# Objective

I understand the structure of a “for “loop and I know how to use it to make my program more efficient.

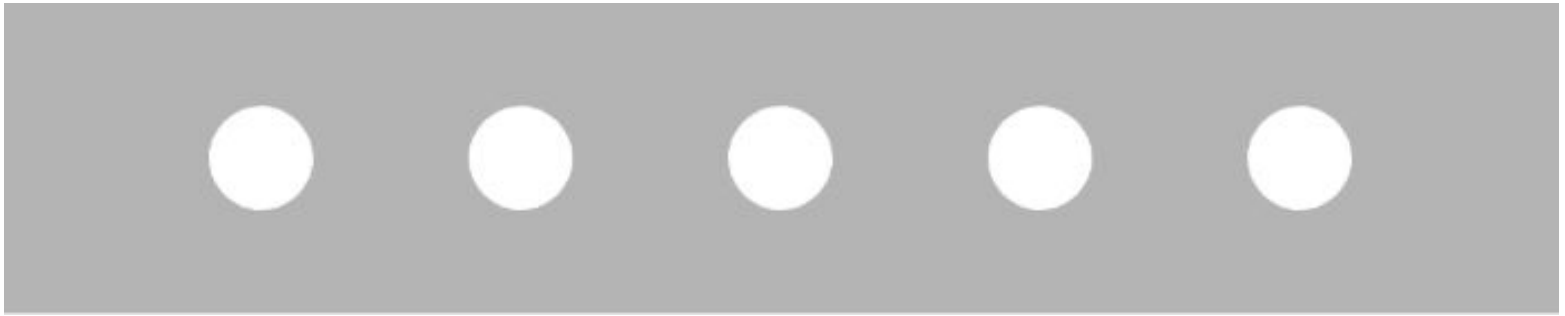
## Scratch


## JAVASCRIPT

“ for”


move 50 steps
next costume
move 50 steps
move 50 steps
next costume
move 50 steps
next costume


repeat 3
move 50 steps
next costume



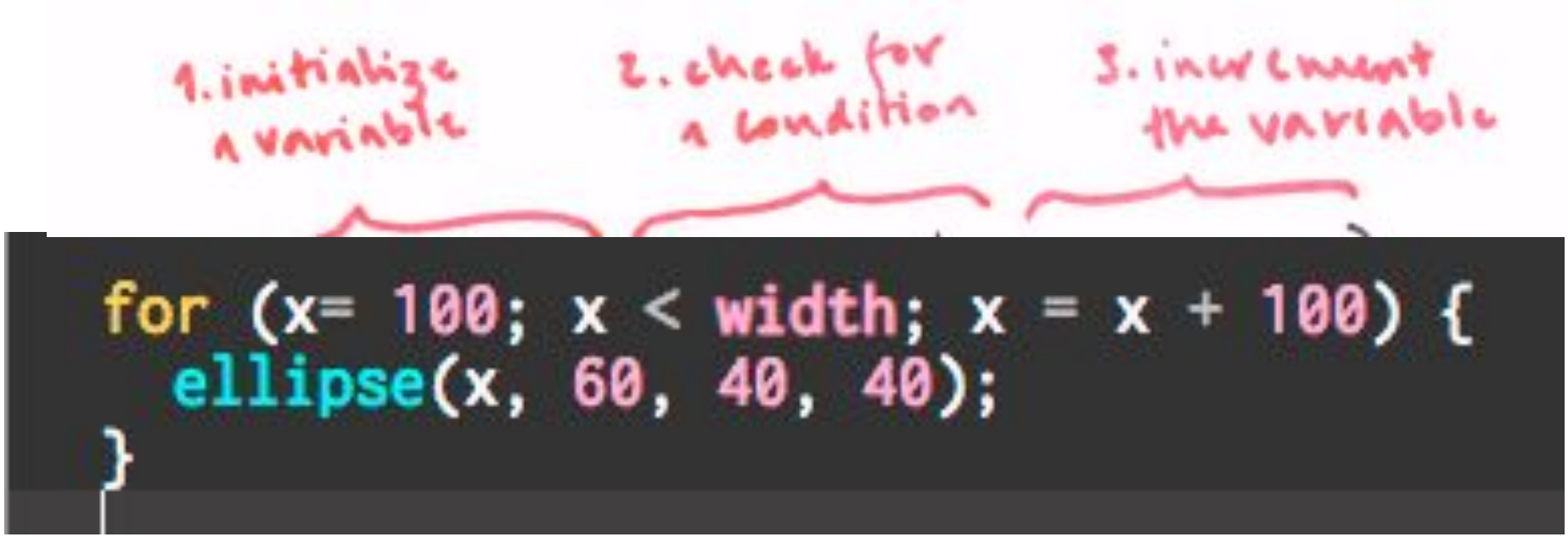
1) Ellipse- no loop ( name of project)
2) Canvas is 600 x 120
3) All ellipses has a size of 40
4) The first ellipse starts at x = 100 and y = 60
5) The ellipses are 100px apart

```
function setup( ){
createCanvas(600,120);
}
function draw( ){
background(180);
ellipse(100,60,40,40);
ellipse(200,60,40,40);
ellipse(300,60,40,40);
ellipse(400,60,40,40);
ellipse(500,60,40,40);
}
```

```
var x = 100;
function setup() {
  createCanvas(600, 120);
}

function draw() {
  background(180);
  for (x= 100; x < width; x = x + 100) {
    ellipse(x, 60, 40, 40);
  }
}
```

```
for (x= 100; x < width; x = x + 100) {
  ellipse(x, 60, 40, 40);
}
```




Structure of “ for” loop

```
var x = 100;
function setup() {
  createCanvas(600, 120);
}

function draw() {
  background(180);
  for (x= 100; x < width; x = x + 100) {
    ellipse(x, 60, 40, 40);
  }
}
```

If I run the program, how many ellipses do you expect to see?

