

6. Using the Keyboard and Mouse

ACTIVITY 1



Balloon Typing game:

Let's play a game, to burst the balloons by clicking on the alphabet keys.

Link:

<https://www.turtlediary.com/game/balloon-typing.html>

ACTIVITY 2



Arrange the blocks to form the image by using drag and drop with the help of a mouse.



Link:

<https://studio.code.org/s/pre-express-2022/lessons/1/levels/9>

ACTIVITY 3



Hey! I am Aron, I am in trouble again. I needed to chase the squirrel but I couldn't. Will you help me?

Yay! Let's get ready with your mouse. Here we need to move the cursor with the mouse to chase the squirrel.

MouseProgram.Com
www.mouseprogram.com



Move the mouse pointer to touch the squirrel!

[Return](#)

Link: <http://www.mouseprogram.com/move-game.html>

7. Coding Puzzles on Code.org

ACTIVITY 1



Draw the line. It is 200 pixels long.



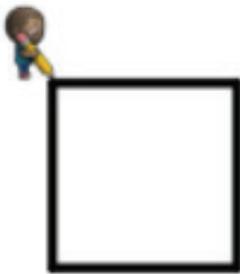
```
when run
move [forward ▾ by 200 ▾ pixels]
```

Link: <https://studio.code.org/s/CodeStudioPuzzleChallenge/lessons/1/levels/8>

ACTIVITY 2



Draw the square. Each side is 100 pixels long.



```
when run
repeat [4] times
do
  move [forward ▾ by 100 ▾ pixels]
  turn [right ▾ by 90 ▾ degrees]
```

Link: <https://studio.code.org/s/CodeStudioPuzzleChallenge/lessons/1/levels/10>

Continue...



Step 1:

Drag the “Move forward” block and set the steps by 100 pixels and drop it below the “When run” block.

move forward ▾ by 100 ▾ pixels

Step 2:

Drag the “Turn right” block and set the angle by 90 degrees and drop it below the “move” block.

turn right ▾ by 90 ▾ degrees

Step 3:

Drag the “Repeat” block and set repeat to 4 times and put the “Move” and “Turn” block into it.

```
when run
repeat (4) times
  do
    move forward by 100 pixels
    turn right by 90 degrees
```

Link: <https://studio.code.org/s/CodeStudioPuzzleChallenge/lessons/1/levels/10>

ACTIVITY 3



Draw this line by using the variable “length”.
Each line segment is 75 pixels long.



Step 1:

Drag and drop the “set length” block and set pixels to 75.

```
when run
set [length v] to [75]
```

Step 2:

Drag and drop the “Move forward” block.

```
when run
set [length v] to [75]
move [forward v] by [length v] pixels
```

Step 3:

Drag and drop the “Turn left” block and set degrees by 90.

```
when run
set [length v] to [75]
move [forward v] by [length v] pixels
turn [left v] by [90 v] degrees
```

Step 4:

Drag and drop the “Move forward” block.

```
when run
set [length v] to [75]
move [forward v] by [length v] pixels
turn [left v] by [90 v] degrees
move [forward v] by [length v] pixels
```

Continue...



Step 5:

Drag and drop the “Turn right” block and set degrees by 90.

```
when run
set length to 75
move forward by length pixels
turn left by 90 degrees
move forward by length pixels
turn right by 90 degrees
```

Step 6:

Drag and drop the “Move forward” block.

```
when run
set length to 75
move forward by length pixels
turn left by 90 degrees
move forward by length pixels
turn right by 90 degrees
move forward by length pixels
```

Link: <https://studio.code.org/s/CodeStudioPuzzleChallenge/lessons/1/levels/13>

ACTIVITY 4



Move the Bee to the flower and get the nectar.

Step 1:

Drag the “Move forward” block and drop it below the “When run” block to move the Bee in forward direction.

```
when run
move forward
```

Continue...

Step 2:

Drag the “Repeat” block and set the repetition to 5 times.

