

# Learning Morse Code

LICW KIDS Instructor Guide 2025



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## Introduction

### **What is special about the LICW Kids Program?**

We keep track of who's in each class and what they need to work on in their Morse code learning. Each class usually has 3-5 kids in a small group, and we offer individual 1-1 training if needed. Our classes are super interactive, where kids get to chat, learn to send pet names, their own names, and even make friends with people from all over the country!

### **Students and grade levels**

We're a welcoming place for students aged 5 to 17, and about half of our classes are girls. Some of our students are even licensed and are working on their CW skills. Our current students come from all over the world, including the U.S., Canada, the U.K., Hungary and Italy.

### **Skills targeted in the program**

The LICW Kids program aims to teach kids the Morse code and help them become amateur radio operators. We usually use the skills taught in the LICW Adult BC classes, however, we also incorporate materials that help young kids learn to read and write.

### **Instructors**

Amanda KY4GS, Bob W7JNM, Cathy W4CMG, Chris N8PEM, Ed N2EC, Gareth G0MFR, Kasey KD2YMM, Katherine VA7HN, Ken K7BXI, Michael G0POT, Ron KC2PSA. Adult class coaches: Mike N1CC, Quentin K7DRQ.

## Getting Set Up

### **Starting the class**

The first instructor should assume host and set up 3-4 breakout rooms. As more instructors and student instructors join, they should be assigned co-host. *The host should stay in the main room to assign new students.*

### **Zoom and security practices**

LICW provides a separate Zoom room for Kids classes. We protect the kids by not sharing this room with outsiders. Access is granted *only* after Bob W7JNM or a teaching staff member interviews the parents of new students.

Zoom works best with headphones and a separate microphone. Setting the code practice oscillator next to the microphone works best. Use LICW Zoom settings to avoid echo cancellation. We have settings for Windows, iOS, iPad, and ChromeBooks. Smartphones are discouraged due to inadequate Zoom settings.

LICW Zoom Settings and [User Guide](#) (google drive)

LICW Quick Start Video (zoom) <https://youtu.be/2X77dP5LSRk?t=1234>

### **Keys and code practice oscillator**

We use [CW Morse](#) keys and Code Practice Oscillators (CPOs). If the student needs help, LICW can provide these parts. Parents who are HAMs can also use their rigs with side-tone oscillator.

## **Skill and learning levels**

### **Assessing what each student needs**

At the beginning of class, the Instructor host should ask each student what level they are. This helps students assume responsibility for their own progress and helps assign instructors to various breakout rooms.

- 1. articulation - training the ears and fingers with focus on timing**
- 2. beginner1 - know a few letters, names, 2 letter words, pets, syllable segmenting and blending words**
- 3. beginner2 - know most of alphabet, some numbers, 3-5 letter words, begin pro-signs, CVC words, begin head send**
- 4. beginner3 - know full alphabet, all numbers, QSO protocols K1USN, common pro-signs, callsigns, onset-rime words, begin head copy**
- 5. intermediate1 - common pro-signs, short QSO phrases, LICW contest, begin on-air**
- 6. intermediate2 - fluency, word association, common sight words, decodable insects, describe pictures of animals**
- 7. intermediate3 - Comprehension, Canadian Provinces, question & answer, Intro. to CW Nets**

Files for the numbered areas above, 1, 2, 3, etc. can be found on the LICW Kids [Google drive](#) here:

### Morse Code Continuum - Beginners

Articulation	Beg 1	Beg 2	Beg 3
Train ears & fingers	Few letters	Most alphabet	Full alphabet
Timing focus	2 letter words	Some numbers	All numbers
	Names	3-5 letter words	Common pro-signs, callsigns
	Pets	Begin pro signs	QSO protocols K1USN
	Syllable segmenting & blending	CVC words	Onset-rime words
		Begin head send	Begin head copy

### Morse Code Continuum - Intermediate

Int 1	Int 2	Int 3
Common Pro signs	Fluency	Comprehension
Short QSO phrases	Word association game	Canadian Province Sentences
LICW Contest	Common Sight Words	Question & Answer
Begin on-air	Decodable - the insect mascot	Intro to CW Nets
	Describe pictures of animals	

## Articulation & Beginner 1, 2, 3

### Articulation

The accurate production of Morse coded letters and words and how words sound when sent or copied.

