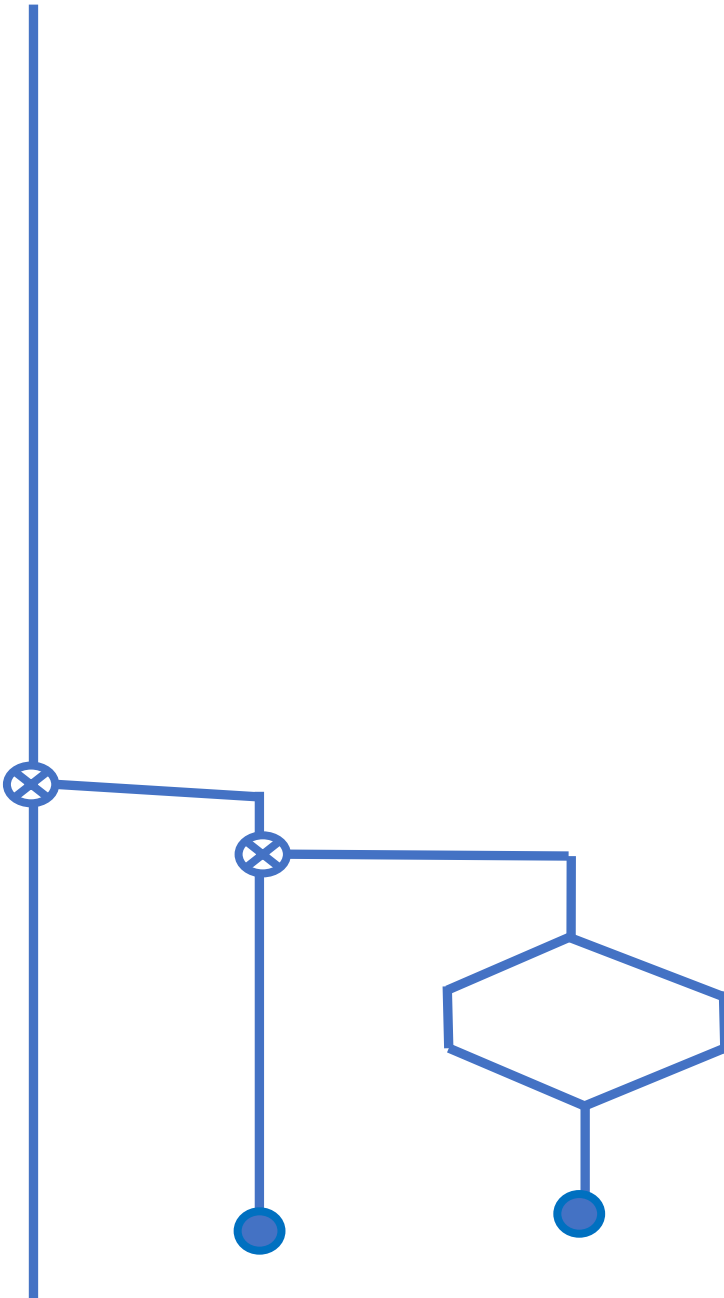


Wordle Tool Kit

SVFIG

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The Wordle Game

1. Guess a five letter word.

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2. You have six tries.

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1. Guess a five letter word.
2. You have six tries.
3. A correct letter in the correct position will be shown in GREEN.
4. A correct letter, but in the wrong position will be shown in GOLD.

Wordle

R	I	D	G	E
D	O	G	I	E
D	I	O	D	E
O	X	I	D	E

I D E

D O I E

Key D & E

Winner



The Words

```
opacity: 0;\n  }\n </style>\n <div class="toast"></div>\n';var bo=function(e){  
V 0),e.attachShadow({mode:"open"}),e}return r(n,[{key:"connectedCallback",value:func  
P t=this.shadowRoot.querySelector(".toast");t.textContent=this.getAttribute("text"),  
E setTimeout((function(){t.classList.add("fade")}),this._duration),t.addEventListener  
customElements.define("game-toast",bo);var  
ko=["cigar","rebut","sissy","humph","awake","blush","focal","evade","naval","serve  
ath","fresh","crust","stool","colon","abase","marry","react","batty","pride","flos  
epay","digit","crate","cluck","spike","mimic","pound","maxim","linen","unmet","fle  
stout","panel","crass","flume","offal","agree","error","swirl","argue","bleed","del  
"golem","lusty","loopy","round","audit","lying","gamma","labor","islet","civic","fo  
,"guild","aback","motor","alone","hatch","hyper","thumb","dowry","ought","belch","  
,"erode","world","gouge","click","briar","great","altar","pulpy","blurt","coast",  
It a","finer","surer","radio","rouge","perch","retch","wrote","clock","tilde","store"  
X al","conic","masse","sonic","vital","trace","using","peach","champ","baton","brake  
bus","boost","truss","siege","tiger","banal","slump","crank","gorge","query","drin  
10 rimp","knoll","sugar","whack","mount","perky","could","wrung","light","those","moi  
cynic","aroma","caulk","shake","dodge","swill","tacit","other","thorn","trove","blo  
20 "sweet","month","lapse","watch","today","focus","smelt","tease","cater","movie","sa  
/e ,"stove","lowly","snout","trope","fewer","shawl","natal","comma","foray","scare",":  
30 ","oxide","plant","olive","inert","askew","heist","shown","zesty","trash","larva","  
g","tipsy","metal","yield","delve","being","scour","glass","gamer","scrap","money"  
se","froth","depth","gloom","flood","trait","girth","piety","goose","float","donor  
ady","rusty","retro","droll","gawky","hutch","pinto","egret","lilac","sever","field
```

Our Challenge

1. Develop an alphabetic grid such that . . .
2. When an unknown word is tested against a known word . . .
3. The grid notes the letters known by their location (Green) and the letters used but in an unknown location (Gold).
4. The purpose is to sequentially improve the grid as a model of the unknown word(s).