Put the “Move” block into the “Repeat” block.

```
when run
repeat (5) times
do [move forward]
```

Step 3:

Drag the “Get nectar” block and drop it below the Repeat block.

```
when run
repeat (5) times
do [move forward]
[get nectar]
```

Link: <https://studio.code.org/s/CodeStudioPuzzleChallenge/lessons/1/levels/3>

8. Coding Puzzles using Blockly

ACTIVITY 1



Solve the following coding puzzles with given links and instructions.



Step 1:

Drag and drop the “Move forward” block.

Step 2:

Drag and drop the “repeat until” block.

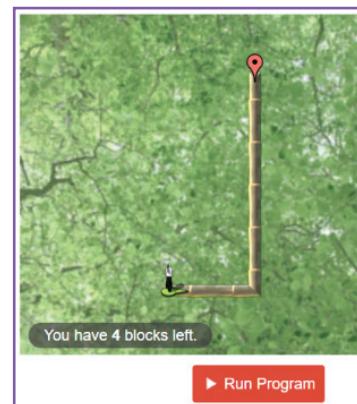


Link: <https://blockly.games/maze?lang=en&level=--3&&skin=0>

ACTIVITY 2



Solve the following coding puzzles with given links and instructions.



Continue...

Step 1:

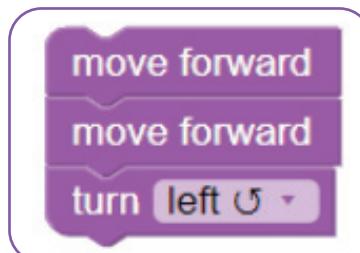
Drag and drop the “Move forward” block 2 times.



```
move forward [2]
```

Step 2:

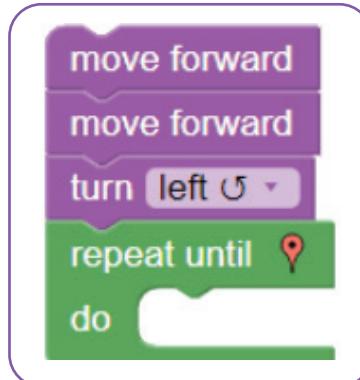
Drag and drop the “Turn left” block.



```
move forward [2]
turn left [5 °]
```

Step 3:

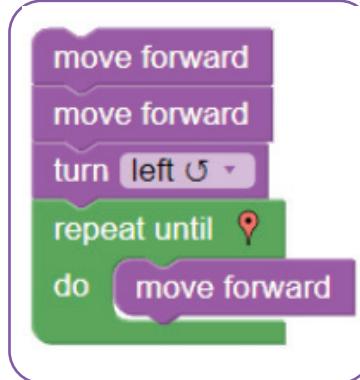
Drag and drop the “repeat until” block.



```
move forward [2]
turn left [5 °]
repeat (1) [
    do
]
```

Step 4:

Drag and drop the “move forward” block.



```
move forward [2]
turn left [5 °]
repeat (1) [
    do
        move forward [1]
]
```

Link: <https://blockly.games/maze?lang=en&level=5&skin=2>

9. Introduction to Play Lab

ACTIVITY 1

Running game

In the Running game, the Cat sprite chases the Ghost sprite and when the Cat sprite touches the Ghost sprite game over. Let's see with the help of below steps:



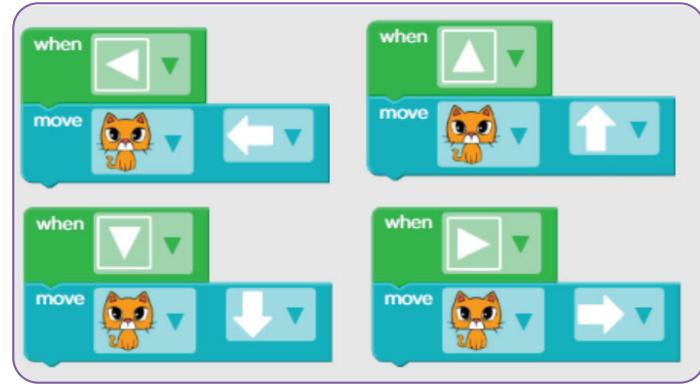
Step 1: Display the sprites

To display sprites, we need to drag the “Show sprite” blocks of ‘Cat’ and ‘Ghost’ and drop them on the workspace.