### Beginner 1, 2, 3

The LICW adult classes use the BC lesson plan and the Morse Practice Page to teach initial Morse sound-letter training. We teach three letters each week throughout the week. The Kids program follows the same letter sequence. If parents are taking the adult classes, they can help their kids with the same letter sequence.

## Articulation

### Overview of Articulation

Students need to learn the names of the letters and the Morse sounds they represent. While many of us teach these skills separately, there's evidence that teaching letter names alongside letter sounds, articulation, and letter formation can help the brain understand the information.

We'll call this process of teaching letter names and sounds together as sound-letter correspondence. When we teach the connection between sounds (phonemes) and letters (graphemes), we're teaching students the code to unlock words.

### Teaching articulation (1.)

The goal is to train the student's ear to learn to send with proper timing.

- Drill: MPP BC1 or 2, REA Familiarity (or Weekly Characters), Familiarity. The student should hear a letter, say a letter, send a letter. Drill for 1 min.
- Drill: instructor sends E I S H 5. Student says each letter and sends it back. Instructor corrects as needed.
- Drill: instructor sends T M O zero. Student says each letter and sends it back. Instructor corrects as needed.

For more advanced articulation, the instructor sends and has the student copy and/or say and echo back complementary letters.

- Drill: Instructor sends A A A A A N N N N N. The student says and sends letters back.

- Drill: continue with T M, L F, D U, J V, P X, etc.

Alphabet: have the student go through the alphabet. Note missed letters that need to be learned.

- Drill: MPP, REA, REA Familiarity. Insert alphabet or letters to be learned into the Working Text box at the top. Use spaces between each letter, and uncheck KEEP LINES. Be sure to choose a good clear voice so letters can be understood.
- Alternate to MPP: instructor sends letters, have the student say and send back each letter. (I do, we do, you do)
- Have the student repeat each letter to assess automaticity and fluency.
- Keep track of correct letters. Use a letter-sound assessment<sup>1</sup> as needed.

## Beginner 1, 2, 3

### Overview of Beginner 1, 2, 3

Beginner 1, 2, and 3 follow the LICW adult format. We add syllables, CVC words and onset-rime words to help early learners with word blending and copy.

### Teaching Beginner 1 and 2

The goal of beginner 1 and 2 is to teach the alphabet plus numbers. Begin by assessing a student's alphabet knowledge, with focus on two and three letter words with the letters they already know. An alternative is to follow the LICW Weekly Character Group letter sequence.

- Drill: follow Alphabet in three letter words. This sequence uses repetition of introductory sounds. e.g. bat, cat, fat, hat, mat, pat. Here is an [alphabet in three letter words](#).<sup>2</sup>
- Drill: use MPP weekly Character Group letters. If kids know which letters to work on, use those instead. Then, introduce *no more than three new letters* per the LICW [Weekly Character Group](#).<sup>3</sup> Adding more than three letters per week may contribute to cognitive overload, preventing long term retention.



Be aware of student's cognitive overload. <sup>4</sup> Switch to short words, names, pets to keep the interest up.

- Drill: generate 2-letter words for Beg1, and 3-5 letter words for Beg2. Have Kids think of words, or use known letters with [K7DRQ's word generator](#). <sup>5</sup>

Here are the three recommended drills for BC1. Referencing Weekly Character Group, run each letter for 30 sec. then run three letters in Familiarity and Recognition mode.

Type	Class	Letter group	Lesson	Presets	Notes
Instructor	BC1	R E A	R, E, A	Default 12 / 8	Run letters for 30 sec to avoid boredom
	BC1	R E A	REA Familiarity	Familiarity	"R" dit dah dit x 3
	BC1	R E A	REA Familiarity	Recognition (say before the computer)	dit dah dit - "R" dit - "E" dit dah - "A"

- Drill: here is an example for BC2 KMY Familiarity where the computer says the word, then sends it three times. Note, you can substitute letters in the working text box at the top of MPP.