PS. The center of the first ellipse starts at 100

```
var x = 100;
function setup() {
  createCanvas(600, 120);
}

function draw() {
  background(180);

  for (x= 100; x <= width; x = x + 100) {
    ellipse(x, 60, 40, 40);
  }

}
```

If I run the program, how many ellipses do you expect to see?

PS. The center of the first ellipse starts at 100

# x< width **vs** x<= width (canvas is (600, 120)

```
for (x= 100; x < width; x = x + 100) {
  ellipse(x, 60, 40, 40);
}
```

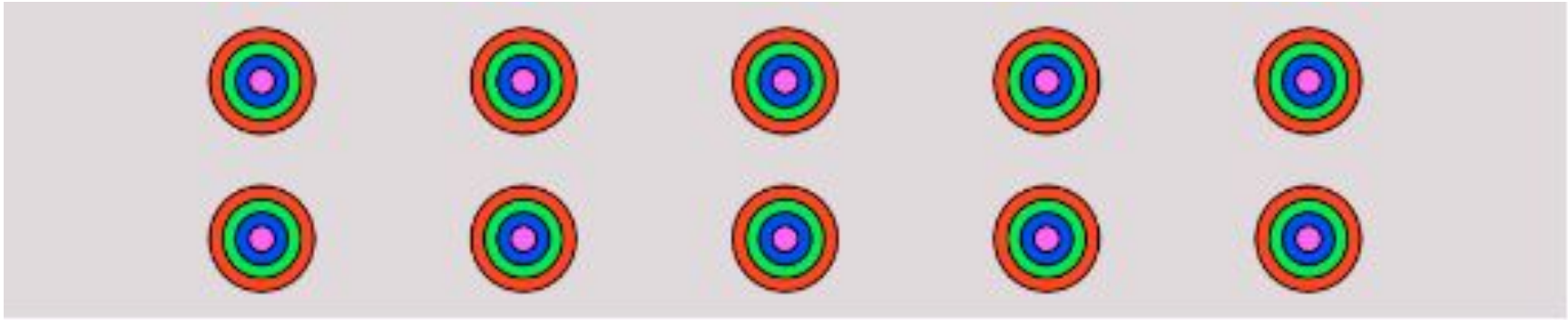
```
for (x= 100; x <= width; x = x + 100) {
  ellipse(x, 60, 40, 40);
}
```

Your task is to duplicate your code and name it **“ vertical design with loop “** write a program for this design

1. Canvas is ( 120, 600 )
2. Ellipse size is 50

Figure out the three parameters of the for loop

1) Initial value of the variable
2) Check for condition
3) Increment the value



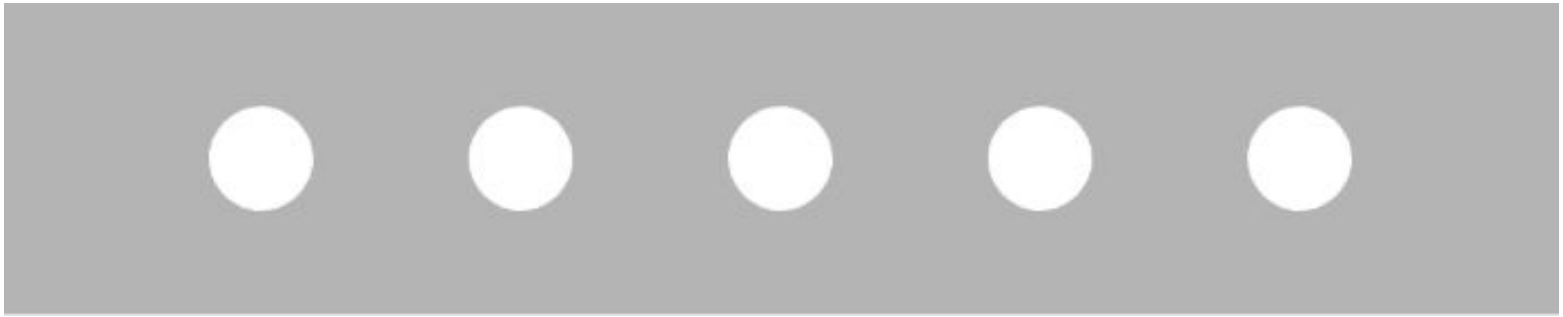
Try to code this design

- Canvas is ( 600, 120)
- The size of the biggest ellipse is 40
- You can duplicate the first project and build on the code

After you read the lesson
Try to create this design using Nested Loop.
Share the link to your project on google classroom

# What is Pseudocode?

A  simplified programming language, used in program design



Canvas is 500 x 200
Ellipse is size 50 and starts at ( 100, 75)
They are 100 px apart

Write an algorithm or pseudocode to design your program

Algorithm

a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.