

SEQUENCE LEARNING OBJECTIVES HOW TO

How do I sequence Learning Objectives?

[What is sequencing?](#)

[What are sequencing methods?](#)

[How do I sequence the learning objectives for the course?](#)

[What does a Sequence report look like?](#)

What is sequencing?

Sequencing refers to the arrangement of learning objectives (LOs) for a course into a logical teaching sequence. There are seven sequencing methods: Job performance order, chronological order, critical sequence, simple to complex order, comparative sequence, relationships between objectives, and part to whole.

You may use one method or a combination of methods to sequence the learning objectives in a logical teaching order. For example, a course can include a combination of both the “critical sequence” and the “relationship between objectives” sequencing methods.

In addition, it is also possible to reverse one of the sequencing methods. For example, lesson topics may be ordered in reverse chronological order, or from least critical to most critical. Always keep in mind that the best sequencing method (or combination of sequencing methods) is the one that works best for the students.

(Source: NAVEDTRA 130A, Volume I, 4-9-1 to 4-9-2)

What are sequencing methods?

There are seven sequencing methods. Each of these sequencing methods is summarized in the table below. To read more about a particular sequencing method and its use, click on the appropriate link in the “Sequencing Method” column.

Sequencing Method	Summary Definition
Job performance order	The learning objectives (LOs) are taught in the order in which the duties and tasks are performed. In other words, the sequence is the same as the job sequence.
Chronological order	The sequencing of LOs is done in a way that is consistent with the order in which the events occur in time.
Critical sequence	The LOs are ordered in terms of their relative importance.
Simple to complex	The LOs are ordered in terms of increasing difficulty.
Comparative sequence	The familiar topics are taught before unfamiliar ones.
Relationships between objectives	The sequencing is done through a dependent or supportive relationship between the LOs.
Part to whole	A set of LOs (the parts) are taught and mastered before the sets

are combined and taught as a whole.

(Source: NAVEDTRA 130A, Volume I, 4-9-1 to 4-9-2)

Job Performance Order

In the job performance order method of sequencing, the learning objectives (LOs) are taught in the order in which the duties and tasks are performed. In other words, the sequence is the same as the job sequence.

Example:

- This sequencing method could be used when the goal of the course is to teach a gunner to use a weapon. The course sequence would follow such that the gunner learns to load, aim, and then fire the weapon.

(Source: NAVEDTRA 130A, Volume I, 4-9-1)

Chronological Order

In the chronological order sequencing method, the sequencing of the learning objectives (LOs) is done in a way that is consistent with the order in which the events occur in time.

Example:

- This sequencing method could be used when recruits are learning about the history of the major 20th century wars. The course would be sequenced such that recruits learn about World War I, then World War II, then the Korean War, Viet Nam, and finally the war to free Kuwait.

(Source: NAVEDTRA 130A, Volume I, 4-9-1)

Critical Sequence

Critical sequence orders the learning objectives (LOs) in terms of their relative importance. The most important LOs are taught before less important LOs.

Example:

- This sequencing method could be used, for example, in a First Aid course. The course sequence would be presented such that the course first addresses potentially fatal injuries, then permanently disabling injuries, and finally minor injuries. (Source: NAVEDTRA 130A, Volume I, 4-9-1)

Simple to Complex

A simple to complex sequence orders the learning objectives (LOs) in terms of increasing difficulty. Less difficult LOs are taught before the more difficult.

Example:

- This sequencing method could be used in a course on marine navigation methods. The sequence of the course would be established so that marine navigation based on buoys and landmarks is taught before navigation based on the location of the stars or the angle of the sun.

(Source: NAVEDTRA 130A, Volume I, 4-9-1)

Comparative Sequence

When the comparative sequencing method is used, learning objectives (LOs) that address familiar topics are taught before LOs that address unfamiliar topics.

Example:

- This sequencing method could be used in course in which submariners learn about different models of submarines. In this course, the content would be presented such that submariners would first study familiar American submarines before attempting to study less familiar foreign submarines.

(Source: NAVEDTRA 130A, Volume I, 4-9-1)

Relationships Between Objectives

When sequencing by the relationships between learning objectives (LOs) is used, sequencing is done through either dependent or supportive relationships between objectives.

In a **dependent relationship**, to master one LO, other LOs must be mastered first. This calls for sequencing the LOs so that prerequisite learning objectives are taught first.

Example:

1. Recognize injuries caused by dangerous marine life in accordance with the U.S. Navy Diving Manual, Volume 1, NAVSEA 0994-LP-001-9010, appx. G.
2. Apply first aid for injuries received from dangerous marine life in accordance with the U.S. Navy Diving Manual, Volume 1, NAVSEA 0994-LP-001-9010, appx. G.

