CW Academy

FUNDAMENTAL Level CW Curriculum

Version 1.12.7

This document is ©July 2022
By CW Academy
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Revision Record

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2022 Sep – 1.8 Bob Carter WR7Q – minor corrections
2022 Sep – 1.9 Bob Carter WR7Q – corrected Word Speed on page 31
2022 Oct – 1.10 Bob Carter WR7Q – align with recent changes to the MCT website
2022 Oct – 1.11 Bob Carter WR7Q – change LCWO Word Training speed to 10-12 wpm
2022 Dec – 1.12 Bob Carter WR7Q – lower beginning sending CPM from 25 to 10
2022 Feb – 1.12.1 Bob Carter WR7Q – changed MCT session 9 day 3 from
                                   Basic to Fundamental
2023 Sep – 1.12.2 Bob Carter WR7Q – replaced 'effective speed' with 'Farnsworth' in headings,
                                   capitalized QTH, bolded session types, minor fixes
2023 Sep – 1.12.3 Bob Carter WR7Q – 'character speed' to 25wpm, settings in Word Training
2023 Sep – 1.12.4 Bob Carter WR7Q – transition from 3 character to 4, instead 5 in session 6
2024 Jan – 1.12.5 Bob Carter WR7Q – Sess 1 Day 3, chgd 10wpm to 25wpm, Ready-Made Lists
2024 Feb – 1.12.6 Bob Carter WR7Q – Session 8 Day 1 Copy 4 settings were reversed
2024 Feb – 1.12.7 Bob Carter WR7Q – Session 9 Day 3 Added missing 'S'

CW Academy Fundamental Level Curriculum

Introduction
Welcome to CW Academy and the Fundamental Level CW Class.

Course Overview
The Fundamental Level class accepts students who have learned the Morse code characters and can copy and receive Morse code at around 6 words per minute.
The class initially concentrates on Instant Character Recognition (ICR) and on sending well-formed Morse code characters. The goal of ICR is to reduce the amount of time between hearing the character and knowing what the character is to almost instantaneous. About half the time will be spent working on sending 'readable' Morse code.
The course is eight weeks long with about an hour of homework each day during the week. Students who diligently do the homework every day and participate in the twice-weekly class activities will be successful in reaching the class objectives.

Class Objectives
By the end of the course, students should be able to copy Morse code at about 10-13 words per minute and send 'readable' Morse code at about the same rate. The student should have a good grasp of Instant Character Recognition as well as be able to hear common two and three letter groups as words. The student should be ready to take the Intermediate Level CW Class, if desired. The student will also have experience using Morse code on the air and capable of having a QSO at about 10-13 words per minute.

Curriculum Organization
The daily homework assignments follow. Please note that the Advisor has the discretion to modify the homework assignments as needed to suit the class or individual student needs.
The homework is organized by days. Three days' worth of homework is due for each online session. In class the advisor will likely discuss the homework, your progress, and provide advice and encouragement.

CW Academy Fundamental Level Curriculum

Tools
The following tools and aids will be used during the semester:

NOTE: to open each link in a new tab, so you can retain your place in this document

Learn CW Online https://lcwo.net/ – Practice ICR, words, abbreviations, and call signs

LCWO ICR
  https://cwops.org/wp-content/uploads/2023/08/LCWO-ICR-Guidelines-1.3.pdf
   Recommend you read this document and understand the process for the Fundamental class

LCWO Video of LCWO ICR

NOTE: If you are 'typing' challenged, use MCT instead of LCWO. Not exactly the same, but close

Morse Code Trainer https://morsecode.world/international/trainer/trainer.html
  ICR and copy training

MCT Demo Video MCT ICR

Daily Scales
  https://cwops.org/wp-content/uploads/2022/03/Everyday-Send-Code-WR7Q-ver.-7.pdf
   You should download and print this document. You will use them almost every practice session

Voice Recorder
  You will need the ability to record and play back your sending. Most smart phones have a voice recorder function which works well to fill this requirement.

A Note about Speed
A Note about Speed. It is CW Academy's practice to send Morse code (to the students) at a character speed of 25wpm and use Farnsworth spacing to achieve a specific effective speed. Students need to be hearing the speed at a rate where it is difficult to count dits and dahs!! Additionally, the students are NOT expected to 'send' at this speed.

The Fundamental class starts at an effective speed of 6wpm and gradually increases to an effective speed of at least 10 to 12wpm by the end of the class.

Students should consider the effective speed (Farnsworth speed) for each practice session to be the 'minimum' speed. If the student is capable of a higher speed, the student should use that speed or higher.

Push yourself into the learning zone.
There is no learning in the comfort zone and there is no comfort in the learning zone!
(Carl Dierschow)

CW Academy Fundamental Level Curriculum

Session 1 Homework Day 1 Farnsworth speed: 6wpm	

COPY	SEND

Send 1

Send the *'Daily Scales' Warm Up*

The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed. That would be one character every two seconds. Send the following:

EEEEE TTTTT IIIII MMMMM SSSSS OOOOO HHHHH 00000 55555

AAAAA NNNNN UUUUU DDDDD VVVVV BBBBB 44444 66666

Get into the habit of doing a warmup at the beginning of each practice session. The objective is to send the five-character group correctly. If you make an error, start that group over again

Copy 1

Open lcwo.net in your browser and sign up for an account. With an account you will be able to see your progress during the eight weeks of the class.

Once you have logged into your account, click on 'CW Settings' under 'Account' in the left column. Click on the underlined word 'Change' to go to the 'Change CW Settings' page
Change the parameters to:
Character Speed: 25wpm (always use this setting)
Effective Speed: 6wpm
Extra Word Spacing: 0 (or more as needed)
Tone: 600 Hz (or your preference)
CW Player: jscwlib
No transmission prefix / suffix
Start Delay (seconds): 2
Group length: 2 fixed
Click on the Submit button
Next click on '**Code Groups**' in the left column under 'Speed Practice'
Change mode to '**letters**' and the duration to 1 minute. Do NOT select Use REAL speed
Click the 'Play' button. Type in each character as you hear it. After each group click 'Enter'
At the end of 1 minute, check your results. Make a note of all the characters you missed
Keep track of the number or errors your made, for future reference

In this exercise, do not 'ponder' over a character. If you don't know what it is, either play it again or just type a period (.) and go on to the next character. Be sure to press the Enter key after each two-letter group. Pondering will cause you to miss the next character….

Send 2

Set keyer speed at 25wpm character speed and send at 6wpm effective speed
Send your first name five times
Be deliberate with your character formation. At 6wpm you would send one character about every two seconds

Copy 2

Do a second one-minute session as described in Copy 1 above
Do a third one-minute session

Send 3

Send your call sign five times

Copy 3

Do a fourth one-minute session

You should now have four lists of characters that you missed. Combine this list into one list of characters that you missed practice those characters two or more times.
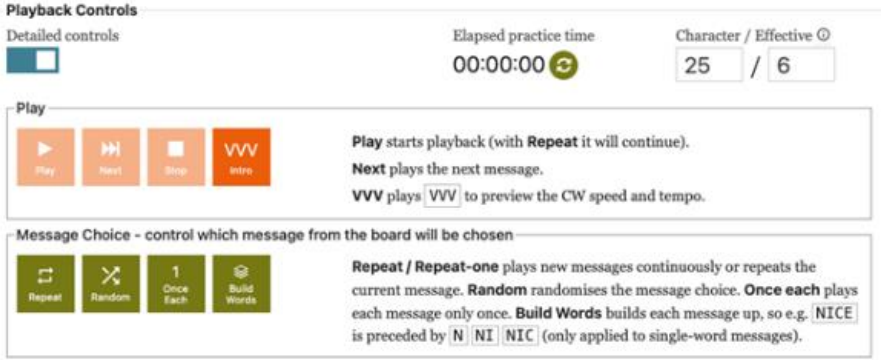
CW Academy Fundamental Level Curriculum

Session 1 Homework Day 2 - Farnsworth speed: 6wpm	
COPY	**SEND**
	Send 1
	From the 'Daily Scales' Warm Up
	The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group
	Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed (that would be one character every two seconds). Send the following:
	ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890
	Send in groups of five (or six) with space between each group. Concentrate on slow, deliberate sending with good character formation
Copy 1	
Using the LCWO instructions from Day 1, do two sessions of **Code Groups** for one minute each. Continue refining your list of characters that you miss more than once	
	Send 2
	Send each of the characters on your list of characters that you have missed more than once. Say the character and then send the character
	Go through the list twice
Copy 2	
In LCWO change your settings as follows: Character Speed: 25wpm Effective Speed: 6wpm Extra word spacing: 0 (or more as needed) Group length: 2 On the right side, check each of the letters on your list of characters that you have missed more than twice and Submit Select **Code Groups** Change the mode to '**Custom characters**' Run a one-minute code groups typing in the characters and pressing Enter after each group of 2 characters. Check your results Do this twice more, keeping track of the characters that you missed more than once	
	Send 3
	With keyer set to 6wpm, send your name five times paying attention to your character spacing and character formation.
Copy 3	
Do two more one-minute sessions of LCWO using the characters that you are missing more than once. Continue refining your list	

CW Academy Fundamental Level Curriculum

COPY	SEND
Session 1 Homework Day 3 - Farnsworth speed: 6wpm	

Send 1

From the *'Daily Scales' Warm Up*

The objective is to send each group of characters correctly. If a mistake is made start over for that group

Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed (that would be one character every two seconds). Send the following:

THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 70364 51289

Copy 1

Modify your LCWO settings to the characters that you're continuing to miss more than once

Do two more one-minute sessions with only those characters

Send 2

With your keyer set at 25wpm and at an effective speed of 6wpm, send your name followed by your call sign, five times in this fashion:

(NAME) DE (CALL SIGN)

Copy 2

Reset LCWO to the settings for Day 1, Copy 1. Run three one-minute sessions an refine your list of difficult characters

Send 3

Using the voice recorder on your smart phone or on your computer, record yourself sending your name de your call sign, five times

Play back the recording and analyze your sending

Are the characters well formed? That is, are you sending a 'Y' and not 'TW'? Check your spacing when sending a character and between words. Can you copy your own sending?

