

MORSE CODE ACTIVITY PACK



unruly
Splats



MORSE CODE

SPLATS MESSAGING SERVICE

This activity comes with a video: [Morse Code!](#)

Be sure to submit your **activity three** code to your teacher so Crash can get your message!

Trouble sharing projects? Check out Virtual Splats Guides for [Chrome](#) or [iPad](#)

Activity 1: Intro to Morse code

Blocks you will use during this activity:

when program starts

light splat

delay

1. What is Morse code?

Before the invention of the telephone, the telegraph was the fastest way for messages to be sent across long distances.



Telegraph key and sounder. The key was used for transmitting the message, the sounder audibly operated, and enabled the operator to hear the incoming message.

The telegraph used pulses of electricity across wire to communicate letters and numbers. The length and number of electrical pulses were formed using a common language, Morse Code.

In Morse code, short and long pulses, written as dots '•' and dashes '-', are used to form letters and numbers. Using long strings of dots and dashes, people can send full messages to each other using only a wire, a sound, or blinking light! Until other methods of communication became more common (such as the TELEPHONE) Morse code

was a very common and important way for messages to be sent.

Today Morse code is still used as an emergency backup all over the world!



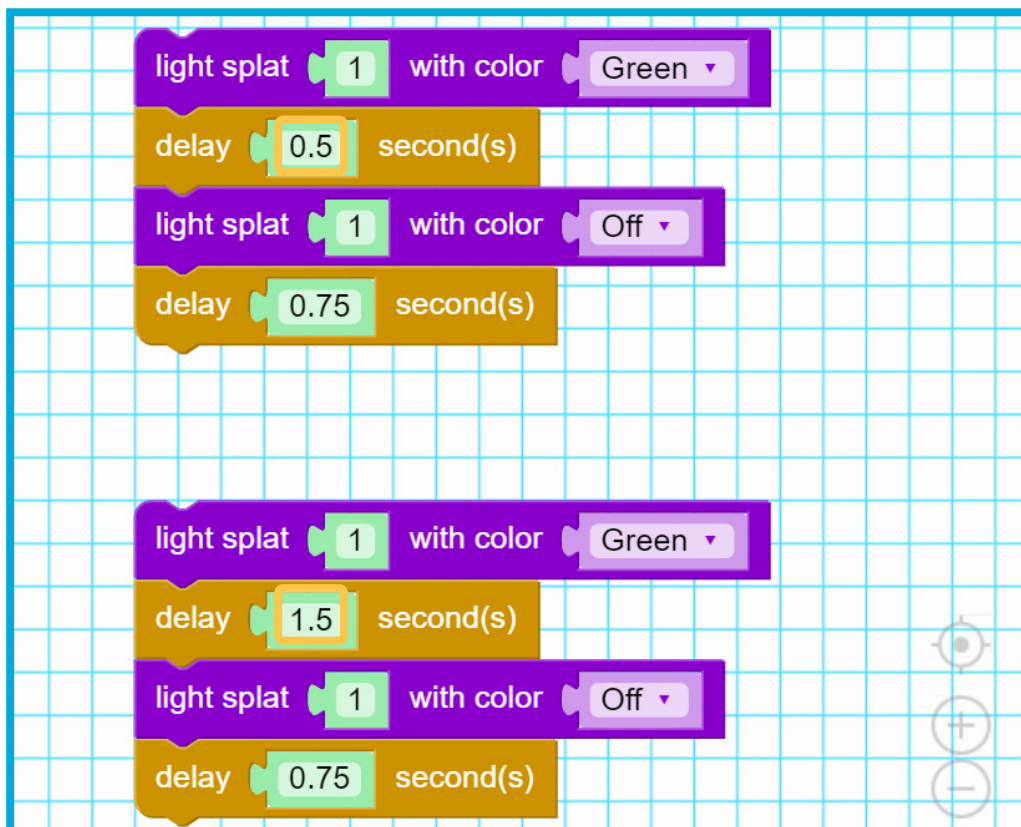
2. Morse code and Splats!