(Source: NAVEDTRA 130A, Volume II, A-2-8)

There is a dependent relationship between the two LOs because the student must be able to recognize types of injuries caused by dangerous marine life (such as puncture wounds, stings, abrasions) in order to apply appropriate first aid to those injuries. The first LO (Recognize injuries caused by dangerous marine life...) is a prerequisite for the second LO (Apply first aid for injuries received from dangerous marine life...).

In a **supportive relationship**, the learning resulting from one LO transfers to another LO, and makes mastery of the second LO easier. These learning objectives should be sequenced and taught as closely together as possible.

Example:

1. Collect ambient air samples in accordance with the U.S. Navy Diving Manual, Volume 1, NAVSEA 0994-LP-001-9010, appx. I.
 2. Collect source air samples in accordance with the U.S. Navy Diving Manual, Volume 1, NAVSEA 0994-LP-001-9010, appx. I.
- (NAVEDTRA 130A, Volume II, A-2-4)

These two LOs have a supporting relationship because the skill involved in collecting one form of air sample transfers to the skill of being able to collect the other type of sample. (Source: NAVEDTRA 130A, Volume I, 4-9-2)

Part to Whole

When the part to whole sequencing method is used, sets of LOs (the parts) are taught and mastered before the sets are combined and taught as a whole.

Example:

- The sequencing method could be used in a course in which Electronic Technicians learn about a Navy communication system. A communication system consists of two or more

units, each having its own separate function, arranged and interconnected to perform a circuit operation that cannot be performed by one of the individual units alone. In this course, the content would be presented such that Electronic Technicians would first study a component part, for example a receiver, before studying other parts. The course would then cover how these parts work together as a whole. (Source: NAVEDTRA 14088, 1-1 to 1-2)

How do I sequence the learning objectives for the course?

Follow the steps listed below:

1. [Review the terminal objectives for the course and select a sequencing methods or methods.](#)
2. [Sequence the terminal objectives.](#)
3. [Review the enabling objectives that are linked to the terminal objectives and select a sequencing method or methods.](#)
4. [Sequence the enabling objectives under each terminal objective.](#)
5. [Review list of sequenced learning objectives.](#)

1. Review the terminal objectives for the course and select a sequencing method or methods.

The major goal of sequencing terminal objectives (TOs) is to ensure that content is presented to students in a manner that is both logical and complete.

When selecting the sequencing method for the terminal objectives in a course, be sure to note that:

- A combination of sequencing methods can be used in a course. For example, the TOs in a course can be sequenced using a combination of both the “critical sequence” and the “relationship between objectives” sequencing methods. Use one or a combination of methods to sequence the TOs in logical teaching order.
- It is possible to reverse one of the sequencing methods. TOs may be ordered in reverse chronological order, or from least critical to most critical.

Consider the Course Mission Statement and goals of your course as a whole. Refer to each of the questions below in the context of your course. If one of the questions applies to your course, or a section of your course, select the sequencing method associated with that question for sequencing your TOs. Remember, it is possible that you will select more than one method to sequence the TOs in your course.

Question	Sequencing Method
Are students learning to perform a job that has a particular performance order?	Use the Job Performance Order sequencing method.
Are students learning content that has an inherent chronological (or reverse chronological) order to it?	Use the Chronological Order sequencing method.
Are the TOs for the course at varying levels of importance or criticality? Does the overall course goal present a rationale for structuring the TOs according to importance?	Use the Critical Sequence sequencing method.
Do the TOs have varying levels of complexity? Does the overall course goal present a rationale	Use the Simple to Complex sequencing method.

for structuring the TOs according to the levels of complexity?	
Do the TOs require students to learn a combination of both familiar and unfamiliar content?	Use the Comparative Sequence sequencing method.
Are the TOs related such that mastering one TO requires first mastering some of the other TOs?	Use the Relationships Between Objectives (dependent relationship) sequencing method.
Are the TOs related such that learning content associated with one TO transfers over to another TO and makes the mastery of the second objective easier?	Use the Relationship Between Objectives (supportive relationship) sequencing method.
Are the TOs related such that mastering all of the TOs (the whole) requires first mastering sets of individual TOs?	Use the Part to Whole sequencing method.

(Source: NAVEDTRA 130A, Volume I, 4-9-1 to 4-9-2)

2. Sequence the terminal objectives.

Sequence the terminal objectives (TOs) for the course by moving the TO tiles on the “Sequence TOs” screen until their order reflects the sequencing method or methods that you selected.

3. Review the enabling objectives that are linked to the terminal objectives and select a sequencing method or methods.

The major goal of sequencing enabling objectives (EOs) is to ensure that content is presented to students in a manner that is both logical and complete.

