





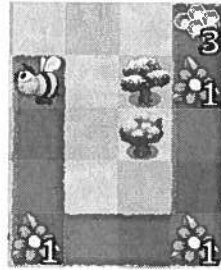
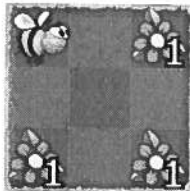
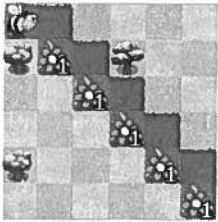
Unit 4 – ICS200 – Loops and Game Lab
 Sample Test, Tuesday December 10, 2024

Name: Gorski

Total	Knowledge 	Communication 	Thinking 	Application 
(100)	(29)	(23)	(23)	(25)

Knowledge 

1. Consider these repeat loops from code.org. Fill in the boxes to match the picture. /5



```
when run
repeat 5 times
do
  move forward
  turn right 90
  move forward
  get nectar
  turn left 90
```

```
when run
repeat 3 times
do
  repeat 2 times
  do
    move forward
  get nectar
  turn right 90
```

```
when run
repeat 3 times
do
  turn left 90
  repeat 3 times
  do
    move forward
  get nectar
move forward
repeat 3 times
do
  make honey
```

2. (a) What are the parts of a loop? /6

A	Initialize	Loop	stopping	variables
B	Test	Loop	stopping	condition
C	Step	To	Repeat	
D	Progress	To	The Loop	stopping condition

(b) On the following loop, use the letters from part a to label each circled part.

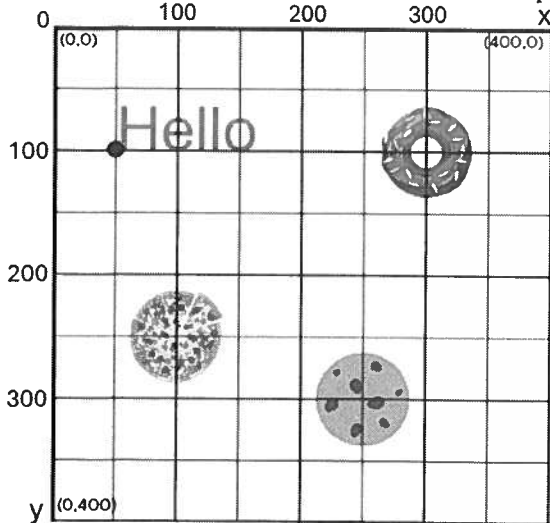
```
for (var i = 5; i < 60; i += 10) {
  setText("output", (getText("output") + " " + i));
}
```

(c) Answer true or false about the for loop above (in part b). /4

- F a. The loop stopping variable is initialized to 5.
- T b. The first number the loop prints is 10.
- F c. The Boolean expression is $i < 60$.
- T d. The loop stopping condition is $i < 60$.

3. Fill in the starting co-ordinates for the following sprites and text.
(Remember to look to the middle of the sprite to find its starting location).

/4



```

var a = createSprite(250, 300);
a.setAnimation("cookie");

var b = createSprite(300, 100);
b.setAnimation("donut");

var c = createSprite(100, 250);
c.setAnimation("pizza");

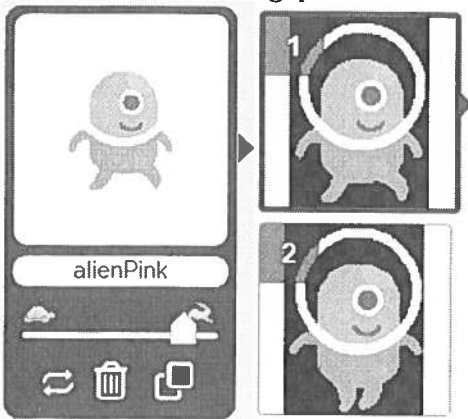
textSize(50);

function draw() {
  clear();
  text("Hello", 50, 100);
  drawSprites();
}

```

4. Answer the following questions about the animation shown.

/4



- What is the name of the animation?
- How many frames are in the animation?
- Does the sprite walk slowly or quickly?
- Which tab do you use to set these up: code or animation?

alienPink
2
quickly
animation

5. Circle all code constructs that apply to the description.

/6

- Repeats code over and over.
- Must progress to the stopping condition to finish.
- Chooses between blocks of code.
- Is used for decision making.
- Requires brackets if it is more than one line.
- Controlled by a Boolean expression.

<u>Loop</u>	If	
<u>Loop</u>	If	
Loop	<u>If</u>	
Loop	<u>If</u>	
<u>Loop</u>	<u>If</u>	Both
<u>Loop</u>	<u>If</u>	Both

Communication

6. Identify 3 different kinds of malware.

/3

Virus	Worm	Trojan
-------	------	--------

7. Name three things that could make a password more secure.

/3

1	Make longer (over 8 characters)
2	Use upper & lowercase characters
3	Use special characters

8. Describe the movement of this sprite by answering the questions.

/5

```

var star = createSprite(40, 10);
star.setAnimation("coin_gold_1");
star.velocityX = 6;

function draw() {
  background("white");
  drawSprites();
  if (star.y > 380) {
    star.y = 0;
    star.x = randomNumber(40, 350);
  }
}
    
```

- What are the co-ordinates of the sprite's starting position?
- What is the name of the animation?
- What is the name of the sprite?
- What is the y co-ordinate of the sprite's death?
- What is the y co-ordinate of the sprite's respawn?