TYPE	CLASS	LETTER GROUP	LESSON	PRESETS
Settings	BC1	KMY	K	Your Settings
INSTRUCTOR	BC2	59,	M	Default 12/10
		QXV	Y	<b>Familiarity</b>
		73?	<b>KMY FAMILIARITY</b>	Recognition
		<AR><SK><BT>	KMY	Random groups 1-3
		16.	B1 KMY	VST

## Syllable segmenting & blending

It's important that we give students the time that they need to solidify word recognition skills. Here's a short assessment for you to use to check your students' mastery of syllable segmenting, blending, and deleting. It should take no longer than two to three minutes per child. [Syllable Awareness Assessment](#).<sup>6</sup>

- Drill: send the first syllable in the word, then the second, then the entire word. Ask the student if they were able to copy the entire word.
- Drill: send the entire word, then ask the student to segment the syllables and send them back. Here is an assessment example:

SKILL 1: SYLLABLE BLENDING			
Directions: Say the syllables /*/ */. Blend the syllables and say the word.			
Syllables	Correct Response	Student's Response	Score
1. /ta/ /ble/	table		/1
2. /o/ /pen/	open		/1
3. /mar/ /ket/	market		/1
4. /ra/ /di/ /o/	radio		/1
5. /el/ /e/ /vate/	elevate		/1
<b>Total</b>			<b>/5</b>

## Syllable practice:

Here is a Syllable word list to help with practice. Hand send the syllables with spaces, then send the complete word. Have the student send the syllables in 60 seconds then copy words in 60 seconds. [Syllable Word List](#):<sup>7</sup>

**Overview of CVC words**

Conquering words with short vowel sounds is a major early milestone for students who are learning to read.

**Teaching CVC words**

Have the students copy and send Consonant, Vowel, Consonant (CVC) words from the lists.<sup>8</sup>

Note there are lists for each of the vowels, a, e, i, o, u.

<b>a</b>			
sad	sag	sap	sat
mad	map	mat	rad
rag	rap	rat	fad
fat	nag	nap	nab
lap	lag	lad	at

**Overview of beginning head sending**

Guiding early CW learners to start sending short words is a great way to help them think about the sounds of whole words and phrases. This can lead to better fluency and comprehension over time!

**Teaching beginning head sending**

- Drill: Start by using common opposite terms. Have the students copy a word, then raise their hand if they get the word. Source: Kasey KD2YMM.
  - Examples: Vvv up es down, vvv on es off, vvv in es out.
- Drill: Have the beginning students think of a state / province two letter abbreviation, close their eyes, then head send the two letters. Examples: NY, NJ, NC, BC, WA, OR.
- Drill: Have the beginning students think of a pet name, their name, family member name, then head send the letters.

Additionally, context is paramount when working on head copy. Therefore, select a specific topic and send a list of related words. Request students to raise their hands when they comprehend the words. Select a student to share their understanding with the class, and have the student send a response.

For example: Flowers: vvv rose, vvv petunia

On the Farm: vvv cow, vvv tractor

## Beginner 3

### Beginner 3 overview

The goal of Beginner 3 is to continue with words, pro-signs, and begin to introduce QSO protocols. More QSO protocols and on-air classes will continue in the Intermediate classes.

### Teaching beginner 3

QSO protocols should be introduced. Begin with common abbreviations used in the [K1USN](#).<sup>9</sup> Call signs should be introduced. Then advance to [abbreviations and pro-signs](#) listed.<sup>10</sup>

QSO protocol introduction should use [K7DRQ's Microtools](#).<sup>11</sup> Begin with the K1USN protocol. Configure the micro tool with student names and locations, then have each student send and copy the protocol exchange.

### Overview of Onset-rime

Onset and rime are two parts of a spoken word. The onset is the initial consonant sound, digraph, or blend that comes before a vowel sound, for example, /b/ in the word bug. The rime includes the vowel and all consonant sounds that follow it in a one-syllable word or in the same syllable of a multisyllabic word, like /ug/ in the word bug.