When determining the sequencing method for the enabling objectives, be sure to note that:

- A combination of sequencing methods can be used to sequence the EOs for a TO. Use one or a combination of methods to sequence the EOs in logical teaching order.
- It is possible to reverse one of the sequencing methods. For example, EOs may be ordered in reverse chronological order, or from least critical to most critical.

Consider the role of the EOs in the context of the terminal objectives for they support. Look at the questions that appear in the following table, and determine how each relates to your EOs. If one of the questions applies to one or more of your EOs, select the sequencing method associated with that question for sequencing your EOs. Remember, it is possible that you will select more than one sequencing method to sequence the EOs .

Question	Sequencing Method
Are students learning to perform a job that has a particular performance order?	Use the Job Performance Order sequencing method.
Are students learning content that has an inherent chronological (or reverse chronological) order to it?	Use the Chronological Order sequencing method.
Are the EOs for the course at varying levels of importance?	Use the Critical Sequence sequencing method.
Do the EOs have varying levels of complexity?	Use the Simple to Complex sequencing method.
Do the EOs require students to cover a	Use the Comparative Sequence

combination of both familiar and unfamiliar content?	sequencing method.
Are the EOs related such that mastering one EO requires first mastering some of the other EOs?	Use the Relationships Between Objectives (dependent relationship) sequencing method.
Are the EOs related such that learning content associated with one EO transfers over to another EO, and makes the mastery of the second EO easier?	Use the Relationship Between Objectives (supportive relationship) sequencing method.
Are the EOs related such that mastering all of the EOs (the whole) requires first mastering sets of individual EOs?	Use the Part to Whole sequencing method.

(Source: NAVEDTRA 130A, Volume I, 4-9-1 to 4-9-2)

4. Sequence the enabling objectives under each terminal objective.

Sequence the enabling objectives (EOs) under each terminal objective (TO) by moving the EO tiles on the “Sequence EOs for this TO” screen until their order reflects the sequencing method or methods that you selected.

5. Review list of sequenced learning objectives.

Review the entire list of sequenced learning objectives (terminal objectives and enabling objectives). If you click on the Preview/Print button, the “Charting a Course” system will generate a Sequence Report. Use the Quality √ to review the list of sequenced learning objectives.

What does a Sequence report look like?

Following is a sample Sequence report from the “Charting a Course” system.

<p>Charting a Course: Objectives Module</p> <p>SEQUENCE</p> <p>NAVY SCUBA DIVER A-433-0023A Date Modified: MM/DD/YYYY</p>

Terminal Objective(s):

- 7.0 APPLY underwater search techniques to CONDUCT inspection of major hull components in accordance with Underwater Work Techniques Manual, Vol. 2, while performing operations as a scuba diver. Observe applicable safety precautions.
- 4.0 PLAN open circuit SCUBA diving operations in accordance with U.S. Navy Diving Manual, Volume 1, NAVSEA 0994-LP-001-9010, Chapter 4.

Enabling Objective(s):

- 7.1 IDENTIFY the components of the ship's hull in accordance with the Underwater Work Techniques Manual, Volume 2.
- 7.2 DESCRIBE the stages of growth commonly found on underwater hulls in accordance with the NAVSHIPS Technical Manual, Waterborne Underwater Hull Clearing of Navy Ships, Chapter 081, and the Underwater Work Techniques Manual, Volume 2.
- 7.3 STATE the general contents of the Fouling Rating Scale, and the Paint Deterioration Rating Scale, in accordance with the NAVSHIPS Technical Manual Waterborne Underwater Hull Clearing of Navy Ships, Chapter 081.
- 7.4 DESCRIBE the fouling areas of hulls in accordance with the NAVSHIPS Technical Manual, Waterborne Underwater Hull Clearing of Navy Ships, Chapter 081.
- 4.13 IDENTIFY considerations that affect dive planning in accordance with U.S. Navy diving Manual, Volume 1, NAVSEA 0994-LP-001-9010, para. 4.2.
- 7.5 APPLY the specific safety precautions associated with underwater hull inspections in accordance with the U.S. Navy Diving Manual, Volume 1; the Underwater Work Techniques Manual, Volume 2; and the NAVSHIPS Technical Manual, Waterborne Underwater Hull cleaning of Navy Ships, Chapter 081.
- 7.6 PERFORM day and night underwater hull inspections in accordance with the NAVSHIPS Technical Manual and Underwater Work Techniques Manual, Volume 2.
- 7.7 PREPARE the ship's hull inspection report in accordance with the Diving Training Standards.

(Source: NAVEDTRA 130A, Volume II, A-3-15 to A-3-16)