You have finished the homework for the first 'class' session. Be prepared to report in class your code group score. Note any questions so you'll remember to ask them in class. If you have a question, it's likely someone else has the same question

CW Academy Fundamental Level Curriculum

COPY	SEND

<div align="center">

Session 2 Homework Day 1
Farnsworth speed: 6wpm

</div>

Send 1

Send the 'Daily Scales' Warm Up

The objective is to send each group of 5 characters correctly. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed. That would be one character every two seconds. Send the following:

EEEEE TTTTT IIIII MMMMM SSSSS OOOOO HHHHH 00000 55555

AAAAA NNNNN UUUUU DDDDD VVVVV BBBBB 44444 66666

Get into the habit of doing a warmup at the beginning of each practice session.

Copy 1

Work on your 'difficult letters' list. Set up LCWO with those letters plus 3-5 more common letters. Run two sessions of one-minute each and revise your list

Send 2

Set your keyer to 6wpm and send your list of difficult letters. Say out loud each letter as you send it. Concentrate on good character formation and good pacing … which should be at about one letter every two seconds

Copy 2

Reset LCWO mode to 'letters' so it will use all the letters. Do three more one-minute sessions, making a new list of characters that you miss more than once

Send 3

Send your call sign five times without a mistake. If you make a mistake, stop and start again. You are trying to send your call sign five times without an error.
If, after four tries, you haven't succeeded in sending your call sign five times in a row without a mistake, stop and go on to Copy 3

Copy 3

Using the Word List Trainer https://morsecode.world/international/trainer/trainer.html set up as described:
Make sure the 'Ready-Made Lists' tab is selected
Under 'Word list' click the down arrow on the right side of the box and select 'CW Academy Fundamental: 2 letter words'
Read the instructions under 'Sound Board'. Be sure that 'Board Visibility' and 'Text Visibility' are turned off.
Click 'Enable All' so that all the controls under 'Playback Controls' are available
Under 'Playback Controls' the switch for 'Detailed controls' should be turned on. Set 'Character' to 25wpm and 'Effective' to 6wpm. This section should look like this:

Note the 'Message Choice' options and set 'Repeat' as desired
Play the first word. Say each letter out loud as you hear it. Don't ponder over the letter or you will miss the next letter
After both letters are played, what is the word?
Click 'Next' to play the next two letters. Say each letter out loud as you hear it. After both letters are played, what is the word?
Continue to press 'Next' until all 34 words have been played

CW Academy Fundamental Level Curriculum

COPY	SEND

Send 1

From the *'Daily Scales' Warm Up*

The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group

Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed (that would be one character every two seconds). Send the following:

ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890

Send in groups of five (or six) with space between each group. Concentrate on slow, deliberate sending with good character formation

Copy 1

Again, back to LCWO. Set the mode to 'letters' and do three sessions of one minute each. Start a new list of letters that you miss more than once.

Send 2

Use the Word List Trainer   https://morsecode.world/international/trainer/trainer.html

Click the 'Sending' tab

Set the session to 7/13

Click Play and listen to the word

Using your key, send the word mimicking what you heard

Click 'Next' and do the next word

Copy 2

Do another two sessions of one minute each of LCWO. Refine your list of letters missed more than once. Compare that new list to the previous list and note your improvement

Send 3

Send your name and location (QTH) five times. Many amateur radio operators shorten their name to 3-4 letters. If you QTH is complicated and difficult to send, then use a nearby city and send 'nr (nearby city)', where 'nr' is an abbreviation for 'near'. For example: 'nr albany ny'.

It is common practice to send your name and QTH twice. For example:

john john QTH is nr albany ny albany ny

You should practice sending your name, qth, and call sign until you can send them without making a mistake. It is embarrassing to have to correct your own name on the air….

CW Academy Fundamental Level Curriculum

Session 2 Homework Day 3 - Farnsworth speed: 6wpm	
COPY	**SEND**

<table>
<tr><td></td><td>Send 1
From 'Daily Scales' Warm Up send the following:

AAA BBB CCC DDD EEE FFF GGG HHH III JJJ KKK LLL MMM

NNN OOO PPP QQQ RRR SSS TTT UUU VVV WWW XXX YYY ZZZ

If you make a mistake, start the group over again. If you make a second mistake in the same group, note the letters you are having trouble with, and continue through the alphabet
Sending well-formed characters at 6wpm should take about 4 minutes to send the letters above
You, like all the other students, can send faster than you can copy. Be deliberate and SLOW DOWN</td></tr>
<tr><td colspan="2">Copy 1
Do three more sessions of one minute in LCWO in the mode 'letters'. Combine your results with the list from yesterday</td></tr>
<tr><td></td><td>Send 2
Send your call sign five times without making a mistake. If you make a mistake, stop, take a breath, and start again. If after four tries you haven't been able to send your call sign five times in a row correctly, stop and go on to the next activity</td></tr>
<tr><td colspan="2">Copy 2
Do three more sessions of one minute in LCWO in the mode 'letters'. Combine your results with the list from Copy 1</td></tr>
<tr><td></td><td>Send 3
Send your name five times without making a mistake. If you make a mistake, stop, take a breath, and start again. If after four tries you haven't been able to send your name five times in a row correctly, stop and go on to the next activity</td></tr>
<tr><td colspan="2">Copy 3
Set LCWO up in 'Custom' mode and select the letters from your list of letters you have gotten wrong more than once in the past two days. Do several one-minute sessions and take a break between them. Cross the letters off you list that you feel you have mastered</td></tr>
</table>

CW Academy Fundamental Level Curriculum

COPY	SEND

Session 3 Homework Day 1
Farnsworth speed: 7wpm

Send 1

Send the 'Daily Scales' Warm Up

The objective is to send each group of 5 characters correctly. If a mistake is made start over for that group

Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds. Send the following:

EEEEE TTTTT IIIII MMMMM SSSSS OOOOO HHHHH 00000 55555

AAAAA NNNNN UUUUU DDDDD VVVVV BBBBB 44444 66666

Get into the habit of doing a warmup at the beginning of each practice session

Copy 1

Work on your 'difficult letters' list. Set up LCWO with those letters plus 3-5 more common letters. Run two sessions of one-minute each and revise your list

Send 2

Set your keyer to 25wpm and send your list of difficult letters. Say out loud each letter as you send it. Concentrate on good character formation and good pacing … which should be at about one letter every two seconds

Copy 2

Reset LCWO mode to '**letters**' so it will use all the letters. Do three more one-minute sessions, making a new list of characters that you miss more than once

Send 3

Send your name five times without a mistake. If you make a mistake, stop, rewind, and start again trying to send your name five times without an error.

If, after four tries, you haven't succeeded in sending your name five times in a row without a mistake, stop and go on to Copy 3

Copy 3

Listen to QSO 102 at 7wpm: https://cwops.org/wp-content/uploads/2022/07/qso-07.102.mp3

Listen and copy as best you can all the way through without stopping

Fill out the following information as best you can. Then listen to the QSO as many times as needed to fill in any missing information:

CQer Call Sign_____   Answerer Call Sign _____

CQer Name _____   Answerer Name _____

CQer RST Sent _____   Answerer RST Sent _____

CQer QTH _____   Answerer QTH _____

CQer WX Rpt _____   Answerer WX Rpt _____

Keep this sheet handy and discuss with your advisor at your next video conference meeting

CW Academy Fundamental Level Curriculum

COPY	SEND
Session 3 Homework Day 2 - Farnsworth speed: 7wpm	

Send 1

From the 'Daily Scales' Warm Up

The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group

Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed (that would be one character every two seconds). Send the following:

ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890

Send in groups of five (or six) with space between each group. Concentrate on slow, deliberate sending with good character formation

Copy 1

Set LCWO up in '**Custom**' mode. Check all the letters from yesterday's Copy 2 plus three more. Do three one-minute sessions making note of the characters missed.