### Teaching Onset-rime

Onset-rime is a phonological skill. Practicing it provides children with their first chance to isolate a single sound in a word. When we teach onset-rime, we start by teaching children to blend the two parts of the word together, then we move onto segmenting. Assessment examples for [onset-rime](#).<sup>12</sup>

The instructor should send the onset then the rime then the entire word.  
The student should echo the onset, then the rime, then the entire word.

## Onset-Rime Assessments for Mastery

### SKILL 1: ONSET-RIME BLENDING

Directions: Say the onset-rime. Blend the onset-rime and say the word.

Onset-Rime	Correct Response	Student's Response	Score
1. /l/ /ĭp/	lip		/1
2. /sh/ /ŏp/	shop		/1
3. /str/ /ĕt/	street		/1
4. /d/ /ĭm/	dime		/1
5. /pl/ /ās/	place		/1
		<b>Total</b>	<b>/5</b>

## Intermediate 1

### Teaching QSO Protocols

Intermediate classes should sequence through five protocol practice drills, including on-air practice during and after class. Refer to the [LICW BC3 Weekly Character Group](#) for the specific protocol for each week.

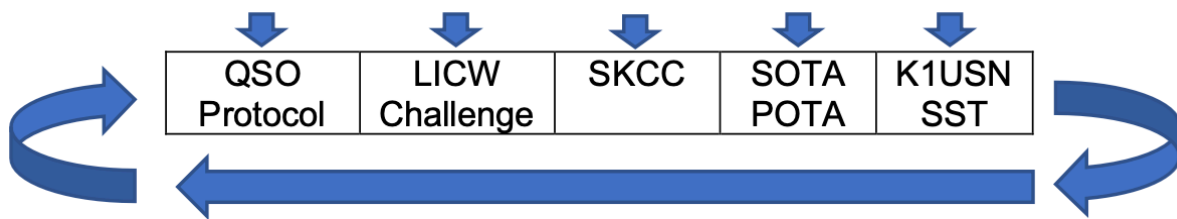


Figure 1 Beginners Carousel 3

### Teaching common pro-signs and short QSO phrases

Short QSO pro signs such as 73 es GL, my rig is, my and is, wx is, and other CW short cuts should be taught in parallel with teaching QSO protocols.

Here are short cut examples:

- GM, GA, GE: good morning, afternoon, evening
- TU, TX, TNX: thanks
- OP: name
- WX hr: weather here
- UR: your
- CUAGN: see you again

### The Kids on-the-air

Kids meet in our Zoom room and on the air on Sunday afternoon for the K1USN SST protocol. Times are Mondays 00:00-01:00 UTC: **7-8pm EST Sunday.**

## Intermediate 2

### Teaching short phrases and fluency

Students need ample opportunities to practice copying and sending sight words, phrases, and sentences when learning a new phonics pattern. Sending and copying short phrases and sentences aids in reading words accurately and automatically. Examples are: I, like, to, are, do...

Here is a list of common sight words : <sup>13</sup>

Here are a few Language Arts definitions:

Accuracy - a characteristic of reading fluency that reflects error-free decoding and is necessary for comprehension. The goal of accuracy is 98%. Note, this is letter-sound *assessment* accuracy, not necessarily learning zone practice accuracy. Learning zone accuracy needs to be in the 50% to 70% range in order to improve Morse Code letter-sound accuracy.

( ReadingUniverse <https://readinguniverse.org/glossary>. Accuracy )

Automaticity - a characteristic of reading and copy fluency that reflects effortless character and word recognition as a result of automatic decoding.

( ReadingUniverse <https://readinguniverse.org/glossary>. Automaticity )

Cognitive load - the amount of working memory load being utilized when children are embarking on a new task.

Phonics - a method for teaching reading by applying the systematic, predictable relationship between written letters and acoustic sounds (the alphabetic principle).