40, 10
coin_gold_1
star
380
0

9. Fill in the words that match the descriptions given.

/10

Blaster	a) The malware that caused the Northeast Blackout of 2003.
Zero-Day	b) A type of hacking that has never been used before.
EQAO (OSSLT)	c) An Ontario organization that was D-Dosed in 2016.
Herder	d) A hacker who controls a botnet.
Offence	e) Who has the advantage in computer security: the offence or the defence?
Stuxnet or Ghostnet	f) A specific example of malware used for cyber-war.
Fire wall	g) Software that monitors connections between networks.
Virus Scanner	h) Software that looks for malware and removes it.
Network Use Policy	i) Rules that all network users must follow.
Air Gap	j) Computers not connected to a network for security reasons.

10. Many stores now offer on-line e-coupons:



E-coupons represent a data-mining tool. Embedded in the barcode is the device id. This can link to information about when the customer downloaded the coupon, other sites they visited, their email, their social media accounts, their credit card data and other things they purchase.

(a) What is one positive feature of E-coupons for customers?

/2

..Coupons..allow..customers..to..conveniently..save..money..on..products..

(b) What is one negative feature of E-coupons for customers?

..A..customers'..privacy..is..invaded!..by..Data miners..

Thinking

15. Look at the following and answer the data miner's questions.

/5

PlayerGame

PlayID	GameID
12	1
14	1
15	1
12	2
15	2

Game

GID	Name	Rating
1	Minecraft	78
2	Pokémon	95

Player

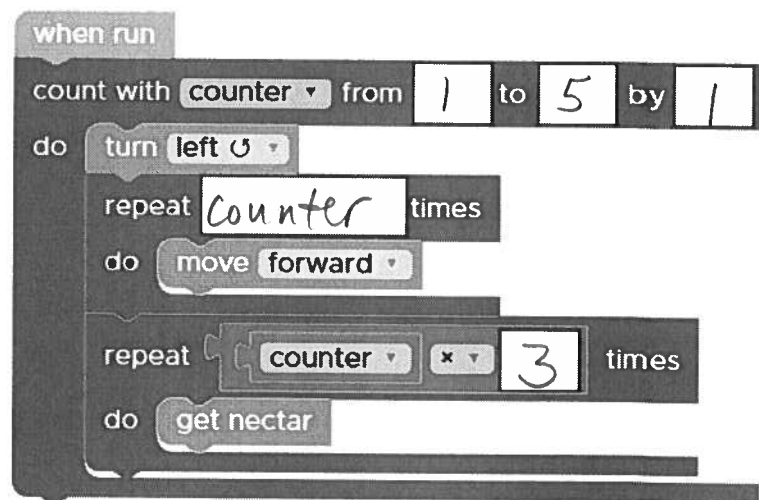
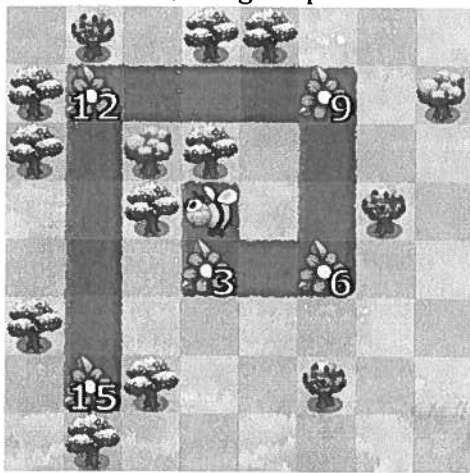
PID	First	Last
12	Jean	Poole
14	Ella	Vader
15	Jo	King

- Which game has the highest rating?
- What is player #15's last name?
- Which game has the most players?
- What are the names of the two people playing Pokémon?
- Does Ella Vader play Minecraft?

Pokémon
King
Minecraft
Jean Poole
Jo King
Yes

16. Fill in the code, using the picture.

/5



17. Circle and correct 5 errors in the following code. (there are actually 7 in total)

/5

```

var a = createSprite(200, 200) 1
a.setAnimation("asterisk");

a.velocityX = 4;
a.velocity 2Y = 4;

createEdgeSprites();

function draw 3loop() {
  clear(); 4
  drawSprites();
  a.bounceOff(edges); 5

  else if (keyWentDown("b")) { 6
    a.x = randomNumber(20, 380);
    7q.y = randomNumber(20, 380);
  }
}
    
```

18. What direction is each sprite travelling? (up, down, right, left)

/4

s.velocityX = 5; s.velocityX = 0; s.velocityX = - 3; s.velocityX = 0;
 s.velocityY = 0; s.velocityY = 5; s.velocityY = 0; s.velocityY = - 3;

