the *BumbleBee*

built by N. Escobar

github.com/nickesc/BumbleBee

The BumbleBee

The *BumbleBee* is a portable word game generator – its games are called *Bees*.

defies

15/48   64

◀X I U **D** E S F▶

This is an example of a *Bee* from the *BumbleBee*

It's *keyletter* is D and has the *letterlist*: X I U D E S F

Each *Bee* presents you with a *letterlist*, including one *keyletter*. The goal of the game is to make as many words as possible only using the letters in the *letterlist*. Each word adds to your *score*, and the game is won when all words are guessed.
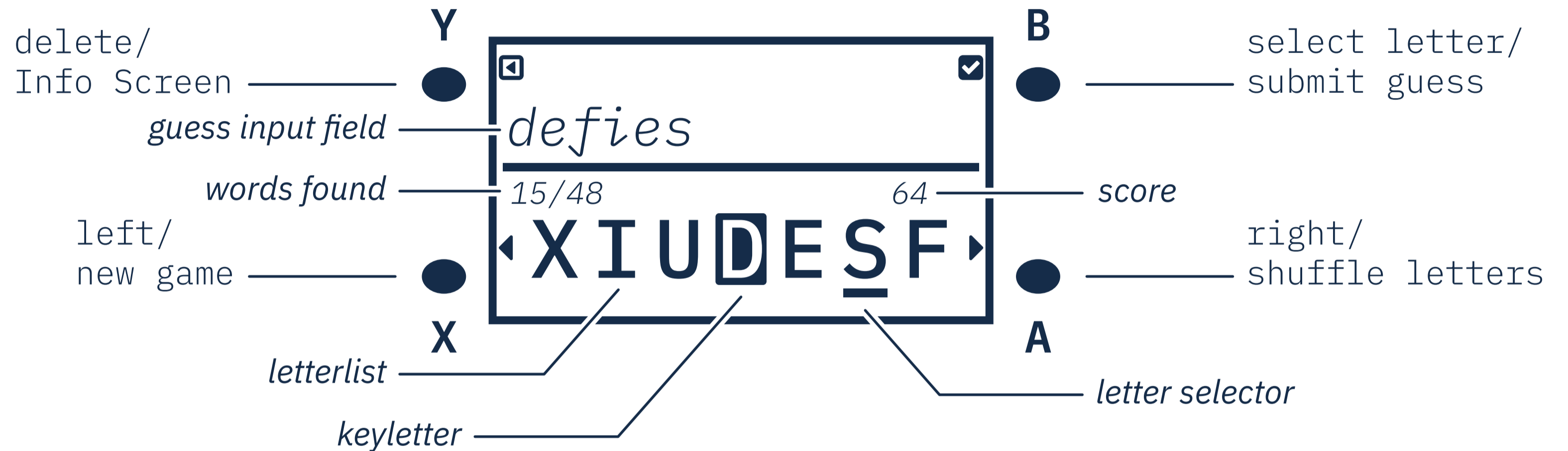
How to Play

Rules:

- The *keyletter* must appear at least once in every guess
- Letters can be used more than once in a guess
- Guesses must be at least four letters and less than sixteen letters
- Guesses must be in English
- Guesses cannot be proper nouns (i.e.: Italian or Google don't count)
- Words that have already been found do not add to your *score*

