BASIC BEGINNERS SCRATCH – THE SHARK GAME 1.0

score 20

name:

date :

sensai:

Learn the basics of sprites, scenes, and scripts. Animate and control the shark to eat the fish until you reach the maximum score!

Script for shark

```
when up arrow key pressed
change y by 10

when down arrow key pressed
change y by -10

when right arrow key pressed
point in direction 90
move 10 steps

when left arrow key pressed
point in direction -90
move 10 steps
```

```
when [flag] clicked
set score to 0
forever
  next costume
  wait 0.5 secs
```

Script for fish

```
when [flag] clicked
show
forever
  move 20 steps
  turn ↻ pick random 1 to 10 degrees
  wait 0.5 secs
  if on edge, bounce
  turn ↻ pick random 1 to 10 degrees
  if touching shark ?
    change score by 10
    hide
    wait 3 secs
    go to x: pick random -240 to 240 y: pick random -180 to 180
    show
```

Script for stage

```
when [flag] clicked
switch to background underwater
forever
  if score > 100
    next background
    stop all
```
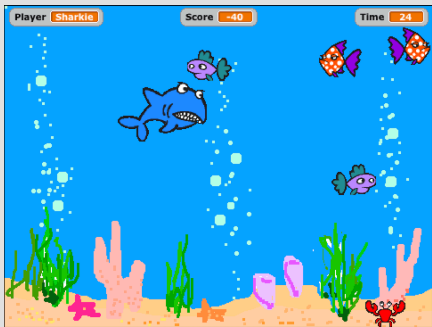
Now try this...

Can you make the fish move faster & appear quicker?
Can you make the game stop when the score is exactly 100?
Can you draw and use your own fish?
How would you make the game better? ….

_____

_____

_____

CoderDojo Wilmslow

Created & compiled by R. Curran (2014)

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BASIC BEGINNERS SCRATCH – THE SHARK GAME 2.0

Use your previous shark game and try adding these extras. Make the game more fun, a bit harder, learn more commands, and take it up to version2.0!

| | name: |
| date : |
| sensai: |

	Targets	Hints	Done?
LEVEL UP !	Make another fish for the shark to eat by duplicating your fish sprite	there's a "duplicate" button on the sprite toolbar or you can right-click on your sprite	
	Add a different colour "bad fish" which reduces your score by 10 if you eat it	duplicate sprite, change costume, negative score	
	Introduce a "GAME OVER" message when the game finishes and hide the fish	create a "GAME OVER" sprite, `hide`	
	Add a popping sound when eating a good fish	`play sound pop▼`	
LEVEL UP !!	Ask the player to enter their name at the start of the game and display it on screen	"ask and wait", use "broadcast" when the game has started to start the sprites moving	
	Create some backgrounds so that the bubbles appear to rise	copy and edit backgrounds	
	Add a crab which walks across the sea bed	`go to x: 0 y: 0`	
	Add a gong sound when eating a bad fish	`play sound pop▼`	
LEVEL UP !!!	Control the shark with the mouse rather than the cursor keys	`distance to ▼`	
	Change from using a maximum score to using a countdown timer to end the game	use a variable called "time", set to 30, wait 1 second, change by -1	
	Make the shark only chomp down when eating a fish	have the fish "broadcast" when they have been eaten and make the shark respond	
	Add a bubbles sound to play in the background all of the time until "game over"	forever, play sound until done	
LEVEL UP !!!!	Make another "bad" fish and make it chase the shark	duplicate sprite, what did you use to make the shark follow the mouse?	
	Add an instructions screen at the start of the game	add background until player enters their name	
	Make the crab do something interesting …	use your imagination & do something awesome !!!!	

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BASIC BEGINNERS SCRATCH – THE SHARK GAME 2.0

CHEAT SHEET!

Script for "good" fish

```
when I receive start_game
show
forever
    move 20 steps
    wait 0.5 secs
    turn ↻ pick random 1 to 10 degrees
    if on edge, bounce
    turn ↻ pick random 1 to 10 degrees
    if    touching Shark ?
        broadcast got_me
        play sound Pop
        change Score by 10
        hide
        wait 1 secs
        go to x: pick random -240 to 240 y: pick random -180 to 180
        show
```

```
when I receive end_game
hide
```

Script for shark

```
when I receive start_game
show
switch to costume shark-closed
forever if  distance to mouse-pointer > 10
    point towards mouse-pointer
    move 5 steps
```

```
when I receive got_me
repeat 2
    switch to costume shark-open
    wait 0.1 secs
    switch to costume shark-closed
```

```
when I receive end_game
hide
```

Script for "bad" fish - chasing

```
when I receive start_game
show
forever if  distance to Shark > 10
    point towards Shark
    move 2 steps
    if    touching Shark ?
        broadcast got_me
        play sound Gong
        change Score by -10
        hide
        wait 1 secs
        go to x: pick random -240 to 240 y: pick random -180 to 180
        show
```

```
when I receive end_game
hide
```

Script for "bad" fish - random

```
when I receive start_game
show
forever
    move 20 steps
    wait 0.1 secs
    turn ↻ pick random 1 to 10 degrees
    if on edge, bounce
    turn ↻ pick random 1 to 10 degrees
    if    touching Shark ?
        broadcast got_me
        play sound Gong
        change Score by -10
        hide
        wait 1 secs
        go to x: pick random -240 to 240 y: pick random -180 to 180
        show
```

```
when I receive end_game
hide
```

Script for scene

```
when 🏳 clicked
switch to background underwater
set Time to 30
set Score to 0
set Player to 0
ask What's your name? and wait
set Player to answer
broadcast start_game
forever
    wait 0.5 secs
    next background
```

```
when 🏳 clicked
forever
    play sound Bubbles until done
```

```
when I receive start_game
repeat until Time = 0
    wait 1 secs
    change Time by -1
broadcast end_game
```

Script for crab

```
when I receive start_game
go to x: -240 y: -180
forever
    move 10 steps
    if on edge, bounce
    wait 0.1 secs
```

Script for Game Over

```
when 🏳 clicked
hide
```

```
when I receive end_game
show
stop all ⬤
```

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right so far `0`

`193`

What's your answer?

