

Hangman Project

Brief:

Design a Scratch version of Hangman for 5-letter words added by the user.

Introduction:

In this project we will be using lists and strings.

A **list** (or *array*) is a special tool that can hold and find the position of many items at once. We will use three:

1. One list to list out words the game can pick from
2. Another to list each letter of the chosen word
3. And a third to display each known/unknown letter



Empty list



List with items stored in it

A **string** is a variable that holds a 'string' of letters/text. Maybe one letter only, maybe a whole word or maybe a much, much longer amount of letters. All three lists used in this game are holding strings for example.

Ingredients: (Set-Up Needed):

- 1 Sprite** **It will need a head-shaped costume also**
- 3 variables:** **word** (to hold the selected word)
 errors (to keep track of the number of wrong guesses)
 x (used to keep track of letter position)
- 2 (blank) lists:** **lettersOfWord** (to separate each letter in my word)
 guess (to show letters that are correctly guessed)
- 1 (not blank) list:** **wordList** (add words you would like people to guess)

Recipe: (Pseudocode)

When  clicked

1. **Set up my tools to be ready to draw a hangman (setUpPen)**
2. **Set up what I want my 2 lists and 3 variables to be at the start of the game and pick a random word from the wordList**
3. **Set the guess to ??????**
4. **Get each letter position (x) from the word and add each letter into the lettersOfWord list.**
5. **Keep asking for letters until all the letters are guessed or 6 wrong letters (errors) have been typed**
 - a. **If the letter (answer) typed is in the lettersOfWord list then:**
 - i. **Check each letter position (x) in the lettersOfWord list and replace each ? in the guess list with the letter (answer) for each letter position (x).**
 - b. **But if not (else) a correct answer ask for the showStickman function/routine increase the errors by 1 and repeat step 5 again**
6. **If step 5 above is finished then turn and move the sprite to the Hangman's Head to say :x or Game Over.**

Set Up Game

1.

2.

3.

4.

5.

a.

i.

b.

Main Gameplay

Game Over 6.

```
when clicked clicked
  setUpPen
  delete all of lettersOfWord
  delete all of guess
  set word to item random of wordList
  set errors to 1
  set x to 1
  repeat 5
    add ? to guess
  repeat 5
    add letter x of word to lettersOfWord
    change x by 1
  repeat until guess = lettersOfWord or errors > 6
    set x to 1
    ask Guess a Letter and wait
    if lettersOfWord contains answer? then
      repeat 5
        if item x of lettersOfWord = answer then
          replace item x of guess with answer
          change x by 1
        else
          showStickman
          change errors by 1
    turn 135 degrees
    move 100 steps
    show
    switch costume to costume1
    say :X
    move 200 steps
```

Commands to Draw Stickman in Stages

Draw Base

Draw Pole

Draw Arm

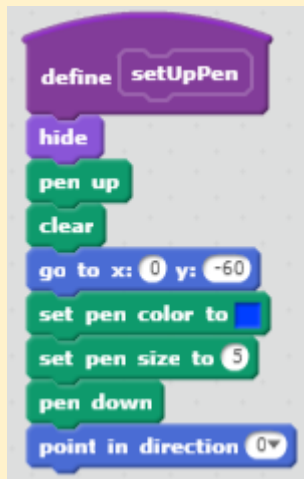
Draw Head

Draw Arms & Body

Draw Legs

```
define showStickman
  if errors = 1 then
    turn 90 degrees
    move 50 steps
    move -100 steps
  if errors = 2 then
    move 50 steps
    turn 90 degrees
    move 200 steps
  if errors = 3 then
    turn 90 degrees
    move 100 steps
  if errors = 4 then
    turn 90 degrees
    move 50 steps
    switch costume to costume1
    stamp
    switch costume to beetle
  if errors = 5 then
    move 100 steps
    move -50 steps
    turn 45 degrees
    move 25 steps
    move -25 steps
    turn 90 degrees
    move 25 steps
    move -25 steps
  if errors = 6 then
    turn 45 degrees
    move 50 steps
    turn 45 degrees
    move 40 steps
    move -40 steps
    turn 90 degrees
    move 40 steps
    move -40 steps
```

Set Up the Pen to Draw

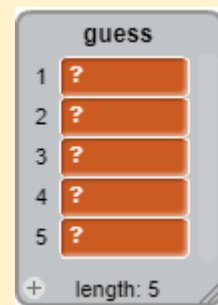



Serving Suggestions

(Ideas to make the game your own version of cool)

1. Make the word being guessed display horizontally:

more like this  instead of this



2. Change the game to accept any length of word  and not just 5-letter words.
3. Make a better 'Game Over' routine.
4. Add a title screen.
5. Add another list to show the letters which have been guessed.
6. Make the stickman warn the user he is in trouble before the game is over.
7. Make a background for the game.

Data | More Blocks

Make a Variable

- errors
- word
- x

set x to 0

change x by 1

show variable x

hide variable x

Make a List

- guess
- lettersOfWord
- wordList

Data | More Blocks

Make a Block

setUpPen

showStickman

Add an Extension

Edit Block

setUpPen

► Options

OK Cancel

Hangman
by juliaandleo (unshared)

wordList

- apple
- books

+ length: 2

lettersOfWord

- a
- p
- p
- l
- e

+ length: 5

guess

- ?
- ?
- ?
- ?
- ?

+ length: 5

x: 221 y: -41

Sprites

New sprite:

Beetle

x: 100 y: 90 direction: 0°

rotation style:

can drag in player:

show:

Scripts | Costumes | Sounds

New costume:

- beetle 85x78
- costume1 195x180