## Intermediate 3

### Comprehension

Comprehension is complex and doesn't lend itself easily to definition. But I believe that a Rand Corporation report published back in 2002 remains the best model for understanding how comprehension works and how we can help our students become more skilled at understanding what they read.

They defined reading comprehension as “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language.” Nancy Hennessy, Reading Universe.

For comprehension practice, we selected longer sentences to help CW students with concentration. Canada CW certificate requires 3 minutes of copy. We Googled information about Canadian Province Capitols, separated

paragraphs into sentences, and had students copy for accuracy (or send for fluency practice).

- Sentence example: Québec City is located on the Saint Lawrence River in Canada's mostly French-speaking Québec province.
- Here is a list of Canadian Province Capitol sentences: <sup>14</sup>
- Here's an MPP setup. Copy and paste the Canadian Province (or other) sentence into the working text box at the top of the MPP:

Character Speed (WPM) 12

Effective Speed (FWPM) 6

5

Québec City is located on the Saint Lawrence River in Canada's mostly French-speaking Québec province.

Play : 1:07  
 Chars : 36/101

📖 LICW Lessons
Type: STUDENT
Class: BC3
Letter Group: QSO Words
Lesson: QSO Words
Settings: Default 12/12

TYPE	CLASS	LETTER GROUP	LESSON	PRESETS
<span style="background-color: #0066b3; color: white; padding: 2px 10px; border: 1px solid #0066b3;">STUDENT</span>	<span style="border: 1px solid #0066b3; padding: 2px 10px;">BC1</span>	<span style="border: 1px solid #0066b3; padding: 2px 10px;">CHARACTERS</span>	<span style="background-color: #0066b3; color: white; padding: 2px 10px; border: 1px solid #0066b3;">QSO Words</span>	<span style="border: 1px solid #0066b3; padding: 2px 10px;">Your Settings</span>
<span style="border: 1px solid #0066b3; padding: 2px 10px;">INSTRUCTOR</span>	<span style="border: 1px solid #0066b3; padding: 2px 10px;">BC2</span>	<span style="border: 1px solid #0066b3; padding: 2px 10px;">Call Signs</span>		<span style="background-color: #0066b3; color: white; padding: 2px 10px; border: 1px solid #0066b3;">Default 12/12</span>
	<span style="background-color: #0066b3; color: white; padding: 2px 10px; border: 1px solid #0066b3;">BC3</span>	<span style="border: 1px solid #0066b3; padding: 2px 10px;">FAMILIARITY</span>		<span style="border: 1px solid #0066b3; padding: 2px 10px;">Default 15/12</span>
	<span style="border: 1px solid #0066b3; padding: 2px 10px;">INT 1</span>	<span style="border: 1px solid #0066b3; padding: 2px 10px;">QSO Protocol</span>		<span style="border: 1px solid #0066b3; padding: 2px 10px;">Call Signs</span>
	<span style="border: 1px solid #0066b3; padding: 2px 10px;">INT 2</span>	<span style="background-color: #0066b3; color: white; padding: 2px 10px; border: 1px solid #0066b3;">QSO Words</span>		<span style="border: 1px solid #0066b3; padding: 2px 10px;">Familiarity Phrases</span>
	<span style="border: 1px solid #0066b3; padding: 2px 10px;">INT 3</span>			<span style="border: 1px solid #0066b3; padding: 2px 10px;">Familiarity Spelling</span>
	<span style="border: 1px solid #0066b3; padding: 2px 10px;">ADV 1</span>			



## CW Traffic Nets

This section will be added soon. The idea is to introduce Nets to our kids so if they want to join a formal traffic net, they will be familiar with the protocols.

## Appendix 1

### Books:

“Make It Stick,” Peter C. Brown (science of reading)

“Reading and the Brain,” Stanislas Dehaene (neuroscience)

“Proust and the Squid,” Maryanne Wolf 2007, *The Story of Science of the Reading Brain*, including Dyslexia.

Here is an article about Rapid Automatized Naming (RAN) <sup>15</sup> RAN is used as an assessment tool for early learners. The LICW adult classes use Instant Character Recognition (ICR).