Send 2

Do the 'Daily Scales' Warm Up

Keyer speed at 25wpm character speed with good Farnsworth spacing for 7wpm effective speed

Copy 2

Set LCWO up in '**Custom**' mode. Check four of the difficult letters only. Do three one-minute sessions with just those four characters

Send 3

Send your call sign five times without a mistake. If you make a mistake, stop, rewind, and start again trying to send your call sign five times without an error.

If, after four tries, you haven't succeeded in sending your call sign five times in a row without a mistake, stop and go on to Copy 3

Copy 3

Set LCWO up in '**Custom**' mode. Check a different four of the difficult letters. Do three one-minute sessions with just those four characters

CW Academy Fundamental Level Curriculum

COPY	SEND
Session 3 Homework Day 3 - Farnsworth speed: 7wpm	

Send 1

From the *'Daily Scales' Warm Up*

The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed (that would be one character every two seconds). Send the following:

ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890

Send in groups of five with space between each group. Concentrate on slow, deliberate sending with good character formation

Copy 1
Continue working on your difficult letters, four at a time. Set LCWO up in '**Custom**' mode. Check four of the difficult letters only. Do three one-minute sessions with just those four characters

Send 2

From the 'Daily Scales' Warm Up
Keyer speed at 25wpm character speed with good Farnsworth spacing for 7wpm effective speed
Send the first two lines of the 'Drill'

Copy 2
If there are more difficult characters, do the same with those as outlined in Copy 1. Otherwise, set LCWO up for letters and do three one-minute sessions. Start a new list of characters missed more than once

Send 3

Using the Word List Trainer   https://morsecode.world/international/trainer/trainer.html
Click on the 'Sending' tab
Set the session to 8/13
Click Play and listen to the word
Using your key, send the word mimicking what you heard
Click 'Next' and do the next word

Copy 3
Do two more LCWO sessions on **letters**. Continue to revise your list from Copy 2

CW Academy Fundamental Level Curriculum

Session 4 Homework Day 1 Farnsworth speed: 7wpm	
COPY	**SEND**

COPY	**SEND**
	Send 1 The objective is to send each group of characters correctly. If a mistake is made start over for that group Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds Send the following pangram twice: **WALTZ JOB VEXED QUICK FROG NYMPHS**
Copy 1 Using LCWO, set up to run a session of '**Code Groups**' Character Speed: 25wpm Effective Speed: 7wpm **letters** Groups of 3 Time: 2 minutes Run one session of two minutes (15-16 groups). Check your results and revise your list of difficult characters	
	Send 2 Send the following pangram twice. If a mistake is made start over for that word. Keyer speed at 25wpm character speed and send at 7wpm effective speed. Send the following: **GO, LAZY FAT VIXEN. BE SHREWD, JUMP QUICK**
Copy 2 Using LCWO **Code Groups**, run a two-minute session of 3 letter groups at an effective speed of 7wpm. Check your results and update the list of characters missed. You should have two columns of characters missed, one from the first session and one from the second session	
	Send 3 Send your call sign 5 times in a row correctly. If you make a mistake, start the five time again. If after 4 tries you're unable to send your call sign five times in a row correctly, stop and go on to the Copy exercise
Copy 3 Using LCWO **Code Groups**, run two two-minute sessions of 3 letter groups as done earlier. Check your results and add to your list of difficult characters	

CW Academy Fundamental Level Curriculum

COPY	SEND

Session 4 Homework Day 2 - Farnsworth speed: 7wpm

Send 1

From the 'Daily Scales' Warm Up

The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds. Send the following:

ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890

ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890

Slow down and be very deliberate about character formation

Copy 1
Using LCWO, set up to run a session of '**Code Groups**'
Character Speed: 25wpm
Effective Speed: 7wpm
Custom from your list of difficult characters

Groups of 3
Time: 2 minutes
On the right side of the '**Change CW settings**' page, unclick all the letters EXCEPT for the ones on your list from Day 1.
Then turn on an additional 5 characters of your choice. Run two two-minute sessions, checking your results after each run.
Mark your list of difficult characters as to which ones are still problematic

Send 2

From the 'Daily Scales' Warm Up

Keyer speed at 25wpm character speed with good Farnsworth spacing for 7wpm effective speed. Send the following:

BENS BEST BENT WIRE   BENS BEST BENT WIRE   BENS BEST BENT WIRE

BENS BEST BENT WIRE   BENS BEST BENT WIRE   BENS BEST BENT WIRE

Copy 2
Using LCWO **Code Groups**, as set up in Copy 1, run two more two-minute sessions. Check your results after each run.
Mark your list of difficult characters as to which ones are still problematic

Send 3
Send your call sign five times in a row correctly. Again, stop after 4 tries if unable to send five times in a row correctly

Copy 3
Using LCWO **Code Groups** as set up in Copy 1, run one more two-minute session. Check your results and update your list of difficult characters…that is, characters you missed twice or more in the five sessions

CW Academy Fundamental Level Curriculum

Session 4 Homework Day 3 - Farnsworth speed: 7wpm	
Update your list of difficult characters	
COPY	**SEND**

Send 1

Send the following pangram twice. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds
Send the following:

HOW RAZORBACK JUMPING FROGS CAN LEVEL SIX PIQUED GYMNASTS

Copy 1

Using LCWO, set up to run a session of '**Code Groups**'
Character Speed: 25wpm
Effective Speed: 7wpm
Custom; select letters from your list of difficult characters
Groups of 3
Time: 2 minutes
Run one session of two minutes (15-16 groups). Check your results and revise your list of difficult characters

Send 2

Send the following pangram twice. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds
Send the following:

THE JOB REQUIRES EXTRA PLUCK AND ZEAL FROM EVERY YOUNG WAGE EARNER

Copy 2

Using LCWO **Code Groups**, set up to run **Custom** using letters from your list of difficult letters. Run a two-minute session of 3 letter groups at an effective speed of 7wpm. Check your results and update the list of characters missed

Send 3

Send your call sign 5 times in a row correctly. If you make a mistake, start the five time again. If after 4 tries you're unable to send your call sign five times in a row correctly, stop and go on to the Copy exercise

Copy 3

Listen to QSO 106 at 7wpm: https://cwops.org/wp-content/uploads/2022/07/qso-07.106.mp3
Listen and copy as best you can all the way through without stopping
Fill out the following information as best you can. Then play the qso again as often as needed to fill in the rest of the information:

CQer Call Sign_____   Answerer Call Sign _____

CQer Name _____   Answerer Name _____

CQer RST Sent _____   Answerer RST Sent _____

CQer QTH _____   Answerer QTH _____

Now listen to the QSO a second time and fill in any missing information

CW Academy Fundamental Level Curriculum

<table>
<tr><td colspan="2" align="center">Session 5 Homework Day 1
Farnsworth speed: 7wpm</td></tr>
<tr><td>COPY</td><td align="right">SEND</td></tr>
<tr><td colspan="2">

<div align="right">

Send 1

Do the *'Daily Scales' Warm Up*

Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed

</div>

</td></tr>
<tr><td colspan="2">

Copy 1
Run a three-minute session of '**Code Groups**'
Character Speed: 25wpm
Effective Speed: 7wpm
Mode: **letters**
Groups of 3
Time: 3 minutes
Start a new list of difficult letters

</td></tr>
<tr><td colspan="2">

<div align="right">

Send 2

Practice sending your name and a signal report

</div>

<div align="center">

NAME IS (YOUR NAME) UR RST 5NN <BK>

</div>

<div align="right">

Send this several times until you've sent it three times in a row without a mistake

</div>

</td></tr>
<tr><td colspan="2">

Copy 2
Do another three-minute session of '**Code Groups**' as in Copy 1 above and revise your list of difficult letters. That is, remove characters you are now getting right and add any new characters you're missing more than once

</td></tr>
<tr><td colspan="2">

<div align="right">

Send 3

Practice sending your name and your QTH

</div>

<div align="center">

NAME IS (YOUR NAME) ES QTH IS (YOUR QTH)

</div>

<div align="right">

Send this several times until you've sent it three times in a row without making a mistake

</div>

</td></tr>
<tr><td colspan="2">

Copy 3
Do a three-minute session of '**Code Groups**', figures only
Note the figures that you are missing more than once

</td></tr>
</table>

CW Academy Fundamental Level Curriculum

COPY	SEND
Session 5 Homework Day 2 - Farnsworth speed: 7wpm	

Send 1

Do the 'Daily Scales' Warm Up

Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed

Copy 1

For a different exercise, do two sentences of LCWO '**Plain Text Training**'

Character Speed: 25

Effective Speed: 7

Do one sentence and check results

Do a second sentence and check results

How did you do? If this was quite difficult, drop the effective speed to 6wpm (or even 5wpm) temporarily and try again

Send 2

You should now have a 'help sheet' of phrases for a QSO. If not make one up using these phrases:

NAME IS (YOUR NAME)
UR RST 5NN
QTH IS (YOUR QTH)
RIG IS (YOUR RADIO)
ANT IS (YOUR ANTENNA)
HAM SINCE (YEAR LICENSED)

Send the list of phrases twice while reading from your 'help sheet'

Copy 2

Try another two sentenced of LCWO '**Plain Text Training**'

Can you do 80% at 7wpm?