Step 2: Move the sprite

To move the Cat sprite in all four directions, we need to drag the “When UP, DOWN, RIGHT, LEFT arrows clicked” blocks with “Move” blocks respectively drop on the workspace.

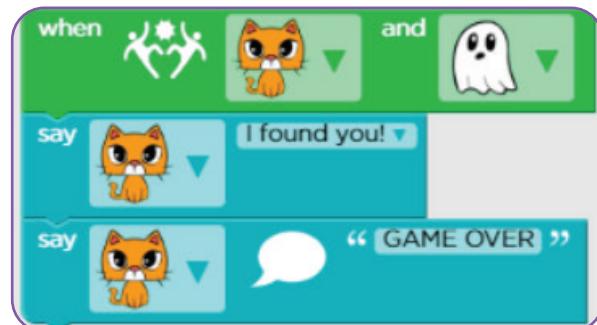


Continue...



Step 3: Both sprites touched

To trigger sprites when they touch each other, we need to drag the “When sprite bumped” block and drop it on the workspace.



Drag and drop the “Say” block of Cat sprite and adjust just below the bumped block.

ACTIVITY 2

Character Story using Play Lab

In the Character game, the Cat sprite and the Rabbit sprite will interact with each other.

Let's see with the help of below steps:



Step 1: Display the sprites and Background

First step is to display both sprites and background on screen. To display the sprites, drag the “Show sprite” blocks of ‘Cat’ and ‘Rabbit’ and for background drag the “Set background” block and drop on the workspace as shown in the image.