MORSE CODE ALPHABET

A · -	B - ...	C - . - .	D - ..	E ·	F · · - ·
G - - ·	H · · · ·	I · ·	J · - - -	K - · - ·	L · - · ·
M - -	N - ·	O - - -	P · - - ·	Q - - · -	R · - ·
S · · ·	T -	U · · -	V · · · -	W · - -	X - · · -
Y - · - -	Z - - · ·	1 · - - - -	2 · · - - -	3 · · · - -	4 · · · · -
5 · · · · ·	6 - · · · ·	7 - - · · ·	8 - - - · ·	9 - - - - ·	0 - - - - -

We can program Splats to send Morse code with flashing lights or with sound. In these activities we will use flashing lights. Because each letter is made with a series of short and long signals, we can build them by turning the Splat LED on and off for different lengths of time.

Let's start by building our basic blocks: a dot (short) and dash (long).

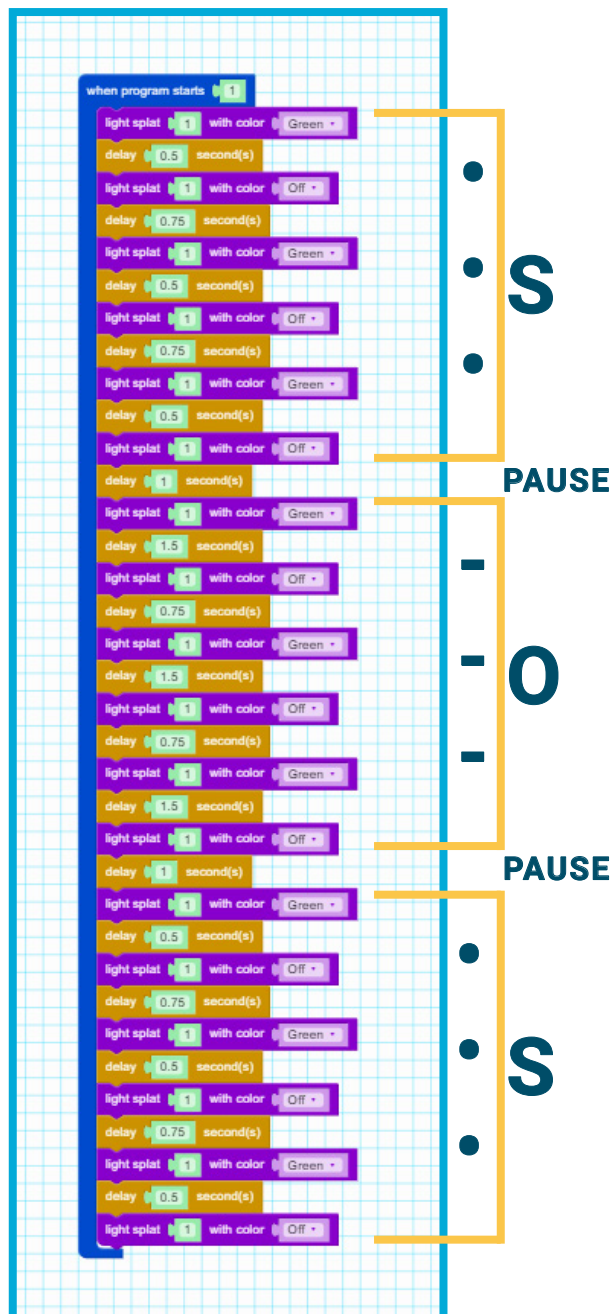


The image shows two Scratch code snippets on a blue grid background. The first snippet, representing a 'dot', consists of a 'light splat 1 with color Green' block followed by a 'delay 0.5 second(s)' block, then a 'light splat 1 with color Off' block followed by a 'delay 0.75 second(s)' block. The second snippet, representing a 'dash', consists of a 'light splat 1 with color Green' block followed by a 'delay 1.5 second(s)' block, then a 'light splat 1 with color Off' block followed by a 'delay 0.75 second(s)' block. On the right side of the grid, there are three circular icons: a target, a plus sign, and a minus sign. In the bottom right corner, there is a small blue square icon with a white star and the number 2.