Right	Down	Left	Up
-------	------	------	----

19. What is the output of each loop?

/4

<pre>onEvent("button1", "click", function(event) { setText("out", ""); for (var i = 100; i <= 500; i+=100) { setText("out", (getText("out")+" ") + i); } });</pre> <p style="text-align: center;">100 200 300 400 500</p>	<pre>onEvent("button2", "click", function(event) { setText("out", ""); for (var i = 1; i < 4; i++) { setText("out", (getText("out")+"**")); } });</pre> <p style="text-align: center;">* * *</p>
<pre>onEvent("button3", "click", function(event) { setText("out", ""); for (var i = 2; i <= 10; i+=2) { setText("out", (getText("out")+" ") + i); } });</pre> <p style="text-align: center;">2 4 6 8 10</p>	<pre>onEvent("button4", "click", function(event) { setText("out", ""); for (var i = 550; i < 0; i-=3) { setText("out", (getText("out")+ " ") + i*i*i); } });</pre> <p style="text-align: center;">does not run 550 < 0 is false</p>

Application

20. Fill in the loops to print these 2 patterns.

/4

<p style="text-align: center;">3 6 9 12 15 18 21 24 27 30</p> <pre>onEvent("button1", "click", function(event) { setText("output", ""); for (var i = <u>3</u>; i <= <u>30</u>; i += <u>3</u>) { setText("output", (getText("output")+" ") + i); } });</pre>	<p style="text-align: center;">50 49 48 47 46 45 44 43 42 41</p> <pre>onEvent("button2", "click", function(event) { setText("output", ""); for (var i = <u>50</u>; i >= <u>41</u>; i --) { setText("output", (getText("output")+" ") + i); } });</pre>
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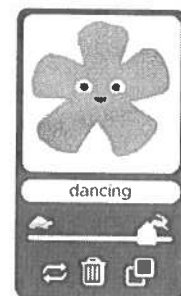
21. Fill in the following code using the description given.

/6

- The name of the sprite is bob.
- The animation name is dancing.
- The sprite starts in 100, 150.
- The sprite is 0.3 scale.
- The sprite is moving down the screen at a speed of 5;
- When the sprite reaches (100, 420), it is respawned in coordinate (100, -20).

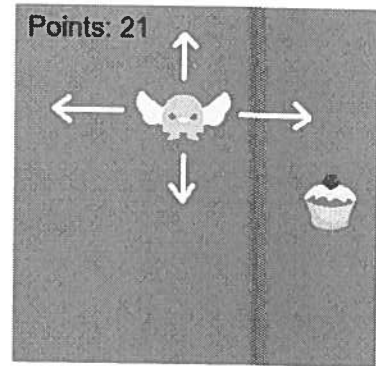
```
var bob = createSprite(100, 150);
bob.setAnimation("dancing");
bob.velocityY = 5;
bob.scale = 0.3;

function draw() {
  clear ();
  drawSprites ();
  if (bob.y > 420) {
    bob.y = -20;
  }
}
```



22. In the game "Cupcake Munch" the goal is to eat 25 cupcakes.

- The character is always moving.
- If the character hits the wall, they bounce in the opposite direction.
- If the player presses a, the character's direction changes to left, d to right, w to up and s to down. Then it keeps moving in that direction.
- If the cupcake is touched, it moves to a random location on the screen and the user gets a point.
- If you reach 25 points, "You Win!" appears in position 200, 200 and all sprite movement stops.



/15

Use the above information to fill in the blanks.

```
//Make the points variable set to 0
```

```
var points = 0;
```

```
var sprite = createSprite(100, 300);
sprite.setAnimation("wing_bot");
sprite.velocityX = 0;
sprite.velocityY = -5;
var target = createSprite(randomNumber(50,
    350),randomNumber(50,350));
target.setAnimation("cupcake");
```

```
function draw() {
    background("grey");
```

```
    drawSprites();
```

```
    if (keyDown("a") || sprite.x>380) {
        sprite.x -= 5;
        sprite.velocityX=-5;
        sprite.velocityY=0;
    }
```

```
    else if (keyDown("d") || sprite.x<20) {
```

```
        sprite.x += 5;
        sprite.velocityX= 5;
        sprite.velocityY= 0;
```

```
    }
    else if (keyDown("w") || sprite.y>380) {
```

```
        sprite.y -= 5;
        sprite.velocityX= 0;
        sprite.velocityY= -5;
```

```
    }
```

```
//draw loop continued
```

```
    else if (keyDown("s") || sprite.y<20) {
```

```
        sprite.y += 5;
        sprite.velocityX= 0;
        sprite.velocityY= 5;
```

```
    }
    if(sprite.isTouching(target)){
        //move the target to a random location,
        // and increase the score
```

```
        target.x = randomNumber(50,350);
        target.y = randomNumber(50,350);
        points ++;
```

```
    }
    text("Points: "+points, 20,40);
```

```
//if they have enough points, stop the sprite
// and print "You Win!"
```

```
    if( points >= 25 ) {
        sprite.velocityX= 0;
        sprite.velocityY= 0;
        text("You Win!", 200, 200);
    }
```

```
    }
```