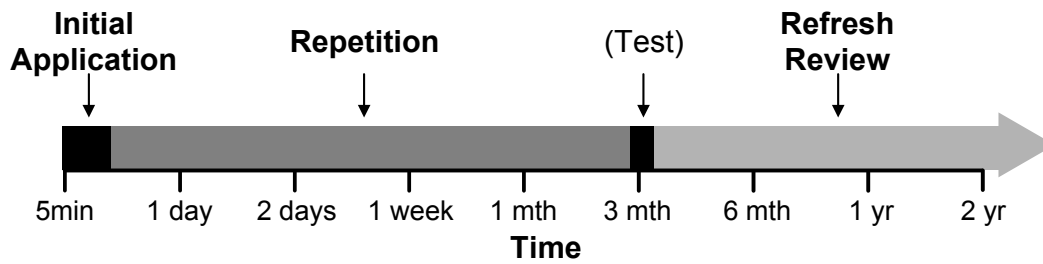
- Basic examples on how to prepare content for use with the various techniques.

Reinforce—build brain networks for the long term

The reinforce step involves applying the techniques you have selected and prepared for during the previous Arrange step. The previous arrange step prepared material for your brain. This step is where you change your brain for long term memorization.



The reinforce step involves three activities. These are applying the techniques, using repetition, and then continuing with refresh reviews. The following diagram outlines these stages. This is an example timeframe. Your individual course may vary in length and timing.



Think of repetition as building your brain networks, and refresh reviews as preserving them for the long term. Usually you will have an exam or test to complete as part of a course, so this may be a good point to split these tasks. You may choose any point you like.

In this section, I cover these tasks in more detail. I also discuss some points on effective repetition, including some information on helpful software.

Content in the book includes:

Apply the techniques

- General points on applying the techniques and noting the outcomes
- Tips for application, including keeping an open mind, and what to do when they don't work as you expect.

Use repetition to reinforce your knowledge

- A comprehensive guide to the use of repetition during learning, and how to make sure your repetitions are most effective.
- Why spacing is so important in your learning schedule.
- How to apply repetition principles in your own training. Three tips are to spread repetition, use the Memletic techniques to support repetition, and to reduce repetition over time.
- Find out why cramming is ineffective, how to introduce variety and interference, and why overlearning can help.

Use refresh reviews to keep your knowledge for the long term

- How to use refresh reviews to keep what you know for the long term.
- Provides a graph that demonstrates the impact of forgetting, including how much we typically forget within the first twenty-four hours of the first lesson.
- Outlines a major deficiency in current training approaches – the focus on the exam or test, and no long term review.
- How long to spend on refresh reviews.
- What to review – which knowledge types are forgotten faster.
- When to do your reviews and what depth to go to.

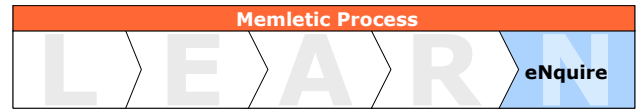
Effective Repetition Tips

- How to reduce reliance on rote repetition, and how to adopt practices that help you manage repetition, both during and after your training.

- Some comments on using scheduled review and programmed review techniques during your training.
- Comments on software like “SuperMemo,” and its huge potential for developing effective learning programs.

eNquire—review your learning effectiveness

The last step of the Memletic Process is eNquire. Enquire involves reviewing the effectiveness of your learning efforts. In this section, I first discuss creating and using a review log. I then describe four types of review:



- **Immediate review.** Receive immediate feedback and correction while learning (but not too much).
- **Lesson review.** Review the effectiveness of the previous steps when learning new material.
- **Formal review.** Use tests or examinations to measure your recall of information.
- **System review.** Review your overall use of Memletics.

The enquire step of the Memletics Process helps you improve your training and learning. It’s not just a record of what you did wrong. Making mistakes helps you learn, so don’t be afraid to make them (see the Challenges chapter for more thoughts on mistakes). Do be diligent in recognizing them and correcting them though. Using reviews is a key part of this diligence, and this in turn accelerates your overall learning.

Content in the book includes:

Create your review log

- How to create a review log, comments on what format to use, and when to use them.
- Whether to use positive or negative phrasing in your reviews
- Using assertions in your reviews, and creating a training assertions list. How to make your assertions list even more powerful by memorizing it (and tips on how)

Get immediate feedback – but not too much

- The advantages and disadvantages of feedback during training.
- Sources of augmented feedback, including instructors and devices such as compasses, depth sounders, GPS and others.
- How continual “augmented feedback” can be dangerous, and how to overcome this danger

Do lesson reviews

- How to formalize your reviews by writing down notes after each lesson.
- Using others (such as instructors, coaches, teachers or colleagues) to gain more feedback

- When to write your review, what to include (such as objectives and outcomes), and how to keep track of review points during lessons.
- How to use a symbol to mark items you want to review later. These may be on meeting notes, flight plans, score sheets, plans etc.
- How to analyze issues, including marking them according to their severity, and using the “five whys” technique to understand underlying or “root causes”
- How to turn issues into action points, including using the “five actions” approach.

Do formal reviews to confirm your understanding

- How to use tests, examinations, orals and other methods to test your knowledge.
- Comments on how to view them positively, and what to do when your results don't seem to match your expectations.
- Use of reviews after exams.

Use system reviews to improve your use of Memletics

- How to review your use of Memletics to ensure you get the most from it.
- Examples of what to review from each of the parts.
- How to get more information

Chapter summary

You've now seen the five core steps of the Memletic Process. Together these steps help you learn faster, and help you remember what you've learned for as long as you wish. You can easily remember the five steps via the LEARN acronym.

The Locate step gave you tips for finding the content you need to learn. You saw three examples of what content you may find in books and courses. We also discussed note taking, highlighting and organizing skills.

The Explore step provides you with over thirty ways to explore content. Some are general techniques, while many are specific to various learning styles.

In the Arrange step, you saw how to prepare content for long-term retention. We looked at how to analyze content, choose your retention approach and prepare content for the next step.

The Reinforce step is where you apply the Memletic Techniques. We discussed how to use repetition effectively, and how to refresh material after you've learned it.

In the last step, eNquire, we considered the many different ways you can review your learning. This includes immediate reviews, lesson reviews, formal reviews and system reviews.

Now you understand the process to follow to learn effectively. In the next chapter we look at the Memletic Techniques.