Fireworks Program
in MSW Logo

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Previous Knowledge Needed

• Basic experimentation with movement commands in MSW Logo or other logo program.
• Created simple functions in MSW Logo (useful but not essential)
Programming Concepts

• Iteration loops (repeat 4 [fd 40 rt 90])
• Simple functions (procedure in MSW Logo)
• Random numbers
• Nesting one function within another
MSW Logo Codes Used

- repeat 4 [code]
- pu
- pd
- fd 60
- rt 90
- lt 80
- fd random 10
- setpc [255 0 0]
- setfloodcolor [0 0 0]
- fill

- repeats code in brackets
- pen up of the screen
- pen down on the screen
- forward 60
- right 90 degrees
- left 80 degrees
- fd random number up to 10
- set pen colour to red
- set fill colour
- fill anything on screen up to any lines

Note color is US spelling not UK colour spelling
RGB (Red Green Blue) Colour Codes

• Black [0 0 0]
• red [255 0 0]
• blue [0 0 255]
• yellow [255 255 0]
• pink [255 20 147]
• purple [128 0 128]
• green [0 255 0]
• white [255 255 255]

500 Colour Codes
http://cloford.com/resources/colours/500col.htm
Function called firework to make firework

Load up MSW Logo
File
Edit
type in firework in top box
ok
Add code underneath

NOTE
Try lots of different repeat patterns to find the best looking firework

TEST & IMPROVE
Test firework by typing it into the commander (interpreter)

DEBUG
Have you spelt everything correctly?
Have you used square brackets

```plaintext
pen down on screen
draw shape all code inside brackets gets repeated 16 times
pen up no drawing
```
Function called move to randomly place multiple fireworks

Load up MSW Logo

File
Edit
type in move in top box
ok
Add code underneath

```
to move
  fd 100
  fd random 50
  rt random 360
end
```

**TEST**
Test move by typing it into the commander (interpreter) it will move turtle but not draw any lines

**DEBUG**
Have you spelt everything correctly?

*fd 100 to move away from last firework*

*fd random number up to 50 to move further away*

*rt random number of degrees in any direction*
Function called yellow to change firework line colour

Load up MSW Logo
File
Edit
type in yellow in top box
ok
Add code underneath

```plaintext
setpc [255 255 0] end
to yellow
```

DEBUG
Have you spelt everything correctly?
Have you used square brackets?

setpc changes the pen colour
[255 255 0] is code for yellow
Function called red to change firework line colour

Load up MSW Logo
File
Edit
type in red in top box
ok
Add code underneath

DEBUG
Have you spelt everything correctly?
Have you used square brackets?
Have you left gaps between items

```
to red
setpc [255 0 0]
end
```

setpc changes the pen colour
[255 0 0] is code for red
Function called sky to make screen black

Load up MSW Logo
File
Edit
type in sky in top box
ok
Add code underneath

NOTE
Don’t type on to or end line
spelling needs to be as below
TEST
Test sky by typing it into the commander (interpreter)
DEBUG
Have you spelt everything correctly?
Have you used square brackets

Set the colour of the fill
[0 0 0] is black
fill the screen with the colour
Nest all functions inside final display function

Load up MSW Logo
File
Edit
type in display in top box
ok
Add code underneath

```
to display
sky
repeat 10 [firework yellow move firework red move]
end
```

**NOTE**
Don’t type on `to` or `end` line
spelling needs to be as below

**TEST**
Test display by typing it into the
commander (interpreter)

**DEBUG**
Have you spelt everything correctly?
Have you used square brackets

function **sky** will set a **black background**, **firework** will display a **firework**, **yellow** will change the **line colour**, **move** will move to a different part of the screen. This will be repeated 10 times.
Challenges

• Can you write code to create other pen colours? Can you edit **display** to include these?

• Can you create **firework2** which displays a different pattern? Can you edit **display** to include this new firework?

• Can you make your firework a solid fill of colour?