Now let's build our first message: SOS. S O S is easy to remember and is known around the world as a sign that the person sending the message needs help right away. S in Morse code is three dots (•••) and O is three dashes (- - -)!

Duplicate your dot and dash block groups until you have enough to stack three shorts, three longs, and three shorts. After each group of three, add in a one second delay, to let the receiving person know that letter has ended.

Don't forget to test your code after each and every change you make!





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Activity 2: Function Blocks

Blocks you will use during this activity:

when program starts

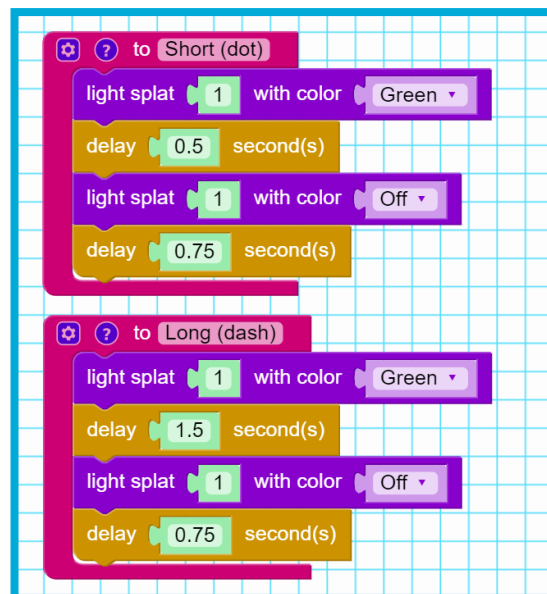
function

light splat

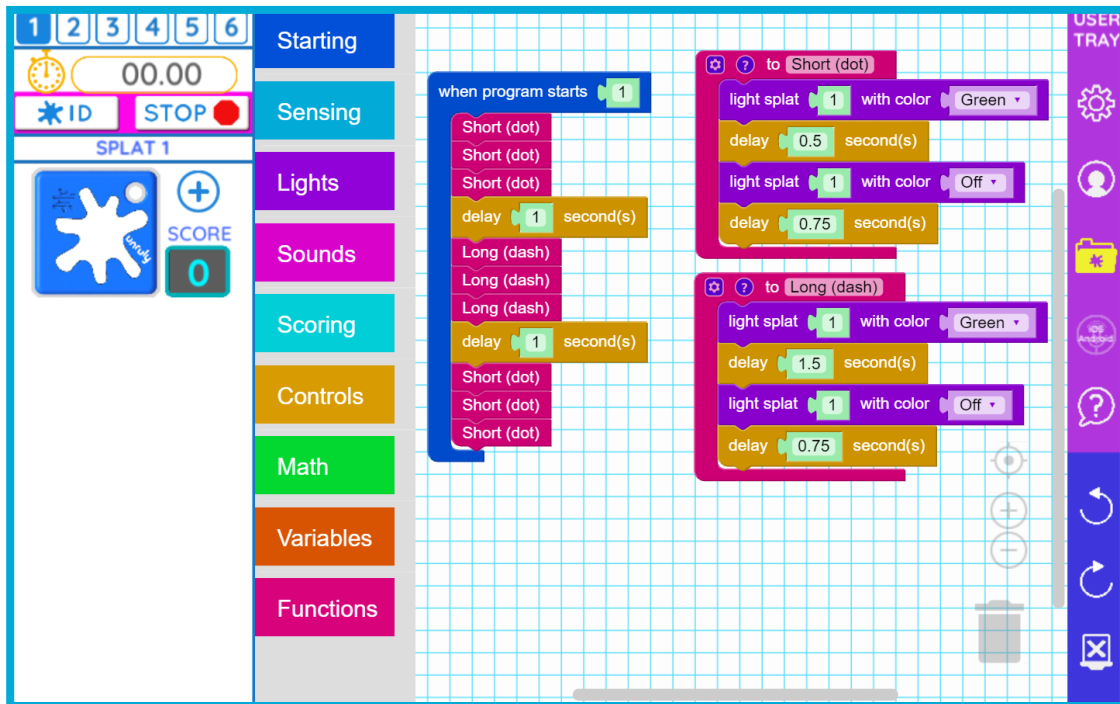
delay

Functions are a way to package our code so we can easily reuse it later. With functions, we can give a specific sequence of blocks a name, and use that name to re-use or *recall* those blocks later.