### Footnotes:

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<sup>1</sup> Reading Universe Assessing Letter-Sounds: <https://readinguniverse.org/skill-explainer/sound-letter-correspondence/letter-names-sounds/assessing-letter-sound-knowledge>

<sup>2</sup> Alphabet in three letter words. Source Kathleen K7KER: [https://drive.google.com/file/d/1qMnWFjrSKZrNOUbFtF2nYEqnlx-Lh3Zo/view?usp=drive\\_link](https://drive.google.com/file/d/1qMnWFjrSKZrNOUbFtF2nYEqnlx-Lh3Zo/view?usp=drive_link)

<sup>3</sup> LICW Weekly character group of letters for BC1, 2, 3: [https://drive.google.com/file/d/15LsWUuYLBnsNYXvR-Nvsp\\_n553DJnisq/view?usp=drive\\_link](https://drive.google.com/file/d/15LsWUuYLBnsNYXvR-Nvsp_n553DJnisq/view?usp=drive_link)

<sup>4</sup> Reading Rockets, “10 Strategies to Enhance Students’ Memory: <https://www.readingrockets.org/topics/brain-and-learning/articles/10-strategies-enhance-students-memory>

<sup>5</sup> K7DRQ Microtools: [https://quentincaudron.com/cw\\_microtools/word\\_generator.html](https://quentincaudron.com/cw_microtools/word_generator.html)

<sup>6</sup> Reading Universe, Syllable Awareness Assessment: [https://drive.google.com/file/d/1LGIQyuVdxmbRLQ3Wv5eoomZx2GbJSA\\_T/view?usp=drive\\_link](https://drive.google.com/file/d/1LGIQyuVdxmbRLQ3Wv5eoomZx2GbJSA_T/view?usp=drive_link)

<sup>7</sup> Reading Universe Syllable Word List: <https://files.readinguniverse.org/PDFs/syllable-word-list-reading-universe.pdf>

<sup>8</sup> Education dot com: CVC word lists: [https://drive.google.com/file/d/1MjGcPFz06G8iRUsGMAi5JM9vcosaFMhi/view?usp=drive\\_link](https://drive.google.com/file/d/1MjGcPFz06G8iRUsGMAi5JM9vcosaFMhi/view?usp=drive_link)

<sup>9</sup> K1USN SST protocol: <http://www.k1usn.com/sst.html>

<sup>10</sup> pro-signs list: [https://en.wikipedia.org/wiki/Prosigns\\_for\\_Morse\\_code](https://en.wikipedia.org/wiki/Prosigns_for_Morse_code)

<sup>11</sup> K7DRQ Microtools: [https://quentincaudron.com/cw\\_microtools/](https://quentincaudron.com/cw_microtools/)

<sup>12</sup> Reading Universe Onset-Rime Assessment: [https://files.readinguniverse.org/Taxonomy/Word-Recognition/Phonological-Awareness/Onset-Rime/onset-rime-assessments-reading-universe\\_2023-04-29-150758\\_tvkd.pdf](https://files.readinguniverse.org/Taxonomy/Word-Recognition/Phonological-Awareness/Onset-Rime/onset-rime-assessments-reading-universe_2023-04-29-150758_tvkd.pdf)

<sup>13</sup> list of common sight words: [https://drive.google.com/file/d/1TIX7ogfuvT6ys5-qt dj-xijeb30jyFrC/view?usp=share\\_link](https://drive.google.com/file/d/1TIX7ogfuvT6ys5-qt dj-xijeb30jyFrC/view?usp=share_link)

<sup>14</sup> Canadian Province Capitols: [https://drive.google.com/file/d/1r5Y-HkgWPhN64t9ZmdcEWMIHPkeaNj1x/view?usp=drive\\_link](https://drive.google.com/file/d/1r5Y-HkgWPhN64t9ZmdcEWMIHPkeaNj1x/view?usp=drive_link)

<sup>15</sup> Rapid Automatized Naming: <https://learnlab.northwestern.edu/wp-content/uploads/2020/10/Norton-What-educators-need-to-know-about-RAN.pdf>