The game is played by constructing words to guess using the *keyletter* and the letters from the *letterlist*. Once you're happy with your guess, you can submit it and the *BumbleBee* will check whether or not the word is present in the *wordlist*. Successful guesses are scored based on their word length.
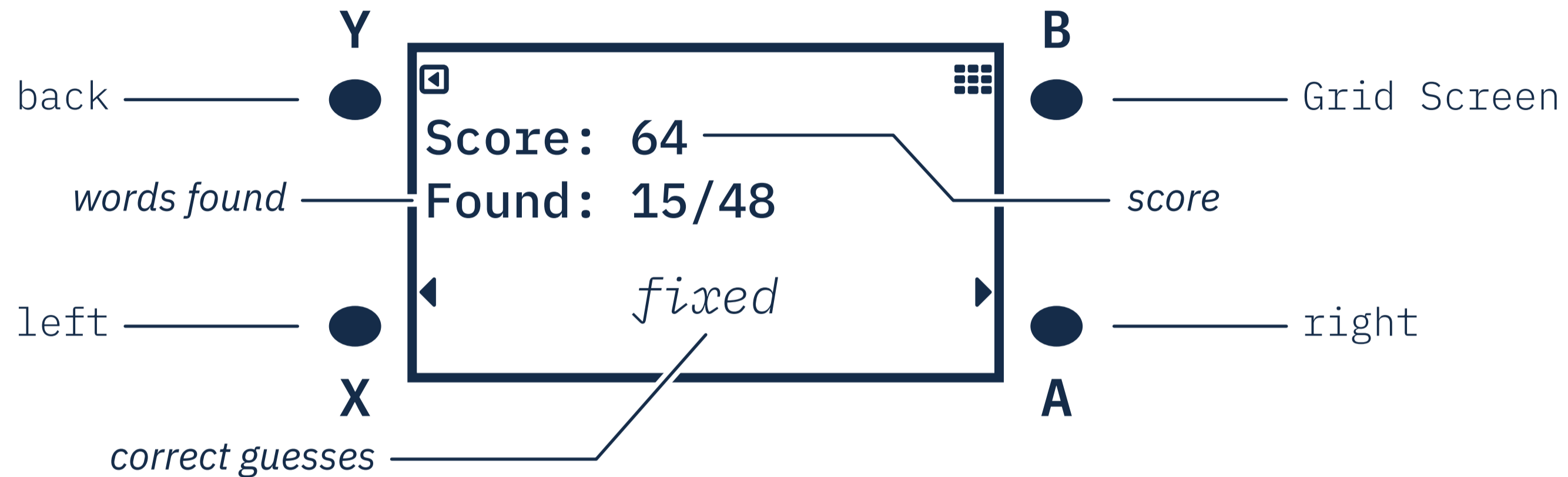
Game Screen

delete/
Info Screen

Y

guess input field

defies

words found — 15/48

left/
new game

X

◄ X I U D E S F ►

B

select letter/
submit guess

64 — score

right/
shuffle letters

A

letterlist

letter selector

keyletter

The Game Screen has the `letterlist` and the guess input. To move the letter selector right or left press the *A* button or the *X* button. To select a letter to add to the guess press the *B* button, and to delete the last letter from the guess press the *Y* button.