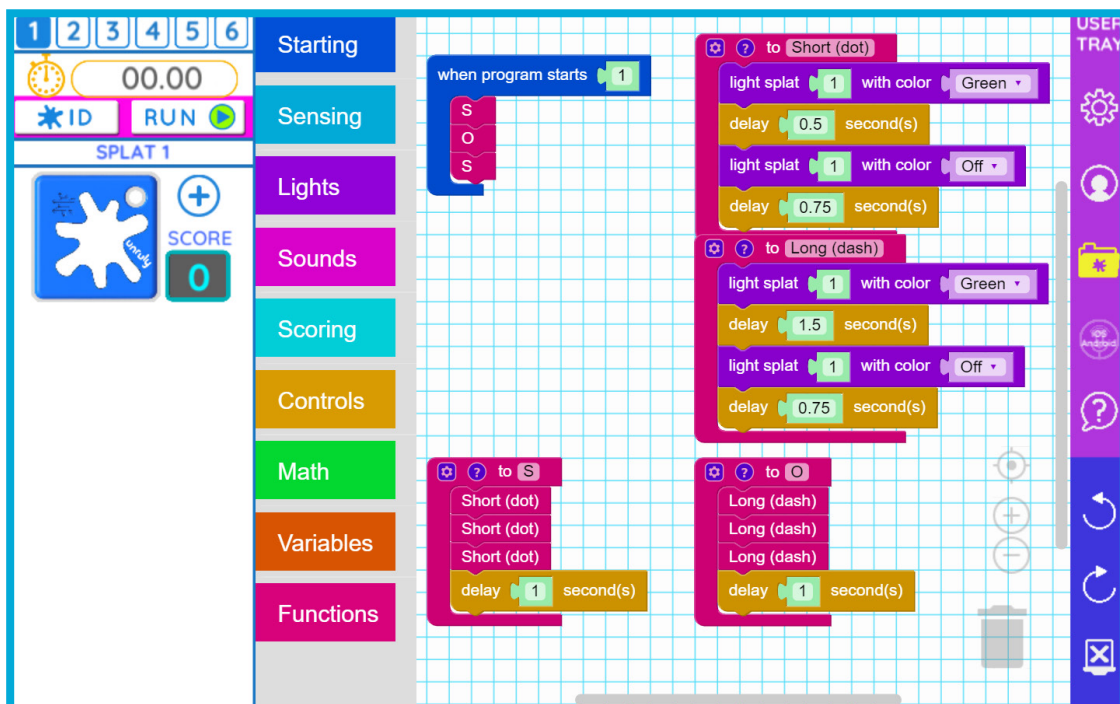
Using functions makes programs easier to read and write! Let's start by building the functions for dots and dashes. Drag out a new 'do something' function block, add your dot or dash blocks, and rename them!



Let's build our SOS message again, but using our dot and dash functions.



