Adding Sound

Add sound by either adding short audio files like a crash sound when two objects collide or longer audio files like background music.

Get Ready

You will need these components in your design screen:

- Button
- Sound
- Player

Try These

What Does it Mean?

When Button1 is clicked the Meow sound will play.

When Screen1 comes up on your phone the BackgroundMusic will start playing.
Shaking Phone

Make something to happen when you shake your phone.

Get Ready

You will need these components in your design screen:

- Image
- Sound
- AccelerometerSensor
- Label

Try These Blocks

What Does it Mean?

The AccelerometerSensor.Shaking event will detect when the phone is shaking and then the Meow Play sound will play and the phone will vibrate for 20 milliseconds.
Movement with Buttons

*Move a sprite by touching a button.*

Get Ready

You will need these components in the design screen:

- **Canvas**
- **Sprite**
- **Button**

Try These Blocks

What Does it Mean?

Define a `speed` variable to 1 to set the how far the sprite will move each time the button is clicked.

The **Left.Click** event moves the ball to the left every time the button is touched.

The **Right.Click** event moves the ball to the right every time the button is touched.

Can you add buttons to make the ball move up and down?
Movement with Sensors

Move a Sprite by tilting your phone

Get Ready
You will need these components in your design screen:

- Canvas, Sprite, OrientationSensor, Clock

Try These Blocks

What Does it Mean?

A procedure called MoveBug was created that moves the bug in the direction that the phone is tilted.

The OrientationSensor.Angle is used to tell the bug which direction to move based on what angle your phone is tilted.

The OrientationSensor.Magnitude is used to tell the bug what speed to move based on how much tilt you are putting on your phone.

Whenever the Clock1.Timer fires, the event MoveBug will be called.
Movement on a Timer

Move a Sprite with the passing of time.

Get Ready
You will need these components in your design screen:

- Canvas
- Sprite
- Clock

Try These Blocks

What Does it Mean?

**MoveTo** moves an object to an absolute location on the canvas, not a relative amount.

**Clock1** has an Interval that specifies how often the Timer should go off and the Timer event should be called.

Whenever the **Clock 1.Timer** fires the Sprite will move to the right 10 pixels since the Sprite’s Interval is
Start/Stop Timed Movement

This allows the end user to touch a button to start and stop a Sprite moving with the passing of time.

Get Ready

You will need these components in the design screen:
- Canvas, Sprite, Clock, & Button

Try These Blocks

What Does it Mean?

When the StartStopButton.Click is touched, if the clock is enabled then stop the timer and display start on the button. This will stop the Sprite’s movement. The opposite will happen when the clock is disabled.

Now try making the object change also directions each time the button is clicked.
Drawing on a Canvas

Drag your finger across the screen to draw a curved line along the path of your finger.

Get Ready
You will need these components in your design screen:
- **Canvas**
- **Button**
- **Label**

Try These Blocks

What Does it Mean?
When the **Canvas1.Dragged** event is triggered, a curved line will be drawn from where you finger started on the screen to where it was dragged.

When the **Clear.Click** button is touched the canvas will be cleared.
Creating Your Own Color

Create your own colors using the make a color block.

Getting Ready

No components are necessary to use make color.

Blocks Editor

What Does it Mean?

Make color takes in a list of 4 numbers. The first three numbers represent the RGB values. The last is the alpha or how strong the color is.

Purple is made from using 157 as R, 57 as G, 252 as B and 100 as alpha.

When Screen1 is initialized, the background color is set the color we created in the variable Purple.

Can you make a Turquoise color?
Collision Detection

Make something happen when one Sprite collides with another.

Get Ready

You will need these components in your design screen:

- Canvas
- Sprite
- Button

Try These Blocks

HINT: To make your ladybug move by clicking buttons, check out the Movement cards.

What Does it Mean?

The LadyBugCollidedWith event is triggered when the Ladybug touches the Aphid. Then this will make the Aphid disappear.

Can you add multiple aphids? How about adding a sound every time the ladybug eats an aphid?
Bounce Sprite Off Canvas Edge

Make a ball bounce when it hits an edge of a Canvas.

Getting Ready

You will need these components in your design screen:
- Canvas
- Sprite

Blocks Editor

What Does it Mean?

The Ball1.EdgeReached event will detect when the Ball sprite hits the edge of the Canvas and provides an argument edge.

Each edge of a Canvas holds a numeric value. So just feed back the same value edge into the Bounce call.

Ball1.Bounce causes the ball to bounce and move in the opposite direction off the wall (Ball1.Heading is changed by 180°).
Fling Movement

Change the heading and speed of a Sprite by flinging your fingers.

Getting Ready

You will need these components in the Designer:
- Canvas
- ImageSprite

Blocks Editor

What Does it Mean?

Flung detects when the user makes a fling motion with the sprite across the screen.

The user sets the heading and speed from the fling to the PirateSprite’s Heading and Speed.
Drag A Sprite

*Move a sprite side to side by dragging your finger*

Getting Ready

You will need these components in your design screen: **Canvas**, **Sprite**, **Timer**

Blocks Editor

What Does it Mean?

**MonkeySprite.Dragged** has 6 arguments. It is called additional times for as long as the user is still dragging.

- **startX** and **startY** are where the user initially touched the screen.
- **currentX** and **currentY** are where the user is currently touching
- On the first call of this event, **prevX** and **prevY** are the starting coordinates. On other calls, they are the previous **currentX** and **currentY**

When the user drags the MonkeySprite, it will be moved to the new X location, **currentX**, of the drag. The Y stays the same so the monkey can only move in the X-direction.
Random Numbers

Generate random numbers to make Sprites appear in random (x,y) coordinate locations.

Get Ready

You will need these components in your design screen:
- Canvas
- Sprite
- Clock

Try These Blocks

What Does it Mean?

When the Clock1.Timer event is triggered, then Frog.Move.To moves the frog to a random coordinates between the values of 1 and 300 for the x coordinate and 1 and 400 for the y coordinate.

How can you use this for a game?
Speech Recognition

Display the text of what is being said on the phone screen.

Get Ready
You will need these components in the Designer:
- Label, Button, & SpeechRecognizer

Try These Blocks

What Does it Mean?
When the PressAndSpeakButton is clicked the SpeechRecognizer event is called and is ready for you to speak.

The BeforeGettingText event will be triggered before speech has been received and recognized. Then the Label will display no text on the screen.

The AfterGettingText event will be triggered once speech has been received and recognized. Then the Label will display the text on the screen.
Multiple Screens

Use multiple screens in your app. Get the next screen by clicking a button.

Getting Ready

You will need these components in your design screens:
- **Screen1** : Button
- **Screen2** : Label

Blocks Editor

(For Screen1)

![Blocks Editor Diagram]

What Does it Mean?

**Open another screen** takes in a text block. The text inside this block is the name of another screen. When the button is clicked, Screen2 will be opened.