Send 3

Send Two pangrams on the CWops website: CW Academy ➔ Additional Info & Practice Material for Students

Exaggerate the spacing between words so it is clear when one word ends, and the next word starts

Record your sending and play it back

Critique your smoothness and character formation

Copy 3

Back to LCWO '**Code Groups**'

Set up for figures at 25wpm character speed and 7wpm effective speed

Do two one-minute sessions of 3-letter groups

CW Academy Fundamental Level Curriculum

Session 5 Homework Day 3 - Farnsworth speed: 7wpm	
COPY	**SEND**

Pay particular attention to good character formation when sending. For instance,
be sure that you are sending an **'F'** and not **'I N'**
When copying, watch for the characters you are having difficulty recognizing
You can change one of the Copy exercises to doing a '**Custom**' code groups using only your difficult characters

Send 1

From the 'Daily Scales' Warm Up
The objective is to send each group of characters correctly. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds
Send the following:

THE JULY SUN CAUSED A FRAGMENT OF BLACK PINE WAX TO OOZE ON THE VELVET QUILT

Copy 1

Using LCWO, set up to run a session of '**Code Groups**'
Character Speed: 25wpm
Effective Speed: 7wpm
letters
Groups of 3
Time: 2 minutes
Run one session of two minutes (15-16 groups). Check your results and make a list of characters missed

Send 2

Send the following pangram twice. If a mistake is made start over for that group
Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds
Send the following:

THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 70364 51289

THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 70364 51289

Copy 2

Using LCWO **Code Groups**, run a two-minute session of 3 letter **Custom** groups using your difficult letters at an effective speed of 7wpm. Check your results and update the list of characters missed

Send 3

Using the Word List Trainer https://morsecode.world/international/trainer/trainer.html
Click the Sending' tab
Set the session to 9/13
Set the effective speed to 7wpm
Click Play and listen to the word
Using your key, send the word mimicking what you heard
Click 'Next' and do the next word

Copy 3

Repeat Copy 2

CW Academy Fundamental Level Curriculum

<table>
<tr><td colspan="2" align="center">Session 6 Homework Day 1
Farnsworth speed: 8wpm</td></tr>
<tr><td>COPY</td><td align="right">SEND</td></tr>
<tr><td></td><td align="right">Send 1
From the <i>'Daily Scales' Warm Up</i>
Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the first two lines of the Warmup Daily Scales</td></tr>
<tr><td>Copy 1
Run LCWO Code Groups
2-minute session, letters
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Start a new list of difficult characters</td><td></td></tr>
<tr><td></td><td align="right">Send 2
From the 'Daily Scales' Warm Up
Keyer speed at 25wpm character speed and send at 8wpm effective speed
Send the first two lines</td></tr>
<tr><td>Copy 2
Run LCWO Code Groups twice
2-minute session, letters
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
 characters
Update your list of difficult characters</td><td></td></tr>
<tr><td></td><td align="right">Send 3
Practice sending the following pangram:

PACK MY BOX WITH FIVE DOZEN LIQUOR JUGS

Send the pangram 5 times using good 8wpm pacing and error correction</td></tr>
<tr><td></td><td align="right">Send 4
Send your name and QTH five times using good 8wpm pacing and error correction:

NAME IS (YOUR NAME) (YOUR NAME) <BT> QTH HR (YOUR QTH) (YOUR QTH)</td></tr>
<tr><td colspan="2">Copy 3
Run LCWO Code Groups for two sessions
2-minute session, Custom characters
Select from the Change CW Settings only those characters from the earlier LCWO sessions then add five more random characters and figures
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Check your results and note characters you missed</td></tr>
</table>

CW Academy Fundamental Level Curriculum

Session 6 Homework Day 2 - Farnsworth speed: 8wpm	
COPY	**SEND**

Send 1
From the 'Daily Scales' Warm Up

Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the first two lines

Copy 1
Run LCWO **Code Groups**

2-minute session**, figures**
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Update your list of difficult figures

Send 2
From the 'Daily Scales' Warm Up

Keyer speed at 25wpm character speed with good Farnsworth spacing for 8wpm effective speed. Send the letters of the alphabet, each character repeated 3 times. For example:

AAA BBB CCC DDD EEE …

Copy 2
Run LCWO **Code Groups** twice

2-minute session**, figures**
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Update your list of difficult figures

Send 3
Practice sending the following:

JAMES LOVED HIS CAR <BT>
IT WAS FAST AND A PLEASURE TO DRIVE.

HE WISHED HE COULD SPEND THE ENTIRE DAY
DRIVING HIS NEW CAR BUT THAT WOULD NOT BE POSSIBLE.

JAMES SADLY PARKED THE CAR AND WENT TO HIS OFFICE.

Send using good 8wpm pacing and error correction

Copy 3
Run LCWO **Code Groups** for two sessions
2-minute session, **Custom characters** (choose from your list of difficult figures)
Select from the Change CW Settings only those figures from the earlier LCWO sessions then add two more random figures
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Check your results and note characters you missed

CW Academy Fundamental Level Curriculum

Session 6 Homework Day 3 - Farnsworth speed: 8wpm	
COPY	**SEND**

Send 1

From the 'Daily Scales' Warm Up

Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed. Send the first two line

Copy 1

Run LCWO **Code Groups** twice

2-minute session, **mixed characters**

Character Speed: 25wpm

Effective speed: 8wpm

Set Extra Word Spacing to 2 (give yourself a bit more time between groups)

Set Start Delay at 2 seconds

Groups of 4 characters

Update your list of difficult characters

Send 2

Do the 'Daily Scales' Warm Up

Keyer speed at 25wpm character speed with good Farnsworth spacing for 6wpm effective speed. Send the alphabet repeating each letter three times. For example:

AAA BBB CCC DDD EEE …

Copy 2

Run LCWO **Code Groups** for two sessions

2-minute session, **Custom characters**

Select from the Change CW Settings only those characters from the earlier LCWO sessions

then add five more random characters and figures

Same settings

Check your results and note characters you missed.

Send 3

Send your name and QTH five times using good 6wpm pacing and error correction:

NAME IS (YOUR NAME) (YOUR NAME) <BT>

QTH HR (YOUR QTH) (YOUR QTH)

Copy 3

Using LCWO Word training, set up as follows:

Speed:	8 ▾ WPM	
min. Character Speed:	25 ▾ WPM	
Characters from lesson:	40 ▾	
Tone:	● 600 ▾ Hz	
	○ random (500-900Hz)	
Language / Collection:	cw - CW abbreviations (Q codes)	
	de - Deutsch	
	de - Deutsch (Allgemein)	
	de - Deutsch (Amateurfunkbegriffe)	
	en - English	
	Hold down Shift while clicking to select multiple entries.	
Maximum length (letters):	3	
Simplify characters:	☐	
Fixed speed:	☑	
Skip automatically after 5 seconds:	☐	
Start		

Start and run the list of Q codes. Each group will start with 'q'.

Send 4

Send the following pangram three times:

THE FIVE BOXING WIZARDS JUMP QUICKLY

Followed by:

BENS BEST BENT WIRE   BENS BEST BENT WIRE   BENS BEST BENT WIRE

CW Academy Fundamental Level Curriculum

<table>
<tr><td colspan="2" align="center">Session 7 Homework Day 1
Farnsworth speed: 8wpm</td></tr>
<tr><td>COPY</td><td align="right">SEND</td></tr>
<tr><td></td><td align="right">Send 1
Do the <i>'Daily Scales' Warm Up</i>
Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the entire Warm Up</td></tr>
<tr><td colspan="2">Copy 1
Note the speed increase to 8wpm effective speed
Run LCWO Code Groups
1-minute session, letters
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Run the 1-minute session, check results, and repeat three times</td></tr>
<tr><td></td><td align="right">Send 2
Do the 'Daily Scales' Warm Up
Keyer speed at 25wpm character speed and send at 8wpm effective speed
Send the last two lines, including the pro signs</td></tr>
<tr><td colspan="2">Copy 2
Run LCWO Code Groups
1-minute session, figures
Same settings
Run the 1-minute session, check results, and repeat three times</td></tr>
<tr><td></td><td align="right">Send 3
Send your side of a QSO:

<div align="center">UR SIG 5NN
NAME IS (YOUR NAME TWICE)
QTH IS (YOUR QTH TWICE)
RIG IS (YOUR RADIO) RUNNING (POWER)
CUL 73 73</div>

pay attention to pacing and exaggerate spacing between words</td></tr>
<tr><td colspan="2">Copy 3
Do a set of 'Call sign Training'. Filter out the difficult call signs. Start at 8wpm and set your preference for the maximum speed:

Speed:	8 ∨ WPM
min. Character Speed:	25 ∨ WPM
max. Speed:	10 ∨ WPM
Fixed speed*:	☐
Tone:	○ 600 ∨ Hz ● random (500-900Hz)
Filter callsigns:	Filter long calls (like DL60DARC) ∨
Stop on error:	☐
Blind mode:	☐
	Start