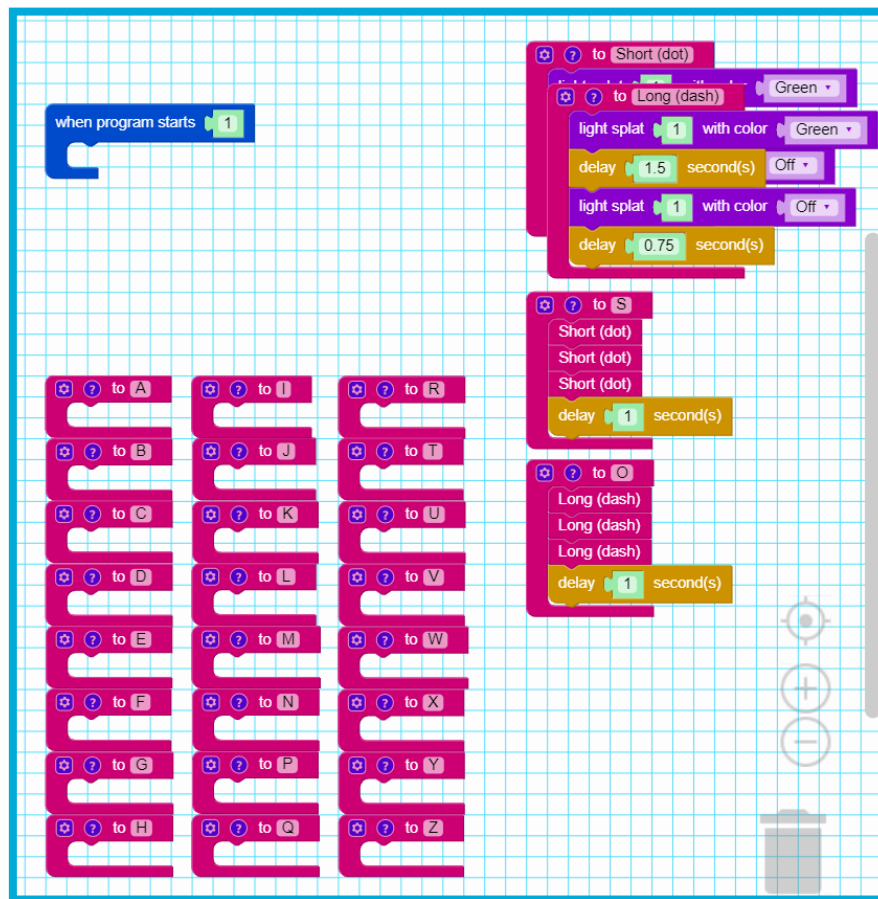
The Dash and Dot functions were very helpful in clearly building SOS, but we can do even better. We can build the letters, S, O, and other functions too.



Test this new code and make sure it works the same as your previous one!



Now that we've got the hang of two letters, let's take on the rest of the alphabet. For each letter A-Z, make a new function.

