



Pencilcode.net

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# Introduction

**PENCIL**  
c o d e

★ New Account ↗ Login


## Dream it. Code it.

Learn professional programming languages using an editor that lets you work in either blocks or text. Create art, music, games, and stories. Or invent a program that will change the world.

[Let's play!](#)

```
tree = (size) ->
  if size < 5
    dot pink
    return
  fd size
  angle = 20 + rand(10, 30)
  rt angle
  tree size * .7
  lt 2 * angle
  tree size * .7
  rt angle
  bk size

pen saddlebrown
tree 60
```



**Draw** **Jam** **Imagine**

**Get Creative**  
Get some ideas for [art](#), [music](#), or [games](#). Or to code anything, [start on a blank page.](#)

## Why pencilcode?

- Simple layout
- Blocks and Written code
- Art, Music, Math, LA applications
- Student engagement
- Growth Mindset

# Layout



Pencil Code Gym

Draw

Jam

Imagine

Reference



First Dot

## First Dot

More Ideas

Pick a **color** and make a dot. Can you adjust the color and the size?



Draw a Snowkid



Line Techniques



Straight Line Shapes



Curved Shapes



Symmetric Drawings



Remote Control



Making Commands



Filled Shapes



Repeated Patterns

- Move
- Art
- Text
- Sound
- Control
- Operators
- Sprites
- Snippets

fd 100

rt 90

lt 90

bk 100

rt 180, 100

lt 180, 100

speed 10

speed Infinity

home()

turnto 270

moveto 100, 50

movexy 30, 20

jumpto 100, 50

```
1 t = (new Turtle red)
2 dot red, 100
3 t = (new Turtle yellow)
4 fd 100
5 box yellow, 50
6
```



Reset

Reference: colors dot pen fd



# Reference Section



Pencil Code Gym

Draw

Jam

Imagine

Reference

## Reference

### Basic Commands

dot

pen

fd

bk

rt

lt

### CoffeeScript

comments

do

for

functions

if

switch

variables

true

new

false

arrays

boolean

objects

await

### Drawing

speed

curves

cg

ct

cs

color names

fill

## pen changes the pen color

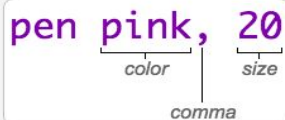
Pen will pick any color (see [the color table](#))

pen blueviolet



Pen accepts an optional second argument, which is the width of the pen in pixels. Remember that arguments need to be separated by a comma.

pen pink, 20



The `pen path` version of the `pen` command is used with `fill`

```
1 pen blueviolet
2
3 fd 100
4
```





Draw

Create art



Jam

Make music



Imagine

Code an adventure

## Get Creative

Get some ideas for [art](#), [music](#), or [games](#). Or to code anything, [start on a blank page](#).

## Resources

[About Pencil Code](#) [Material for Teachers](#) [Teaching Manual](#) [Pencil Code Book](#)

[Open Blank Editor](#) [Shared Student Projects](#) [Browse All Users](#)

[Printable Activities](#) [Pencil Code Blog](#) [Who We Are](#)

Pencil Code supports CoffeeScript, Javascript, CSS, and HTML.

Everything posted on Pencil Code is public and free to view, share, and copy.

Many Resources on the Page!

# Samples:

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- Setting up an algorithm to draw a polygon
- Create a remote control with buttons and commands
- Placing objects along a coordinate plane

# Helpful Links

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Pencilcode.net

[http://activity.pencilcode.net/home/worksheet/f  
lower.html](http://activity.pencilcode.net/home/worksheet/f<br/>lower.html)

[http://activity.pencilcode.net/home/worksheet/  
measuring.html](http://activity.pencilcode.net/home/worksheet/<br/>measuring.html)

<http://manual.pencilcode.net/>