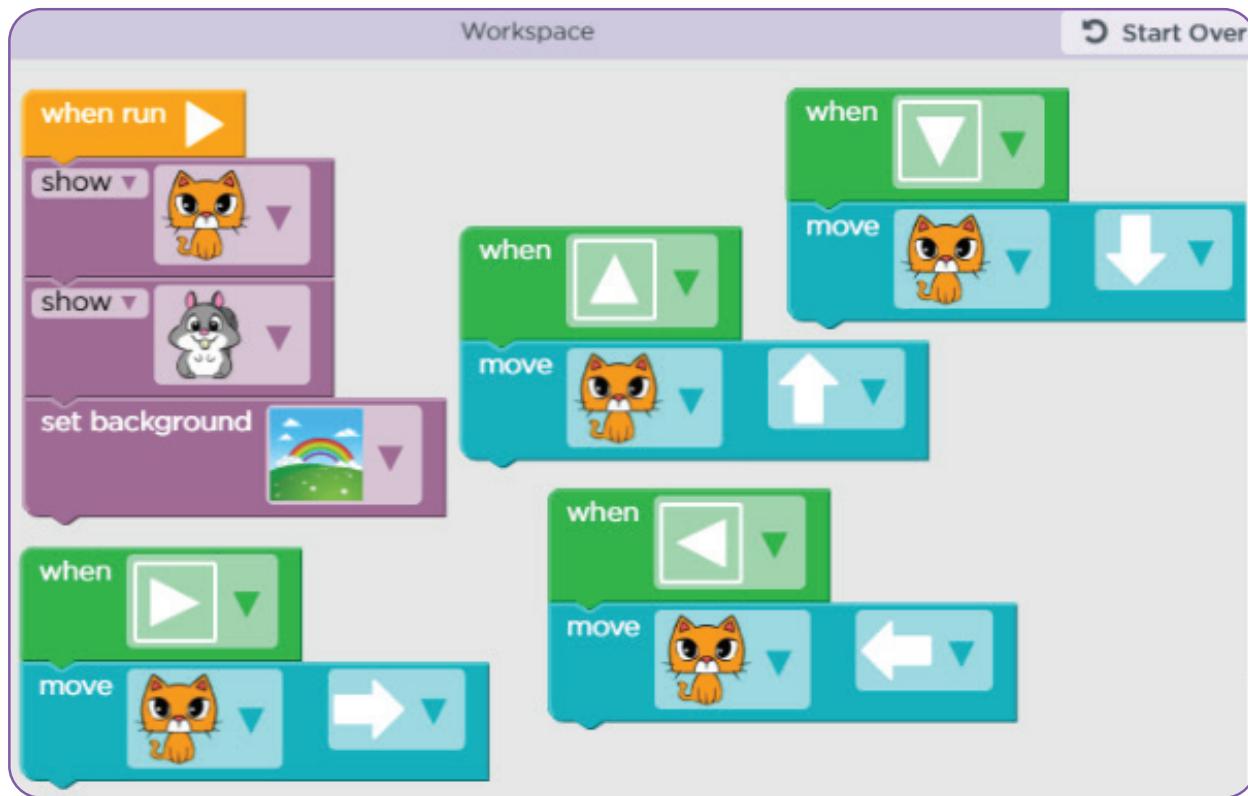


Continue...



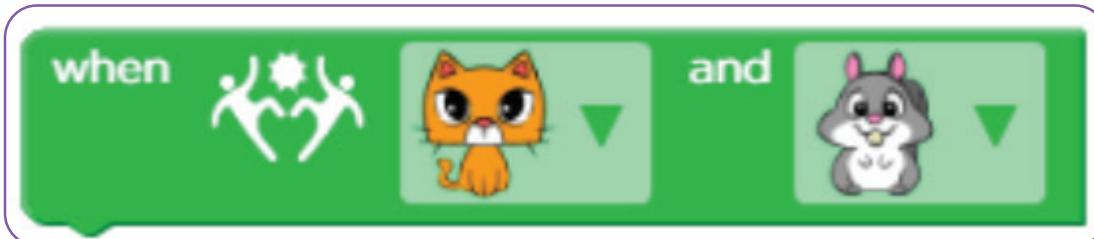
Step 2: Move the Sprite

To move the Cat sprite, drag the “When arrow clicked” and “Move sprite” blocks and drop on the workspace as shown below.



Step 3: Start on Bump

To start the conversation between the sprites, drag the “When sprites bumped” block and drop on the workspace.