* For training; makes scores ineligible for the highscore list.</td></tr>
</table>

CW Academy Fundamental Level Curriculum

Session 7 Homework Day 2 - Farnsworth speed: 8wpm	
COPY	**SEND**
	Send 1 Do the *'Daily Scales' Warm Up* Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the entire Warmup
Copy 1 Using LCWO, do a session of '**Word training**' using CW abbreviations and check your results Repeat by doing another '**Word training**' session	
	Send 2 From the 'Daily Scales' Warm Up Keyer speed at 25wpm character speed with good Farnsworth spacing for 8wpm effective speed Send each letter of the alphabet and each number three times. For example: **AAA BBB CCC DDD EEE… 111 222 333…**
Copy 2 Using LCWO, do a session of '**Word training**' using CW abbreviations and check your results Repeat by doing another '**Word training**' session	
	Send 3 Using a magazine or newspaper, send several sentences Record your sending and play it back Can you copy what you sent? Note what you need to improve
Copy 3 Do an LCWO session of '**Word training**' using CW abbreviations. Uncheck 'fixed speed' and allow the speed to increase or decrease. Note the speed you ended	

CW Academy Fundamental Level Curriculum

COPY	SEND
	Send 1 *Do the 'Daily Scales' Warm Up*
Copy 1 Run LCWO **Code Groups** 1-minute session, **letters** Character Speed: 25wpm Effective speed: 8wpm Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 4 characters Run the 1-minute session, check results, and repeat three times	
	Send 2 Do the 'Daily Scales' Warm Up
Copy 2 Run LCWO **Code Groups** 1-minute session, **figures** Character Speed: 25wpm Effective speed: 8wpm Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 4 characters Run the 1-minute session, check results, and repeat three times	
	Send 3 Using the Word List Trainer https://morsecode.world/international/trainer/trainer.html Select 'Sending' tab Set the session to 10/13 Set the Farnsworth speed to 8wpm Click Play and listen to the word Using your key, send the word mimicking what you heard Click 'Next' then 'Play' to do the next word Click 'Next' and do the next word
Copy 3 Run a session of LCWO **call sign training**	

Session 7 Homework Day 3 - Farnsworth speed: 8wpm

CW Academy Fundamental Level Curriculum

COPY	SEND

	Send 1
	Do the *'Daily Scales' Warm Up*
	Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed.

Copy 1
Run LCWO **Code Groups**
1-minute session, **mixed characters**
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Run the 1-minute session, check results, and repeat three times

	Send 2
	The practice today is to begin working on going from your head to the key without first writing it down.
	Think of a favorite song, poem, story, or nursery rhyme
	Send it with your eyes closed. Don't worry about error correction, just send it as best you can

Copy 2
Do 'Copy 1' again … three one-minute sessions

| | **Send 3** |
| | Do 'send 2' again, this time using error correction |

Copy 3
Run LCWO **Code Groups**
3-minute session, **letters**
25wpm character speed. Set your effective speed to at least 8wpm
Groups of 4 characters
Run the session and check your results

	Send 4
	Do 'send 2' again with error correction. Record what you sent and play it back.
	Can you copy what you sent?
How is the character formation and pacing?	

Copy 4
Do a set of '**call sign training**'
Start at 8wpm effective speed and set 10 or 12 as the max speed. Filter out the difficult call signs.

Speed:	8 ▾	WPM
min. Character Speed:	25 ▾	WPM
max. Speed:	10 ▾	WPM
Fixed speed*:	☑	
Tone:	◉ 600 ▾ Hz	
	○ random (500-900Hz)	
Filter callsigns:	Remove long calls and slashed calls (e.g. PA/DJ1YFK/P) ▾	
Stop on error:	☐	
Blind mode:	☐	
Start		

* For training; makes scores ineligible for the highscore list.

CW Academy Fundamental Level Curriculum

COPY	SEND
Session 8 Homework Day 2 - Farnsworth speed: 8wpm	

<table>
<tr><td></td><td>Send 1
Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed</td></tr>
<tr><td>Copy 1
Run LCWO Code Groups
1-minute session, letters
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Run the 1-minute session, check results, and repeat three times</td><td></td></tr>
<tr><td></td><td>Send 2
Send at an effective speed of at least 8wpm the things that are around you
Look at the thing and send it. No writing it down first
Send at least 15 items</td></tr>
<tr><td>Copy 2
Run LCWO Word training
Speed: 8wpm
Min Character Speed: 25wpm
Characters from lesson 40
English words
Maximum length: 3
Fixed speed</td><td></td></tr>
<tr><td></td><td>Send 3
For this short session you'll send a list of common two-letter words. The list:

BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO

Send the list through one time without stopping
Then send the list a second time with error correction as needed</td></tr>
<tr><td>Copy 3
Run LCWO Word training
Speed: 8wpm
Min Character Speed: 25wpm
Characters from lesson 40
English words
Maximum length: 3
Uncheck fixed speed</td><td></td></tr>
</table>

CW Academy Fundamental Level Curriculum

COPY	SEND
Session 8 Homework Day 3 - Farnsworth speed: 8wpm	

Send 1

Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed.

Copy 1
Run LCWO **Code Groups**
1-minute session, **figures**
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Do three 1-minute sessions

Send 2

Practice sending your call sign and name ten times in a row
Use error correction
If you heard your call sign in Morse Code while you were taking a nap, would it wake you up?

Copy 2
Run LCWO **Code Groups**
2-minute session, **figures**
Character Speed: 25wpm
Effective speed: 8wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 4 characters
Do at least one 2-minute session in preparation for 'Copy 3' below

Send 3

For this session you'll send a list of common two-letter words. The list:

BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO

Send the list through one time without stopping
Then send the list a second time with error correction as needed

Copy 3
Do a session of LCWO **Code Groups**
Effective speed: 8wpm (minimum … if you wish you can go higher)
figures
Five-character groups
Extra word spacing as needed
Run a 2-minute session

CW Academy Fundamental Level Curriculum

COPY	SEND

SEND

Send 1

Do the *'Daily Scales' Warm Up*

Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed

Copy 1

Run LCWO **Code Groups**

1-minute session, **letters**

Character Speed: 25wpm

Effective speed: 9wpm

Set Extra Word Spacing to 2 (give yourself a bit more time between groups)

Set Start Delay at 2 seconds

Groups of 5 characters

Run the 1-minute session and check results

If score is less than 80%, repeat until 80% or 5 times

Send 2

Using Morse Code Trainer   https://morsecode.world/international/trainer/trainer.html

Session

Choose your session and then practise the copying and sending segments.

|◄◄ Previous | 11/13 Session | ►►| Next |

Feedback

For *Copying* and *Random* activities, choose whether you want to hide the text, or see a flashcard displayed afterwards.

Show text   Flashcard   Thinking time ⓘ   75 %

Copying | **Sending** | Free-form | Random

Play a segment, then try to imitate it, exactly, using your key or keyer. Repeat it as many times as it takes to feel that you've got the correct word pattern.

k6rb de [your callsign] – ur rst 57n in [your town/city and state abbreviation] – name is [your name] btu k6rb de [your callsign] k

► Play | ❚❚ Pause | ■ Stop | |◄◄ Previous | 1/3 Segment | ►►| Next | ⇄ Repeat | ✕ Shuffle | ⬇ Download

Set the session to 11/13

Set your Farnsworth speed to at least 9wpm

In the text box, click on 'k6rb', listen to the code, then mimic what you heard

When you feel you are sending that call sign correctly, click on the next word and send it

Send what is indicated in the red text

Do at least the first of the three segments

28

CW Academy Fundamental Level Curriculum

Session 9 Homework Day - 2 Farnsworth speed: 9wpm	
COPY	**SEND**

Send 1
Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed

Copy 1
Run LCWO **Code Groups**
1-minute session, **letters**
Character Speed: 25wpm
Effective speed: 9wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Run the 1-minute session, check results, and repeat three times

Send 2
Send at an effective speed of at least 9wpm the things that are around you
Look at the thing and send it. No writing it down first
Send at least 15 items

Copy 2
Run LCWO **Plain Text Training**
Character Speed: 25wpm
Effective speed: 9wpm
English Proverbs
Run through 5 sentences

Send 3
Send the following pangrams:

JACK AMAZED A FEW GIRLS BY DROPPING THE ANTIQUE ONYX VASE <BT>

WE PROMPTLY JUDGED ANTIQUE IVORY BUCKLES FOR THE NEXT PRIZE <BT>

SIX BIG JUICY STEAKS SIZZLED IN A PAN AS FIVE WORKMEN LEFT THE QUARRY

Record sending all three pangrams and then play the recording back. What do you need to work on? Pacing? Breaks between words? Character formation?
Use correct error correction. If you make a mistake in a word, send three slow dits, pause and start the word over again. If you make another mistake in the same word, pause and start the word over again

Copy 3
Run LCWO **Word training**
Speed: 9wpm
Min Character Speed: 25wpm
Characters from lesson 40
English words
Maximum length: 3
Uncheck fixed speed
Note your score and maximum speed

CW Academy Fundamental Level Curriculum

COPY	SEND

Session 9 Homework Day 3 - Farnsworth speed: 9wpm

Send 1
Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed

Copy 1
Run LCWO **Code Groups**
1-minute session, **mixed characters**
Character Speed: 25wpm
Effective speed: 9wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Do three 1-minute sessions

Send 2
Send a list of common two-letter words

BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO

Send the list through one time without stopping
Then send the list a second time with error correction as needed

Copy 2
Back to Morse Code Trainer   https://morsecode.world/international/trainer/words.html
The link should take you to the 'Word List' tab. If not, click on 'Word List' in the orange navigation bar
Select 'Ready-Made Lists'
Select Word list: CW Academy Fundamental: 2 letter words
Set 25wpm Character Speed and 9wpm Effective speed
Turn on the controls with the red arrows

One run will be a list of 34 words
Press 'Play' which will send the first word. Don't write anything down.