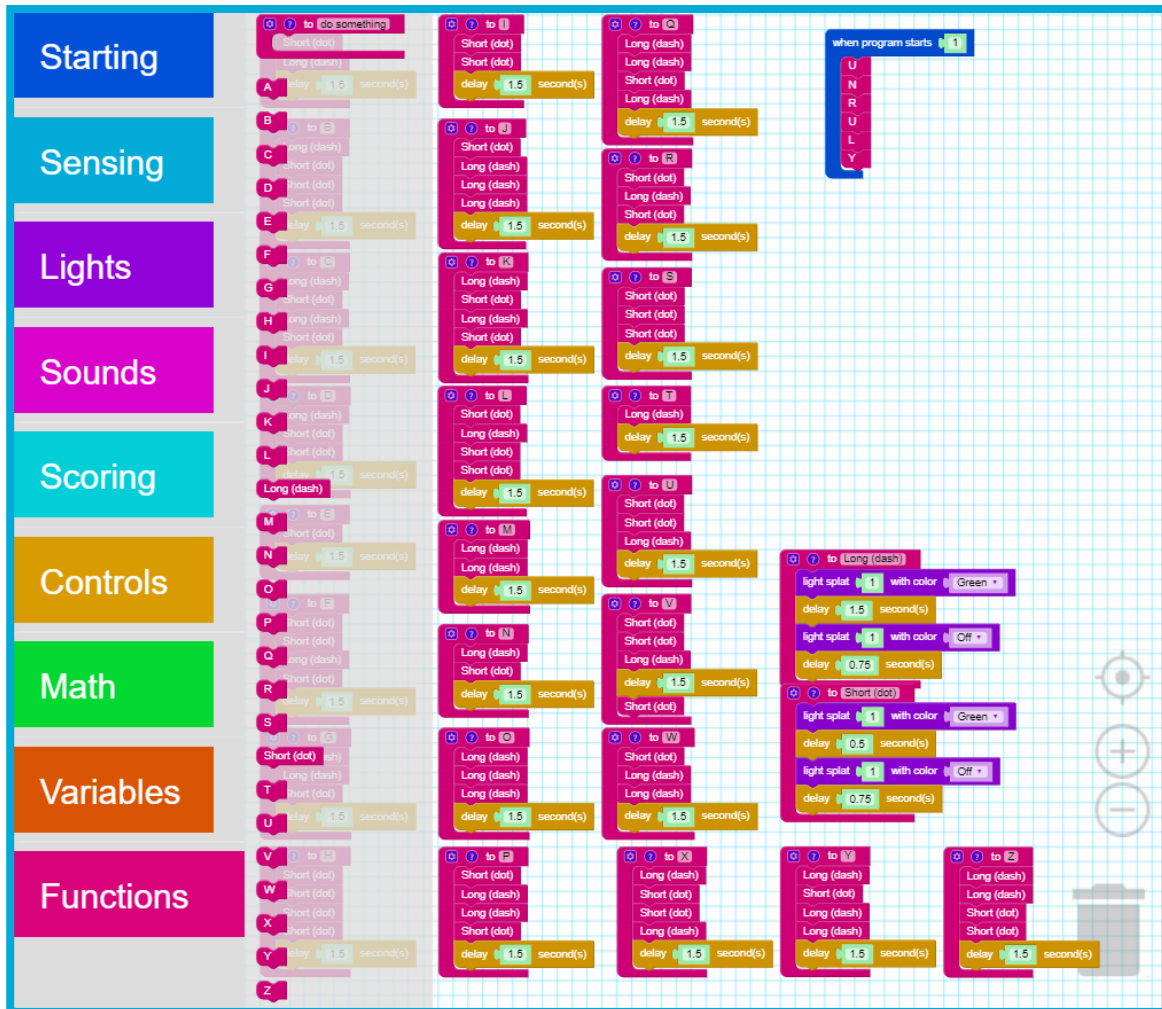


MORSE CODE ALPHABET

A · -	B - ...	C - · - ·	D - · ·	E ·	F · · - ·
G - - ·	H · · · ·	I · ·	J · - - -	K - · - ·	L · - · ·
M - -	N - ·	O - - -	P · - - ·	Q - - · -	R · - ·
S · · ·	T -	U · · -	V · · · -	W · - -	X - · · -
Y - · - -	Z - - · ·	1 · - - - -	2 · · - - -	3 · · · - -	4 · · · · -
5 · · · · ·	6 - · · · ·	7 - - · · ·	8 - - - · ·	9 - - - - ·	0 - - - - -

Because we took the time to build the WHOLE alphabet, we can quickly and clearly code different words to blink out in Morse code.

Let's try it out by building 'UNRULY'! Drag out each letter from the functions section and place them under a **when program starts** block. Press run to decode your message. Make sure to have a piece of paper and pencil nearby to record the dashes and dots. Does your message make sense?



Let's get ready to send Crash a message!





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Activity 3: Transmit your message!

Blocks you will use during this activity:

when splat pressed

function

light splat

delay

We need to get Crash a message. Crash has requested the following word types, but has only been able to receive messages via Morse code!

For each of these word types, pick a word, and write down the code.

Word Type	Your Chosen Word	Morse Code Translation
Animal	PIG	• - - • / • • / - - •
Place		
Plural Noun		
Famous Person		
Noun		
Verb (ending in -ing)		



Once completed, submit and remember the six words that you chose!





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Activity 4: Solve the code

Check out the [coded message](#) here!

We have copied the dots and dashes for you:

- - • - - - / - • • • • - - • • - • - • - • • •

If you are having difficulties translating the video or the dots and dashes, don't be afraid to ask your teacher for help!

Once you have the coded message translated, [go to this link](#), and bring your six words from Activity 3 to see what Crash needed the words for.