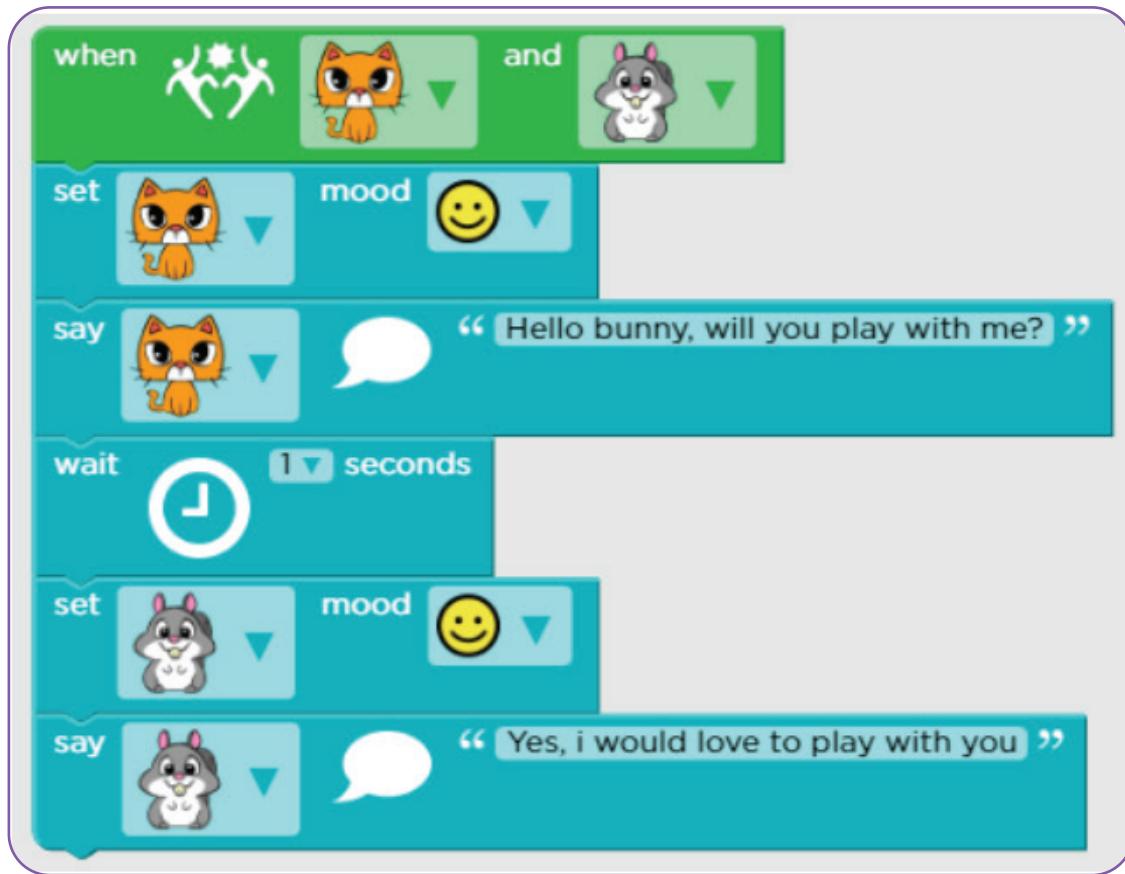
Continue...

Step 4: Set the mood and make the conversation

To set the mood of a Cat sprite, drag the “Set mood” block and drop it on the workspace.

To make the conversation between the sprites, drag the “Say” blocks for both the sprites and drop them on the workspace.

To pause the conversation of both sprites, drag and drop the “wait” block onto the workspace as shown below.



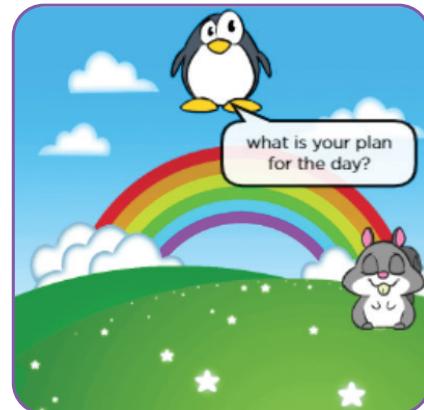
ACTIVITY 3



Character Story using Play Lab

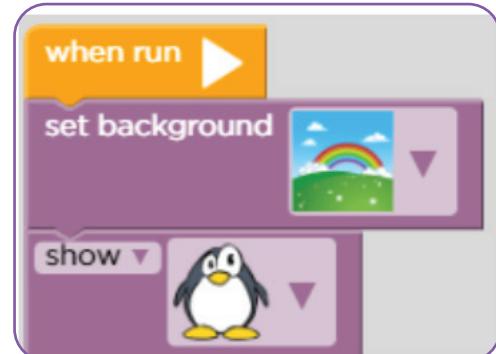
In this story two characters (sprites) are talking to each other about their.

To develop this story we need one backdrop and two characters (sprites). Below are the steps to create the story.



Step 1: Display the Sprite and background

To set the background, drag and drop the “Set background” block to the screen and “Show sprite” block as Penguin to display the first sprite.



Step 2: Conversation of sprite

To make conversation with penguin, we need to drag the “Say” block and to pause the code, drag the “Wait” block and drop on the workspace.