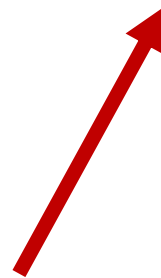
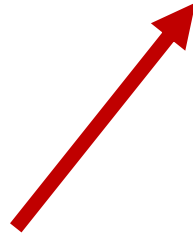
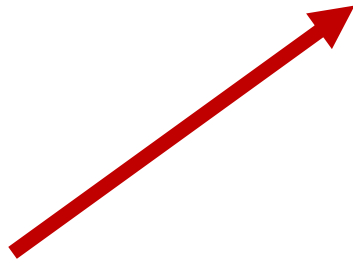
Empty Report Grid

Letter	Usage	Allowed	Required
A	0	.....	.....
B	0	.....	.....
C	0	.....	.....
D	0	.....	.....
E	0	.....	.....
F	0	.....	.....
G	0	.....	.....
H	0	.....	.....

Status

Gold

Green.



Test Example

```
create *unknown z," ACCBE"  
create *guess   z," ABCCD"
```

Outer Loop

```
: build-table ( --- )  
  setup! By-Letter ;  
  
: By-Letter ( --- )  
  5 0 do i do-green loop  
  5 0 do i do-gold loop  
  5 0 do i do-none loop ;
```

Result Green

Letter	Usage	Allowed	Required
A	2	.....	A.....

Known location, Green

Unknown	A CCBE	⇒	0 CCBE
Guess	A BCCD	⇒	1 BCCD

do-green logic

For the i -th position

Compare the i -th **guess** letter to i -th unknown letter

If equal 'or' the Usage byte by '2'

Put \$FF into the **Required** field i -th byte.

Cancel the i -th guess and i -th unknown letters
to prevent repeated comparisons.

Then

do-green code

```
: do-green ( position --- )
  dup **unknown + c@ -alpha
  over **guess + c@ -alpha dup rot =
  if dup 2 or-usage
    FFh 2pick 2pick Required* write-field
    0 2pick **unknown + c!
    1 2pick **guess + c!
  then
  2drop ;
```

Result Gold

Letter	Usage	Allowed	Required
A	2	.....	A.....
B	1	B.BBB	.....

Used, Unknown location, Gold

Unknown	ACCBE	⇒	0CC0E
Guess	ABCCD	⇒	11CCD

do-gold logic

```
: do-gold ( position --- )
  Get this letter's grid position
  Over 5 unknown letters
  Compare the guess letter to the i-th unknown
  IF equal
    IF first use, set 5 bytes in the
      Allowed field to $FF
      Or '1' into the Usage byte
    then
      Set the Allowed byte for this letter to '0'
      Cancel this guess and i-th unknown
        letters to prevent repeated comparisons.
      leave then
  loop
```


do-gold code

```
: do-gold ( position --- )
    dup **guess      + c@ -alpha
  5 0 do dup **unknown i + c@ -alpha =
    if dup read-usage 1 and 0=
      if ( first use)
        FFFFFFFFh over Allowed* locate-field      !
          FFh over Allowed* locate-field 4 + c!
          dup 1 or-usage then
            0 over Allowed* locate-field 3pick + c!
            0      **unknown i + c!
            1 2pick **guess      + c!
            leave
          then
        loop 2drop ;
```

Result Green & Gold

Letter	Usage	Allowed	Required
A	2	.....	A.....
B	1	B.BBB	.....
C	3	CCC.C	..C..

Two locations, Gold & Green

Unknown	ACCBE	0000E
Guess	ABCCD	1111D

Result Tested & Unused

Letter	Usage	Allowed	Required
A	2	.....	A.....
B	1	B.BBB	.....
C	3	CCC.C	..C..
D	4	.....	.....

Tested and unused

Unknown	ACCBE	0000E
Guess	ABCCD	1111D

do-none logic

```
: do-none ( position --- )  
  test the i-th guessed letter  
  if the holds an ascii letter (>=A)  
    it has not been used  
    'or' a $4 into the usage byte.  
then
```

do-none code

```
: do-none ( position --- )  
  **guess + c@ dup  
  ascii A >=  
  if -alpha 4 or-usage else drop then ;
```

Result Untested

Letter	Usage	Allowed	Required
A	2	.....	A.....
B	1	B.BBB	.....
C	3	CCC.C	..C..
D	4	.....	.....
E	0	.....	.....

Untested

Unknown	ACCBF	0000E
Guess	ABCCD	1111D

A Sample Analysis of 'BEACH'

Letter	Usage	Allowed	Required
A	2	.....	..A..
B	1	.BBBB	.....
C	1	CCC.C	.....
D	0	.....	.....
E	4	.....	.....
F	0	.....	.....
H	4	.....	.....

Unknown SCABS S000S
Guess BEACH 1E11H



August Forth Challenge

Build on our tool set to create a Wordle solver.

Accept data from files.

Format for analysis.

Perform the analysis

Report the solution.