Other functions can also be accessed by holding down the buttons. To shuffle the `letterlist` hold the *A* button. To submit the guess hold the *B* button. To generate a new *Bee* hold the *X* button. Winning a *Bee* will also generate a new *Bee*. To swap to the Info Screen hold the *Y* button.
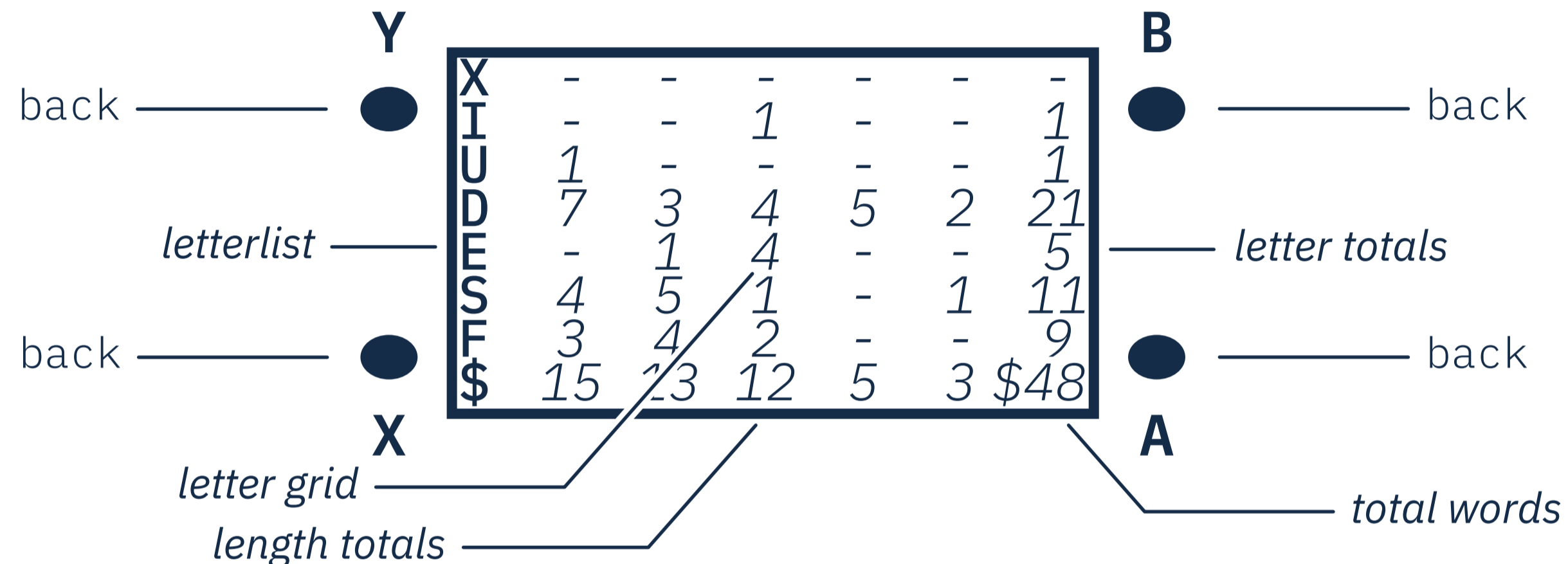
Info Screen

Y — back

words found

left

X — correct guesses

Score: 64 — score
Found: 15/48

fixed

B — Grid Screen

right

A

The Info Screen shows you information about the words that you've found so far. It shows your current `score` and number of words found, as well as a scrollable list of the words you've guessed correctly.

To scroll the correct-guess list right or left press the *A* button or the *X* button. To swap to the Grid Screen press the *B* button. To swap back to the Game Screen press the *Y* button.

Grid Screen

Y — back

B — back

letterlist

letter totals

X	-	-	-	-	-	-
I	-	-	1	-	-	1
U	1	-	-	-	-	1
D	7	3	4	5	2	21
E	-	1	4	-	-	5
S	4	5	1	-	1	11
F	3	4	2	-	-	9
$	15	13	12	5	3	$48

X — back

A — total words

letter grid

length totals

The Grid Screen provides you with hints about the words in the Bee's $wordlist$. Press any button to swap back to the Info Screen.
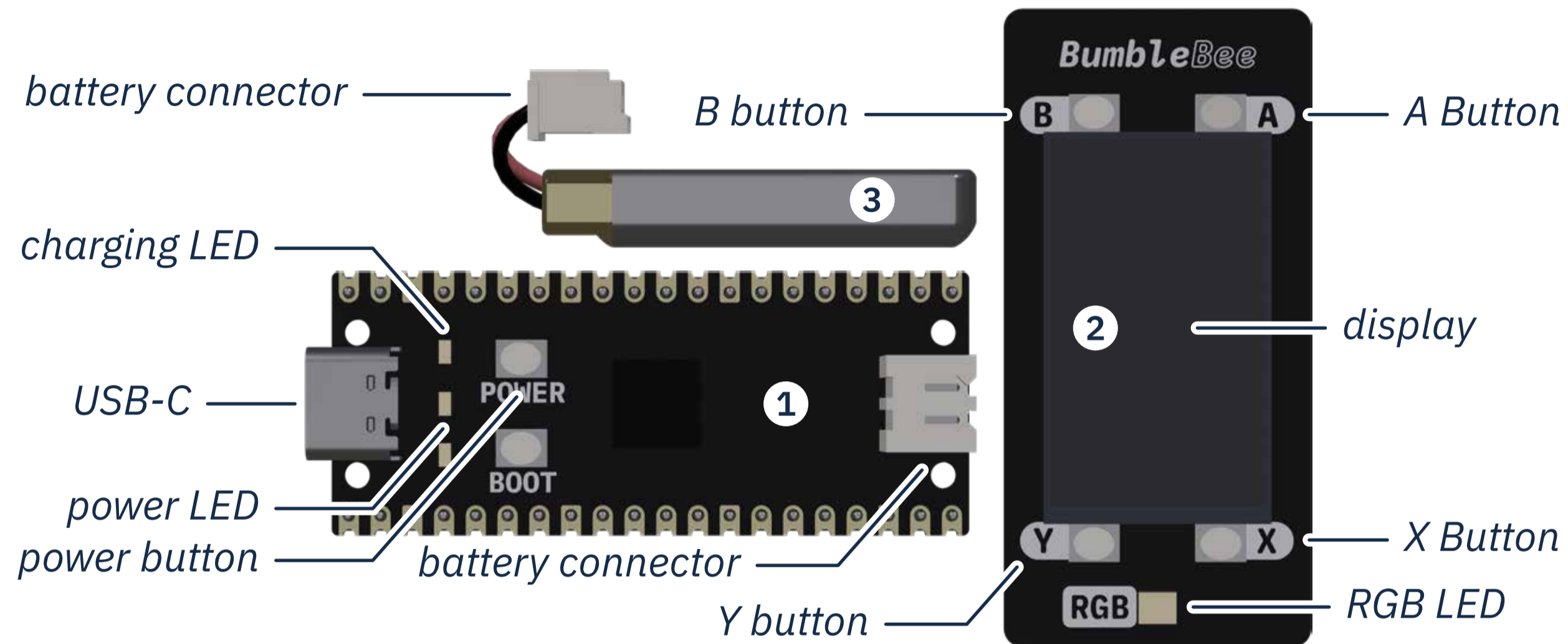
Each row represents a letter in the Bee's $letterlist$.

Each interior column represents a word length in the Bee's $letterlist$, starting at four and going up until the maximum word length.

Each interior cell represents the number of words in the $letterlist$ that have the column's word length and start with the row's letter.

The right column shows the total number of words that start with each row's letter. The bottom row shows the total number of words with each column's word length.

The Device

battery connector

charging LED

USB-C

power LED

power button

battery connector

Y button

BumbleBee

B button

A Button

display

X Button

RGB LED

B **A** **1** **2** **3** **Y** **X** **RGB** **POWER** **BOOT**

Components:

1 Pimoroni Pico Lipo (16MB)

2 Pimoroni Pico Display Pack

3 110 mHa 3.7v LiPo battery

⚠ Warnings:

DO NOT press the button labeled BOOT, it may corrupt the device

Try not to disconnect or remove the LiPo battery from the device

Connecting the device to a computer will prevent it from saving

About the project:

The *BumbleBee* was built as a gift for my mom. She's a fan of *The New York Times* Spelling Bee, which the *BumbleBee* is based on, and this lets her play as many games as she wants. The device is programmed with CircuitPython, but the game can also be played with Python in a command line.

Scoring:

4 letter words are worth 1 point
5+ letter words aren worth 1 point per letter
Panagrams (use all letters) add 7 extra points
Buzzwords (1 per puzzle) add 10 extra points

Tips:

The device automatically saves your game, and returns you to your last game when turned off and on.

While the device loads and thinks, it will turn the front LED red. If the light is on, the device is working.

The device may take several minutes to create a new game; its processor is small and trying its best.

The *BumbleBee*'s dictionary does not contain every English word. Again, it is not powerful, and needs a smaller word set to function.

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