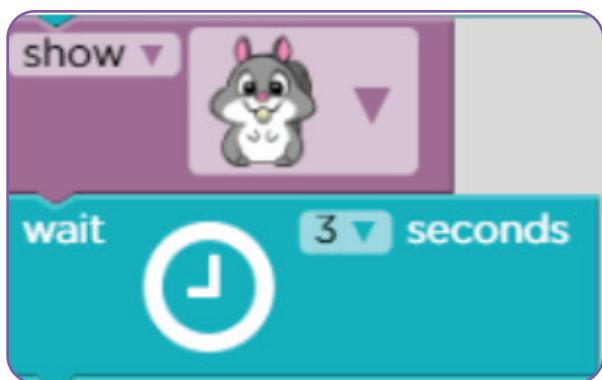


Continue...



Step 3: Display the Rabbit sprite

Drag and drop the “Show sprite” block as Rabbit and “Wait” block.



Step 4: Making conversation

To make the conversation between the Penguin and Rabbit, drag the “Say” blocks of both the sprites(Penguin and Rabbit) and drop on the workspace as shown below.

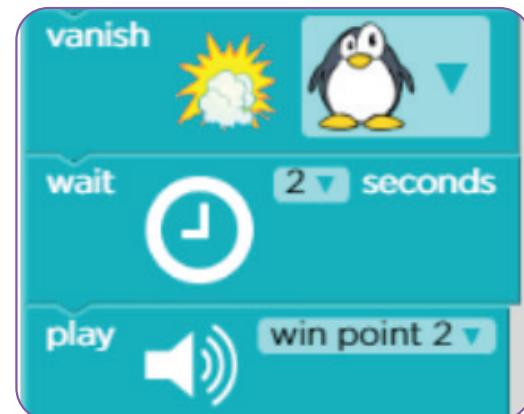


Continue...



Step 5: Make the penguin sound and vanish

To make the penguin sprite vanish and make sound, drag the “Vanish” block, “Wait” block and “Play sound” block and drop on the workspace.



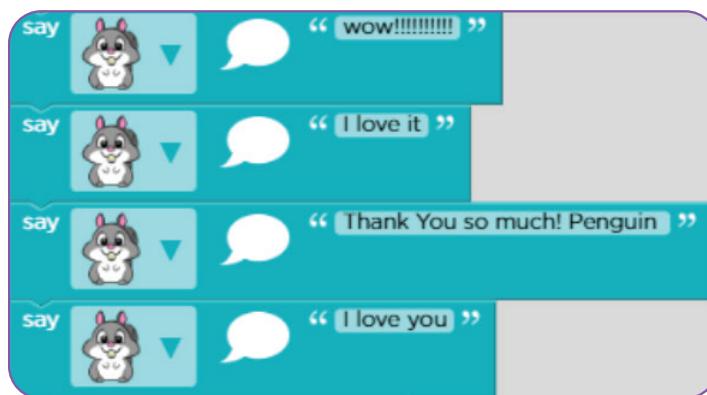
Step 6: Display background and sprite

To display background and sprite, we need to drag the “Set background” block, “Set mood” and “Show sprite” blocks and drop them on the workspace.



Step 7: Making conversation

To make the conversation between the Penguin and Rabbit, drag the “Say” blocks of both the sprites(Penguin and Rabbit) and drop on the workspace as shown below.



10. Game Development with Play Lab

ACTIVITY 1

Fireball Game

In the Fireball Game, one character sprites through the fire ball to hit the dinosaur. Whenever the ball hits the dinosaur, the dinosaur will disappear. To create this game, follow below steps:



Step 1: Displaying the Sprites

First step is to display both sprites on screen. To display the sprites, drag the “Show sprite” blocks of ‘Cat’ and ‘Dinosaur’ and drop on the workspace.