`60`

name:

date :

sensai:

Here's a project we've borrowed for a game to test multiplication skills ... but we think it could be a lot better! So use this as a starter but create your own (better!) version ....

Script for monster

```
when [green flag] clicked
show
say Press space bar to start but remember if you get less than 500 points I get your soul! for 5 secs
set first to 0
set second to 0
set right so far to 0
set score to 0

when space key pressed
say If you're sure!!! ..... Start the clock time keeper! for 2 secs
broadcast he's ready!

when I receive he's ready!
repeat 5
    set first to pick random 1 to 10
    set second to pick random 1 to 10
    say join first join x second for 1 secs
    set number to first * second
    ask What's your answer? and wait
    if answer = number
        say Good! for 2 secs
        change right so far by 1
    else
        say Too bad! for 2 secs

broadcast done
set score to right so far * time left
if score > 500
    broadcast you won
    say join Well done! You got score for 2 secs
    hide
else
    broadcast you lost
    say join You lose! I got you! You got score for 2 secs
    hide
```

Script for scene

```
when [green flag] clicked
switch to background stars
set time left to 200

when I receive he's ready!
forever if time left > 0
    wait 1 secs
    change time left by -1

when I receive you lost
switch to background woods
stop all

when I receive you won
switch to background school1
stop all
```

Variables used

- [ ] **first**
- [ ] **number**
- [✓] **right so far**
- [ ] **score**
- [ ] **second**
- [✓] **time left**

Backgrounds used

| Scripts | **Backgrounds** | Sounds |

New background: Paint | Import | Camera

1. **school1** 480x360 84 KB Edit | Copy | ⊗

2. **woods** 480x360 191 KB Edit | Copy | ⊗

3. **stars** 480x360 18 KB Edit | Copy | ⊗

INTERMEDIATE SCRATCH – THE 20-LINE CHALLENGE!

We came across a cool "line drawing" project tweeted by a ninja from another dojo which we've added some variables to and which then gave us a idea! It's a great bit of Scratch coding and uses less than 20 blocks of code for some awesome results!!!! We tried to see what we could do with 20 blocks or less and came up with the "microbe battle". Your challenge? Simple … what can you do with 20 blocks or less?????

name:

date :

sensai:

Line Drawing

```
when [flag] clicked
hide
set x to 0
set y to 0
set increase to 0
ask Type in an angle and wait
set degrees to answer
ask How many steps (1-10)? and wait
set steps to answer
clear
pen down
set pen color to [ ]
repeat until < touching edge ? >
    change pen color by pick random 1 to 100
    move increase steps
    turn ↻ degrees degrees
    change increase by steps
pen up
```

Variables used

- [✓] degrees
- [ ] increase
- [ ] step
- [✓] steps

degrees 293
steps 2

degrees 102
steps 3

degrees 37
steps 1
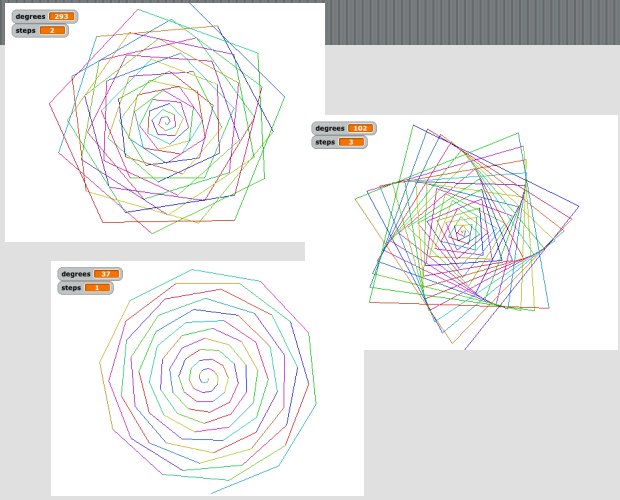
Microbe Battle

```
when [flag] clicked
go to x: pick random -100 to 100 y: pick random -100 to 100
set red_steps to 25
clear
set pen size to 1
set pen color to 0
pen down
forever
    move pick random 1 to red_steps steps
    if on edge, bounce
    if < distance to Sprite2 < 50 >
        turn ↺ 180 degrees
    else
        if < touching color [ ] ? >
            change red_steps by 5
            change blue_steps by -5
            change pen size by 1
        else
            turn ↻ pick random 1 to 360 degrees
    wait 0 secs
```
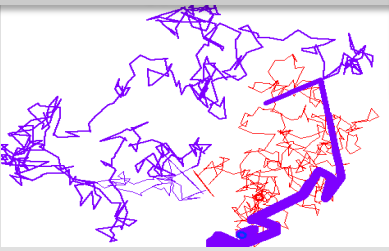
Variables used

- [ ] blue_steps
- [ ] red_steps

Sprites used

Sprite1   Sprite2

Sensai Rob says: "These microbe sprites move around randomly and "feed" off each others trails until they get to max size. If they eat the other they speed up, if they get eaten they slow down, if they "see" each other they run away! You can leave this running for hours!!!"

Hmmm … I think Sensai Rob has cheated a bit! There might only be 20 blocks of code here but he's used them for both the Red and the Blue Sprite. Isn't that 40 blocks of code or is it ok to use the same 20 on more than 1 sprite???? What do you think? Shall we let him off?

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