If you think you know the word, **say it,** then check History below to see if you have it right
If not, press play again to hear the word another time

If you can't figure out the word, press Play again to repeat the two-letter word
After three tries, look at History to see what the word was and press Next to go on

Pressing 'Play' repeats the word
Pressing 'Play Next' goes to the next word

CW Academy Fundamental Level Curriculum

A Challenge for Anyone Consistently Getting 80% or Better on the LCWO Exercises:

Replace the LCWO exercises in the homework with the following:

Set up LCWO Word training as follows:

Speed:	9 ✔ WPM
min. Character Speed:	25 ✔ WPM
Characters from lesson:	40 ✔
Tone:	● 500 ✔ Hz ○ random (500-900Hz)
Language / Collection:	cw - CW abbreviations (Q codes) de - Deutsch de - Deutsch (Allgemein) de - Deutsch (Amateurfunkbegriffe) en - English Hold down Shift while clicking to select multiple entries.
Maximum length (letters):	5
Simplify characters:	☐
Fixed speed:	☐
Skip automatically after 5 seconds:	☐
Start	

Speed: This is the starting point of WPM. This will increase or decrease based on correct entry

Min. Character Speed: This is CPM and should remain constant

Goal: Current Speed: 9WPM – max. speed: 10WPM with 5-letter words

Fixed speed: Must be unchecked

Press 'Start'. Each word you enter correctly will cause the speed to increase by one wpm. If you get the word wrong, it'll decrease by one wpm. Repeat this exercise a couple of times on a daily basis, until you are consistently getting maximum speed of 10wpm or more. Make a note of your score and max speed for each try

When the goal of 10wpm on 3-letter words is consistently reached, Start over again with word length of 4 letters. When you reach a consistent speed of 10wpm, move the word length to 5 letters and do the same

If you are consistently reaching 12wpm or more on 5-letter words, you are more than ready for the Intermediate Level CW Academy class

CW Academy Fundamental Level Curriculum

Session 10 Homework Day 1 Farnsworth speed: 9wpm	
COPY	**SEND**
	Send 1 Do the *'Daily Scales' Warm Up* Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed
Copy 1 Run LCWO **Code Groups** 1-minute session, **letters** Character Speed: 25wpm Effective speed: 9wpm Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results If score is less than 80%, repeat until 80% or 5 times	
	Send 2 Using Morse Code Trainer https://morsecode.world/international/trainer/trainer.html Set the session to 11/13 Set your Farnsworth speed to at least 9wpm In the text box, click on 'k6rb', listen to the code, then mimic what you heard When you feel you are sending that call sign correctly, click on the next word and send it Send what is indicated in the red text Do the third of the three segments
Copy 2 If 'Copy 1' yielded 80% within 5 attempts, do a session of '**Call Sign Training**'. Otherwise repeat 'Copy 1'	
	Send 3 Do 'send 2' again

CW Academy Fundamental Level Curriculum

Session 10 Homework Day 2 - Farnsworth speed: 9wpm	
COPY	**SEND**

<table>
<tr><td></td><td><div align="right">Send 1
Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed</div></td></tr>
<tr><td colspan="2">Copy 1
Run LCWO Code Groups
1-minute session, figures
Character Speed: 25wpm
Effective speed: 9wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Run the 1-minute session, check results, and repeat three times</td></tr>
<tr><td></td><td><div align="right">Send 2
Have an imaginary QSO with someone and be both sides of the QSO</div></td></tr>
<tr><td colspan="2">Copy 2
Run LCWO Plain Text Training
Character Speed: 25wpm
Effective speed: 9wpm
English (or American) Proverbs … your choice
Run through 5 sentences</td></tr>
<tr><td></td><td><div align="right">Send 3
Send the following pangrams:

HOW RAZORBACK-JUMPING FROGS CAN LEVEL SIX PIQUED GYMNASTS <BT>

WHENEVER THE BLACK FOX JUMPED THE SQUIRREL GAZED SUSPICIOUSLY <BT>

A QUART JAR OF OIL MIXED WITH ZINC OXIDE MAKES A VERY BRIGHT PAINT <BT>
<i>Do NOT try this at home</i>

Record sending all three pangrams and then play the recording back. What do you need to work on? Pacing?
Breaks between words?
Character formation?
Use correct error correction. If you make a mistake in a word, send several dits and start the word over again. If you make another mistake in the same word, pause, and start the word over again</div></td></tr>
<tr><td colspan="2">Copy 3
Run LCWO Word training
Speed: 9wpm
Min Character Speed: 25wpm
Characters from lesson 40
English words
Maximum length: 4
Check fixed speed
Note your score</td></tr>
</table>

CW Academy Fundamental Level Curriculum

COPY	SEND

Session 10 Homework Day 3 - Farnsworth speed: 9wpm

Send 1
Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed

Copy 1
Run LCWO **Code Groups**
1-minute session, **letters**
Character Speed: 25wpm
Effective speed: 9wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Do three 1-minute sessions

Send 2
Send a list of common two-letter words

BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO

Send the list through one time without stopping
Then send the list a second time, record, and play back. Critique your sending and repeat if necessary

Copy 2
Back to Morse Code Trainer   https://morsecode.world/international/trainer/words.html
Make sure the 'Ready-Made Lists' tab is selected
Under 'Word list' click the down arrow on the right side of the box and select 'CW Academy Fundamental: 2 letter words'
Read the instructions under 'Sound Board'. Be sure that 'Board Visibility' is OFF and 'Text Visibility' is ON.
Click 'Enable All' so that all the controls under 'Playback Controls' are available
Under 'Playback Controls' the switch for 'Detailed controls' should be turned ON. Set 'Character' to 25wpm and
 Effective' to 9wpm. This section should look like this:

Note the 'Message Choice' options and set 'Repeat' as desired
Play the first word
After the word is played, what is the word?
Scroll down to the 'History' section and verify the word. It will be at the top of the list. If you missed it, play it again until you recognize the word when it is played
Click 'Next' to play the next word. What is the word? Check the 'History' and replay the word again by pressing 'Play' if needed
Continue to press 'Next' until all 34 words have been played and you've gotten all the words

CW Academy Fundamental Level Curriculum

COPY	SEND
Session 11 Homework Day 1 – Farnsworth speed: 9wpm	

COPY	SEND
	Send 1 Do the *'Daily Scales' Warm Up* Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed
Copy 1 Run LCWO **Code Groups** 1-minute session, **letters** 25wpm Character Speed, 9wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results If score is less than 80%, repeat until 80% or 5 times	
	Send 2 Send the following: **WHY DID THE GOLFER WEAR TWO TROUSERS?** **IN CASE HE GOT A HOLE IN ONE** **WHAT GETS WET WHILE IT IS DRYING?** **A TOWEL** **WHAT IS WORSE THAN RAINING CATS AND DOGS?** **HAILING TAXIS**
Copy 2 If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training'. Otherwise repeat 'Copy 1'	
	Send 3 More jokes to send: **WHAT DO YOU CALL A BOOMERANG THAT DOES NOT COME BACK?** **A STICK** **I WAS NOT ARGUING.** **I WAS SIMPLY EXPLAINING WHY I AM RIGHT** **WHY DID THE ORANGE FAIL TO WIN THE RACE?** **BECAUSE IT RAN OUT OF JUICE**
Copy 3 Listen to Short Story 111 at 9wpm: https://cwops.org/wp-content/uploads/2022/07/ss-09.111.mp3 Listen to the story all the way through without stopping, then listen as many times as needed to understand the short story Make notes as you listen Please spend a half-hour on this exercise	

CW Academy Fundamental Level Curriculum

Session 11 Homework Day 2 - Farnsworth speed: 9wpm	
COPY	**SEND**
	Send 1 Do the 'Daily Scales' Warm Up Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed
Copy 1 Run LCWO **Code Groups** 1-minute session, **figures** Character Speed: 25wpm Effective speed: 9wpm Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session, check results, and repeat three times	
	Send 2 Send the following list of European Union Country Codes Identify the country associated with the code. The list of countries and codes is in Appendix B **AT BE BG HR CY CZ DK EE FI FR DE GR HU IE IT LV LT LU MT NL PL PT RO SK SI ES SE** Send the list a second time
Copy 3 Set your browser to https://morse.mdp.im/news/ Character Speed: 25wpm Effective speed: 9wpm Click on the play button and try to copy the headline. Repeat once or twice Hoovering over the blurred text will reveal the headline Play a couple of the headlines. The headlines change every day	
	Send 3 Send the following words. Pay attention to how the full word sounds **THIS BUT HIS BY FROM THEY WE SAY HER SHE OR WILL AN MY ONE** If you make a mistake sending a word then stop, pause, and start the word over again Send the list twice

CW Academy Fundamental Level Curriculum

Session 11 Homework Day 3 - Farnsworth speed: 9wpm		
COPY		**SEND**

Send 1

Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed

Copy 1
Run LCWO **Code Groups**
1-minute session, **letters**
Character Speed: 25wpm
Effective speed: 9wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Do three 1-minute sessions

Send 2

Send a list of common words
Send the list through one time without stopping. Exaggerate the space between words

THEY FROM WE SAY HER SHE OR WILL AN MY ONE AN WILL UP OUT WHO

Then send the list a second time, record, and play back. Critique your sending and repeat if necessary

Copy 2
Set your browser to   https://morse.mdp.im/news/
Character Speed: 25wpm
Effective speed: 9wpm
Click on the play button and try to copy the headline. Repeat once or twice
Hoovering over the blurred text will reveal the headline
Play a couple of the headlines. The headlines change every day

Send 3

Open either bbc.com or cnn.com
On bbc.com click on 'News' and send the headlines in bold
On cnn.com send the headlines in the far-right column

Copy 3
Listen to QSO 101 at 9wpm: https://cwops.org/wp-content/uploads/2022/07/qso-09.101.mp3
Listen all the way through without stopping. You've heard this QSO before. Then listen a second time. You're listening to get the important parts of the QSO:

CQer Call Sign_____   Answerer Call Sign _____

CQer Name _____   Answerer Name _____

CQer RST Sent _____   Answerer RST Sent _____

CQer QTH _____   Answerer QTH _____

CW Academy Fundamental Level Curriculum

COPY	SEND
	Send 1
	Do the *'Daily Scales' Warm Up*
	Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed

Copy 1
Run LCWO **Code Groups**
1-minute session, **letters**
Character Speed: 25wpm
Effective speed: 10wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Run the 1-minute session and check results

If score is less than 80%, repeat until 80% or 5 times

Send 2
Send the following:

WHAT DID ONE TRAFFIC LIGHT SAY TO THE OTHER?
STOP LOOKING <BT>
I AM CHANGING

WHY WAS THE PONY UNABLE TO SING?
BECAUSE HE WAS A LITTLE HOARSE

WHERE DID THE MUSIC TEACHER LEAVE HER KEYS?
IN THE PIANO

Copy 2
If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training'.
Otherwise repeat 'Copy 1'

Send 3
More jokes to send:

WHY DO BIRDS FLY SOUTH IN THE WINTER?
BECAUSE WALKING TAKES TOO LONG

SANDYS MUM HAS FOUR KIDS <BT>
NORTH, EAST AND WEST. WHAT IS THE NAME OF THE FOURTH CHILD?
SANDY, OBVIOUSLY

WHY WAS 6 AFRAID OF 7?
BECAUSE 7,8,9

Copy 3
Listen to Short Story 112 at 9wpm: https://cwops.org/wp-content/uploads/2022/07/ss-10.112.mp3
Listen to the story all the way through without stopping, then listen a second time.
Please spend a half-hour on this exercise. Make notes about what you heard in the story

CW Academy Fundamental Level Curriculum

COPY	SEND

<div align="center">**Session 12 Homework Day 2 - Farnsworth speed: 10wpm**</div>

Send 1

<div align="right">Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed</div>

Copy 1

Run LCWO **Code Groups**
1-minute session, **figures**
Character Speed: 25wpm
Effective speed: 10wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Run the 1-minute session, check results, and repeat three times

Send 2

<div align="right">Be very precise sending the following:</div>

<div align="center">**GD MATE UR SIG 5NN DE (YOUR CALL SIGN)**
TU NAME HR IS (YOUR NAME) (YOUR NAME) DE (YOUR CALL SIGN)
QTH IS (YOUR QTH) (QTH) DE (YOUR CALL SIGN)</div>

<div align="right">Repeat three times</div>

Copy 2

Set your browser to   https://morse.mdp.im/news/
Character Speed: 25wpm
Effective speed: 10wpm
Click on the play button and try to copy the headline. Repeat once or twice
Hoovering over the blurred text will reveal the headline
Play a couple of the headlines. The headlines change every day

Send 3

<div align="right">Repeat precisely sending the qso phrases from Send 2
Record your sending and play it back
Critique your sending and try again. Record and play back. Did you improve?</div>

CW Academy Fundamental Level Curriculum

Session 12 Homework Day 3 - Farnsworth speed: 10wpm		
COPY		**SEND**

Send 1
Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed

Copy 1
Run LCWO **Code Groups**
1-minute session, **mixed characters**
Character Speed: 25wpm
Effective speed: 10wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Do three 1-minute sessions

Send 2
Send a list of common words
Send the list through one time without stopping

THEY FROM WE SAY HER SHE OR WILL AN MY ONE AN WILL UP OUT WHO

Then send the list a second time, record, and play back. Critique your sending and repeat if necessary

Copy 2
Set your browser to   https://morse.mdp.im/news/
Character Speed: 25wpm
Effective speed: 10wpm
Click on the play button and try to copy the headline. Repeat once or twice
Hoovering over the blurred text will reveal the headline
Play a couple of the headlines. The headlines change every day

Send 3
Open either bbc.com or cnn.com
On bbc.com click on 'News' and send the headlines in bold
On cnn.com send the headlines in the far-right column

Copy 3
Listen to QSO 103 at 10wpm: https://cwops.org/wp-content/uploads/2022/07/qso-10.103.mp3
Listen all the way through without stopping. Then listen a second time. You're listening to get the important parts of the QSO:

CQer Call Sign_____   Answerer Call Sign _____

CQer Name _____   Answerer Name _____

CQer RST Sent _____   Answerer RST Sent _____

CQer QTH_____   Answerer QTH _____

CW Academy Fundamental Level Curriculum

<table>
<tr><td colspan="2" align="center">**Session 13 Homework Day 1**
Farnsworth speed: 10wpm</td></tr>
<tr><td>**COPY**</td><td align="right">**SEND**</td></tr>
<tr><td colspan="2" align="right">**Send 1**
Do the *'Daily Scales' Warm Up*
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed</td></tr>
<tr><td colspan="2">**Copy 1**
Run LCWO **Code Groups**
1-minute session, **letters**
Character Speed: 25wpm
Effective speed: 10wpm
Set Extra Word Spacing to 3 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Run the 1-minute session and check results

If score is less than 80%, repeat until 80% or 5 times</td></tr>
<tr><td colspan="2" align="right">**Send 2**
Read the following QSO carefully and then send it:

<div align="center">**CQ CQ DE K6RB K6RB K6RB K**

(YOUR CALL) (YOUR CALL) K

(YOUR CALL) DE K6RB TU FER CALL UR RST 589 58N QTH IS SANTA CRUZ SANTA CRUZ NAME IS ROB ROB HW?
(YOUR CALL) DE K6RB K

K6RB DE (YOUR CALL) R TU ROB UR RST IS 589 QTH IS (YOUR QTH) (YOUR QTH) ES NAME IS (YOUR NAME) HW?

K6RB DE (YOUR CALL) K

(YOUR CALL) DE K6RB ROCK SOLID (YOUR NAME) TU FER UR INFO NICE TO MEET U HPE CU AGN SN 73 SK

(YOUR CALL) DE K6RB K

K6RB DE (YOUR CALL) OK ROB NICE TO MEET U TOO ES HPE WE CAN DO IT AGN 73 SK

K6RB DE (YOUR CALL) E E

E E</div></td></tr>
<tr><td colspan="2">**Copy 2**
If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training'.
Otherwise repeat 'Copy 1'</td></tr>
<tr><td colspan="2" align="right">**Send 3**
Send the QSO from Send 2 again. Record your sending and play it back. Critique your sending
Then send it a second time based on what you learned listening to your sending</td></tr>
<tr><td colspan="2">**Copy 3**
Listen to Short Story 113 at 10wpm: https://cwops.org/wp-content/uploads/2022/07/ss-10.113.mp3
Listen to the story all the way through without stopping, then listen a second time and as many times needed to understand the story.
Please spend a half-hour on this exercise. Make notes about what you heard in the story</td></tr>
</table>

CW Academy Fundamental Level Curriculum

Session 13 Homework Day 2 - Effective Speed: 10wpm	
COPY	**SEND**
	Send 1 Do the 'Daily Scales' Warm Up Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed.
Copy 1 Run LCWO **Code Groups** 1-minute session, **figures** Character Speed: 25wpm Effective speed: 10wpm Set Extra Word Spacing to 3 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results, and repeat a second time	
	Send 2 Send your call sign and name five times in a row without making a mistake. If you make a mistake, start over again. If after three tries you haven't succeeded, take a break and come back to try again
Copy 2 Set your browser to https://morse.mdp.im/news/ 25wpm Character Speed, 10wpm Effective speed Click on the play button and try to copy the headline. Repeat once or twice Hoovering over the blurred text will reveal the headline Play a couple of the headlines. The headlines change every day	
	Send 3 Repeat Send 2 and record your sending. Play back the recording and critique your code. Can you copy it? Does it sound like what you want others to hear?

CW Academy Fundamental Level Curriculum

COPY	SEND

Session 13 Homework Day 3 - Farnsworth speed: 10wpm

Send 1

Do the 'Daily Scales' Warm Up

Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed

Copy 1

Run LCWO **Code Groups**

1-minute session, **letters**

Character Speed: 25wpm

Effective speed: 10wpm

Set Extra Word Spacing to 3 (give yourself a bit more time between groups)

Set Start Delay at 2 seconds

Groups of 5 characters

Do two 1-minute sessions

Send 2

Now send your call sign, name, and QTH five times in a row without an error

If you make a mistake, start over again

If after three tries you still haven't sent it without error, take a break and come back to try again later

Copy 3

Listen to QSO 104 at 10wpm: https://cwops.org/wp-content/uploads/2022/07/qso-10.104.mp3

Listen all the way through without stopping. Then listen a second time. You're listening to get the important parts of the QSO:

CQer Call Sign _____   Answerer Call Sign _____

CQer Name _____   Answerer Name _____

CQer RST Sent _____   Answerer RST Sent _____

CQer QTH _____   Answerer QTH _____

Send 3

Do Send 2 again while recording your sending

Play the recording back and critique your sending

Send your call sign, name, and QTH again putting into practice what you learned by listening to your sending

CW Academy Fundamental Level Curriculum

<table>
<tr><td colspan="2" align="center">Session 14 Homework Day 1
Farnsworth speed: 10wpm</td></tr>
<tr><td>COPY</td><td align="right">SEND</td></tr>
<tr><td colspan="2" align="right">Send 1
Do the <i>'Daily Scales' Warm Up</i>
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed</td></tr>
<tr><td colspan="2">Copy 1
Run LCWO Code Groups
1-minute session, letters
Character Speed: 25wpm
Effective speed: 10wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Run the 1-minute session and check results

If score is less than 80%, repeat until 80% or 5 times</td></tr>
<tr><td colspan="2" align="center">Send 2
<div align="right">Read the following QSO carefully and then send it:</div>
CQ CQ DE AC4BT AC4BT K

AC4BT DE (YOUR CALL) (YOUR CALL) K

(YOUR CALL) DE AC4BT TU FER CALL UR RST IS 559 559 IN VA VA NAME IS JERRY JERRY HW?

(YOUR CALL) DE AC4BT K

AC4BT DE (YOUR CALL) R GUD CPY JERRY ES TU FER RPT FM VA UR RST IS 569 IN (YOUR QTH)

NAME IS (YOUR NAME) HW?

AC4BT DE (YOUR CALL) K

(YOUR CALL) DE AC4BT GUD CPY (YOUR NAME) MNI TKS FER QSO HPE CU AGN SN 73 SK

(YOUR CALL) DE AC4BT K

DE (YOUR CALL) OK JERRY NICE TO QSO WID U TOO I WILL LOOK FER U AGN JERRY 73

AC4BT DE (YOUR CALL) SK E E

E E</td></tr>
<tr><td colspan="2">Copy 2
If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training' at 10wpm effective speed
Otherwise repeat 'Copy 1'</td></tr>
<tr><td colspan="2" align="right">Send 3
Send the QSO from Send 2 again. Record your sending and play it back. Critique your sending
Then send it a second time based on what you learned listening to your sending</td></tr>
<tr><td colspan="2">Copy 3
Listen to Short Story 114 at 10wpm: https://cwops.org/wp-content/uploads/2022/07/ss-10.114.mp3
Listen to the story all the way through without stopping, then listen a second time and as many times needed to understand the story
Please spend as much time as needed on this exercise. Make notes about what you heard in the story</td></tr>
</table>

CW Academy Fundamental Level Curriculum

Session 14 Homework Day 2 - Farnsworth speed: 10wpm	
COPY	**SEND**
	Send 1 Do the 'Daily Scales' Warm Up Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed
Copy 1 Run LCWO **Code Groups** 1-minute session, **figures** Character Speed: 25wpm Effective speed: 10wpm Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results, and repeat a second time	
	Send 2 Send your call sign and name five times in a row without making a mistake If you make a mistake, start over again If after three tries you haven't succeeded, take a break, and come back to try again
Copy 2 Set your browser to https://morse.mdp.im/news/ Character Speed: 25wpm Effective speed: 10wpm Click on the play button and try to copy the headline. Repeat once or twice Hoovering over the blurred text will reveal the headline Play a couple of the headlines. The headlines change every day	
	Send 3 Repeat Send 2 and record your sending Play back the recording and critique your code. Can you copy it? Does it sound like what you want others to hear?

CW Academy Fundamental Level Curriculum

COPY	SEND

Session 14 Homework Day 3 - Farnsworth speed: 10wpm

Send 1
Do the 'Daily Scales' Warm Up
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed

Copy 1
Run LCWO **Code Groups**
1-minute session, **mixed characters**
Character Speed: 25wpm
Effective speed: 10wpm
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)
Set Start Delay at 2 seconds
Groups of 5 characters
Do two 1-minute sessions

Send 2
Now send your call sign, name, and QTH five times in a row without an error
If you make a mistake, start over again
If after three tries you still haven't sent it without error, take a break and come back to try again later

Copy 3
Listen to QSO 105 at 10wpm: https://cwops.org/wp-content/uploads/2022/07/qso-10.105.mp3
Listen all the way through without stopping. Then listen a second time. You're listing to get the important parts of the QSO:

CQer Call Sign_____   Answerer Call Sign _____

CQer Name _____   Answerer Name _____

CQer RST Sent _____   Answerer RST Received _____

CQer QTH _____   Answerer QTH _____

Send 3
Do Send 2 again while recording your sending
Play the recording back and critique your sending
Send your call sign, name, and QTH again putting into practice what you learned by listening to your sending

CW Academy Fundamental Level Curriculum

<table>
<tr><td colspan="2" align="center">Session 15 Homework Day 1 - 3
Farnsworth speed: 11wpm</td></tr>
<tr><td>COPY</td><td align="right">SEND</td></tr>
</table>

Send 1

Do the 'Daily Scales' Warm Up

Set the keyer at 25wpm character speed and practice character spacing at 11wpm effective speed

Copy 1

Run LCWO **Code Groups**

1-minute session, **letters**

Character Speed: 25wpm

Effective speed: 11wpm or higher

Set Extra Word Spacing to 3 (give yourself a bit more time between groups)

Set Start Delay at 2 seconds

Groups of 5 characters

Run the 1-minute session and check results

If score is less than 80%, repeat until 80% or 5 times

The homework for this week is to GET ON THE AIR!! Make at least three QSO's before our next class!!

Session 16 Homework

By now you should have developed a habit of daily Morse code practice. Your homework is to continue this practice habit. Don't let it slip away.

You should have been on the air and made some CW contacts. The best use of your Morse code skills is to GET ON THE AIR! Set some goals and track your progress!

Thank you for sticking with the class to the end of the semester!!

Appendix A:
Morse Code World Setup for Word List

CW Academy Fundamental Level Curriculum

Appendix B: List of EU Country
Codes:

AT   Austria

BE   Belgium

BG   Bulgaria

HR   Croatia

CY   Cyprus

CZ   Czech Republic

DK   Denmark

EE   Estonia

FI   Finland

FR   France

DE   Germany

GR   Greece

HU   Hungary

IE   Ireland

LT   Lithuania

LU   Luxembourg

MT   Malta

NL   Netherlands

PL   Poland

PT   Portugal

RO   Romania

SK   Slovakia

SL   Slovenia

ES   Spain

SE   Sweden

CW Academy Fundamental Level Curriculum

Appendix C: US State Abbreviations

AK - Alaska

AL - Alabama

AR - Arkansas

AZ - Arizona

CA - California

CO - Colorado

CT - Connecticut

DE - Delaware

FL - Florida

GA - Georgia

HI - Hawaii

IA - Iowa

ID - Idaho

IL - Illinois

IN - Indiana

KS - Kansas

KY - Kentucky

LA - Louisiana

MA - Massachusetts

MD - Maryland

ME - Maine

MI - Michigan

MN - Minnesota

MO - Missouri

MS - Mississippi

MT - Montana

NC - North Carolina

ND - North Dakota

NE - Nebraska

NH - New Hampshire

NJ - New Jersey

NM - New Mexico

NV - Nevada

NY - New York

OH - Ohio

OK - Oklahoma

OR - Oregon

PA - Pennsylvania

RI - Rhode Island

SC - South Carolina

SD - South Dakota

TN - Tennessee

TX - Texas

UT - Utah

VA - Virginia

VT - Vermont

WA - Washington

WI - Wisconsin

WV - West Virginia

WY - Wyoming