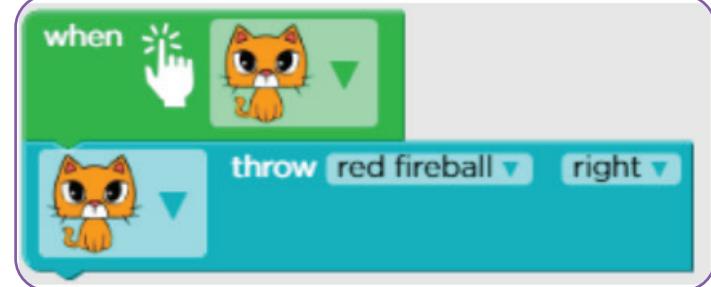


Step 2: Throw the fireball

Next, to throw the fireball sprite, we need to drag the “When sprite clicked” block for cat sprite, this will trigger an event.

Continue...

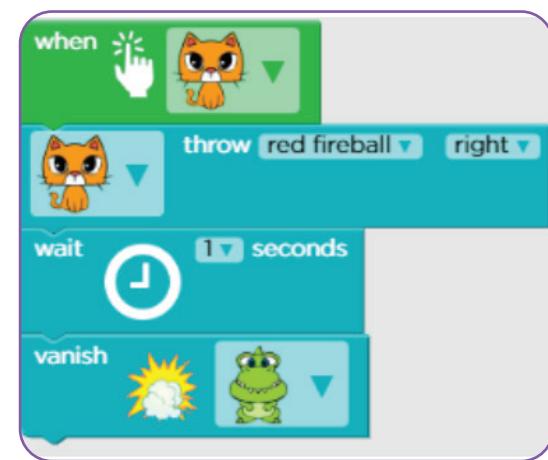
To throw the fireball, drag the throw block and select the red fireball option, also set the direction to the right to throw the fire in the right direction, as shown in the figure



Step 3:

After throwing the fire ball, drag and drop the wait block and adjust just below the throw block.

To make the dinosaur sprite vanish, drag the vanish block, select dinosaur sprite and drop below the wait 1 second block.



Full code:



ACTIVITY 2



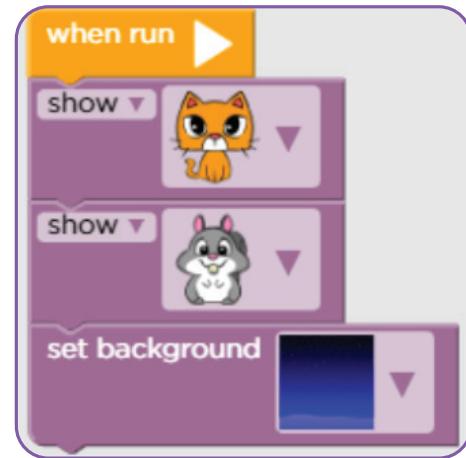
Catching game

In the Catching game, both the sprites (Cat and Rabbit) throw balls to each other. To create this game, follow below steps:



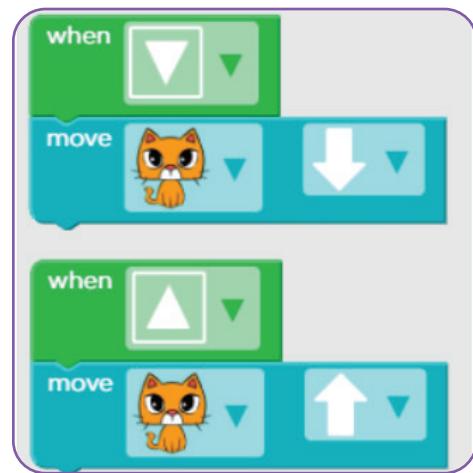
Step 1: Displaying the Sprites and Background

First step is to display both sprites and background on screen. To display the sprites, drag the “Show sprite” blocks of ‘Cat’ and ‘Rabbit’ and for background drag the “Set background” block and drop on the workspace as shown in the image.



Step 2: Move the Sprite

To move the Cat sprite, drag the “When arrow clicked” and “Move sprite” blocks and drop on the workspace as shown in the image.



Continue...

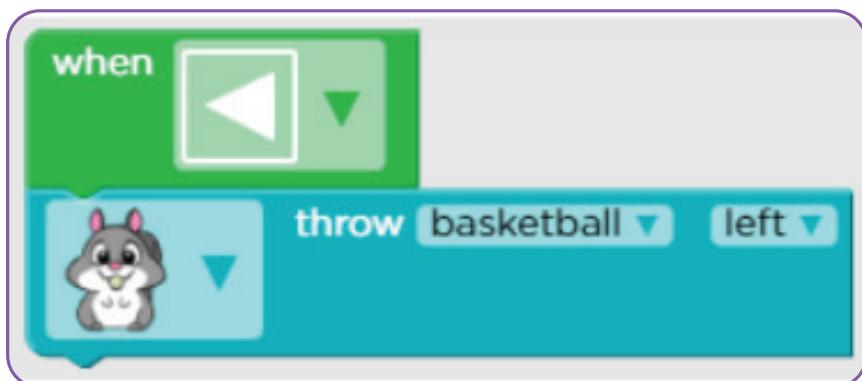


Step 3: Throw the basketball

Next, to throw the basketball sprite, we need to drag the “When right arrow clicked” and “Throw basketball” blocks and drop them on the workspace.



Same for the penguin, drag the “When left arrow clicked” and “Throw basketball” blocks and drop them on the workspace.



ACTIVITY 3



Racing game

In the Racing game, both the sprites (Cat and Penguin) start to run at the same time and Cat sprite will win the race. Let's see with the help of below steps:



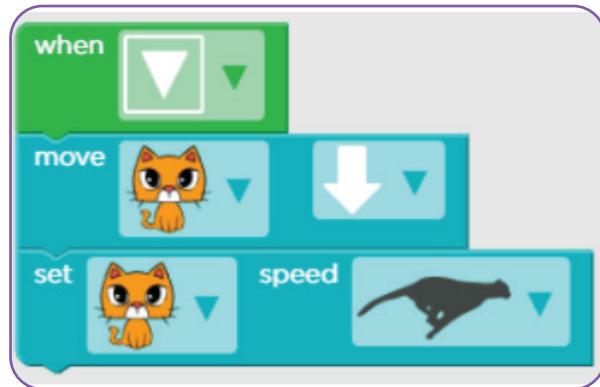
Step 1: Displaying the Sprites

First step is to display both sprites on screen. To display the sprites, drag the “Show sprite” block of ‘Cat’ and ‘Penguin’ and drop on the workspace



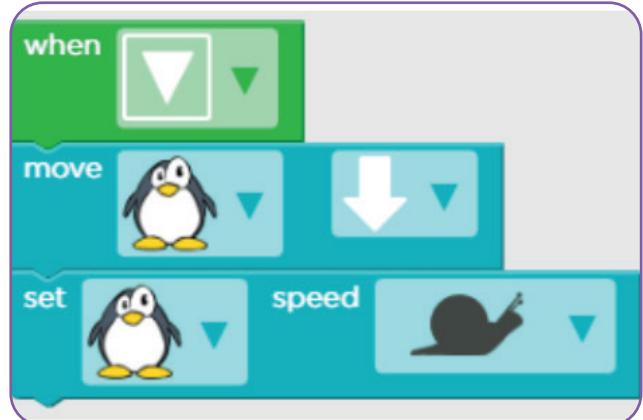
Step 2: Move the Cat sprite

To move the Cat sprite, drag the “When arrow clicked”, “Move sprite” and “Set speed” as Fast blocks and drop on the workspace as shown below.



Continue...

Same with Penguin sprite, drag the “When arrow clicked”, “Move sprite” and “Set speed” as Slow blocks and drop on the workspace as shown below.



Full Code:

