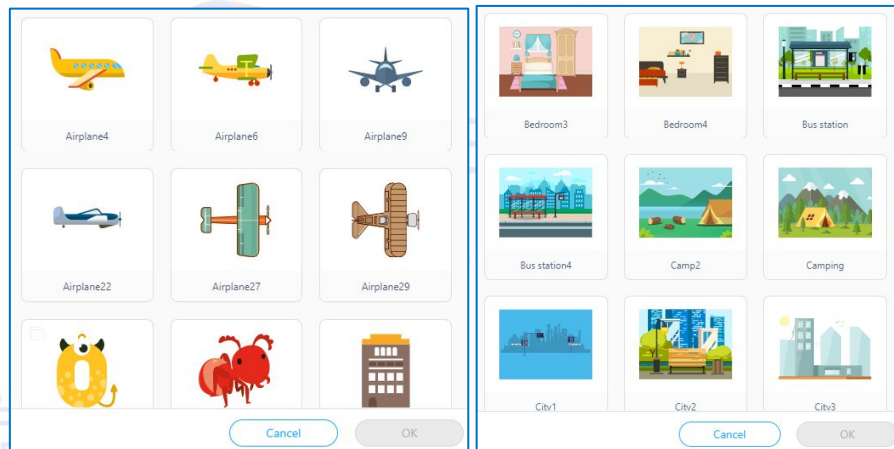




# Lesson 7 – In-built Sprite & Background Libraries





## **Note for Faculty**

1. This is an important but a relatively simple lesson.
2. Focus on search, adding & deletion of sprites & backgrounds.
3. Emphasise on the importance of the thinking thought process for coding.
4. Tell children that they must do so for all the projects. Initially, it has to be done as a dedicated activity. Later, it shall happen on its own.
5. While we shall also talk of the initial positioning of sprites on the stage, we have a complete lesson on it later.



## Lesson Learning



In this lesson we shall learn about mBlock 5's:

- Sprite library.
- Background library.

This will be done using mini projects.





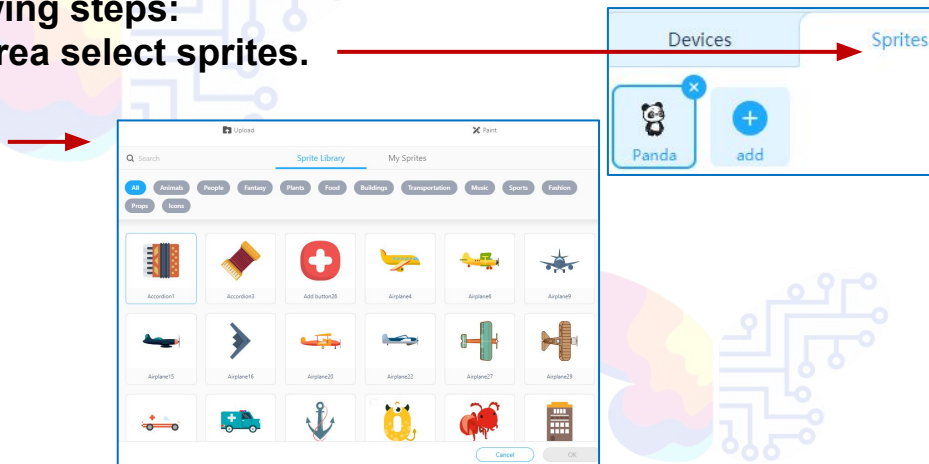
## Code 007. Adding a New Sprite .

The story is: “Add a sprite named Airplane 15”

Coding Steps:

To add, follow the following steps:

- In sprite interaction area select sprites.
- Click on add.
- Sprite Library opens.





- The top of this window, gives two options:

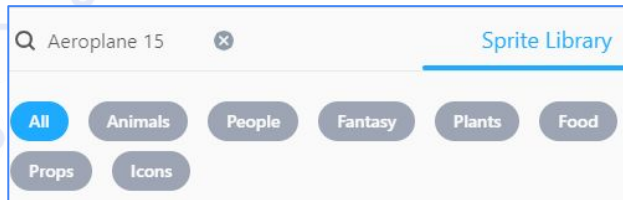


- Currently we shall learn use of **Sprite library**.
- This is the default option & appears automatically.



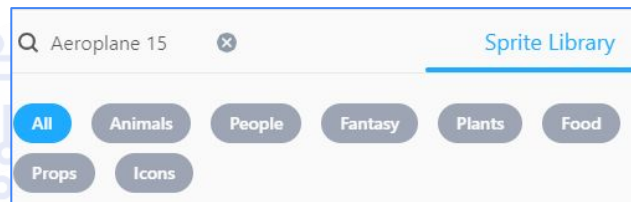


- This contains sprites that are in-built to mBlock.
- In this sprites are placed in ten categories .
- Kindly go through all these categories.





- **Search** option is also available.



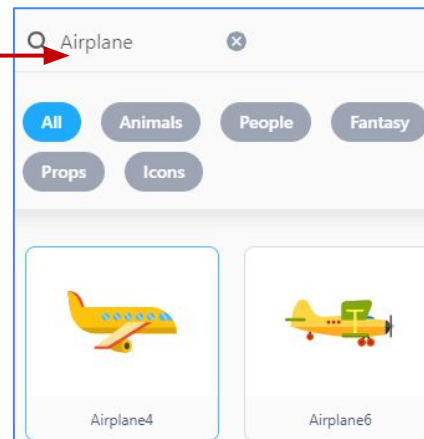


**Do the search according to the category of the sprite.**

For ex, **Airplane 15** belongs to transportation.

Moment we type in **Airplane** sprites of all the aeroplanes will open.

If we type car, all cars will open & so on.

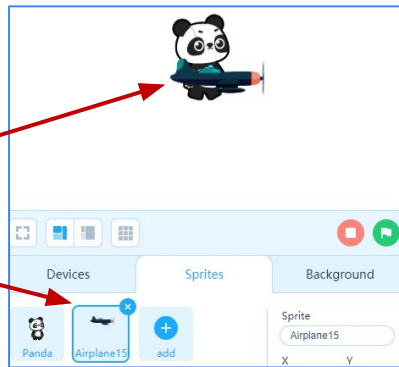






- Select desired sprite **Airplane 15**.
- Click Ok.
- It gets added in the stage along with the default sprite & also in the sprite interaction area.

*Kindly scroll & go through all available options.*

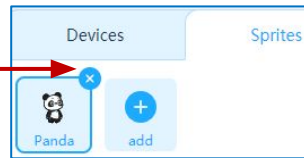
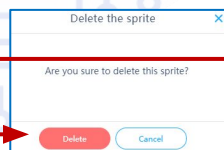




## Code 008. Deleting a Sprite.

The story is: “Delete the default sprite Panda”

To delete, click on X.  
It seeks confirmation.  
Select delete.  
The Panda is deleted.



Same procedure applies for deleting other sprites.



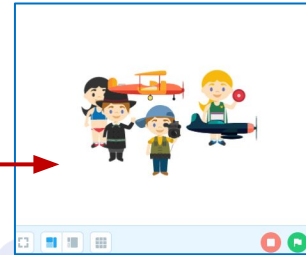
### **Code 009. Selecting Multiple Sprites.**

The story is: “ We are going to simulate an Air Show. For this we need to select four people as audience & two airplanes that will perform in the air show.

Select & bring the sprites on to the stage”

Procedure to select multiple sprites is same as project 7. On selecting, the stage looks like

It is all cluttered up.





## **A Word about the Thought Process for Coding**

**The process of coding starts with a story according to which we select sprites.**

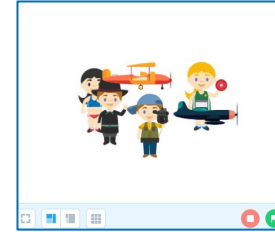
**Thereafter, we go over an internal thought process containing multiple steps on how these will be used in sync with our story.**





The last project ended with the stage having a funny look.

In routine coding, to improve its looks & to make the sprites usable, we would go over the improvement process in our minds.



However, for the sake of teaching we will undertake the main processes as **five short projects**:

1. Add a background.
2. Position them as per the need of the code.
3. Increase or decrease their size.
4. Setting direction.
5. Change backgrounds.

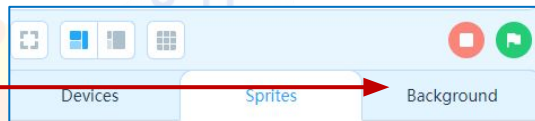


## Code 010. Adding Background

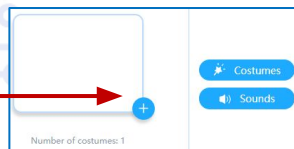
The Story is: “ Now that the sprites have been added, give it a background appropriate for an air show”

To add background:

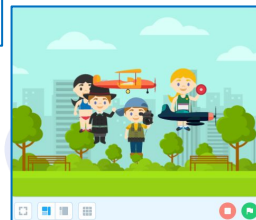
- Click on Background



- In the window that opens Click on +



- Background library opens.
- Scroll & select City 5.
- Background is added



The stage looks better **but requires more improvements.**

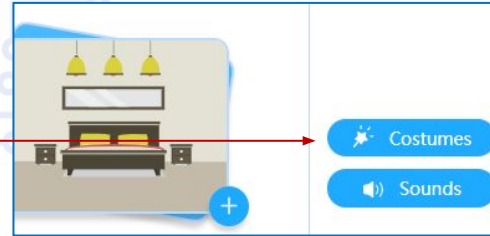


## Deleting a Background

The procedure to delete a background is different to that for sprites.

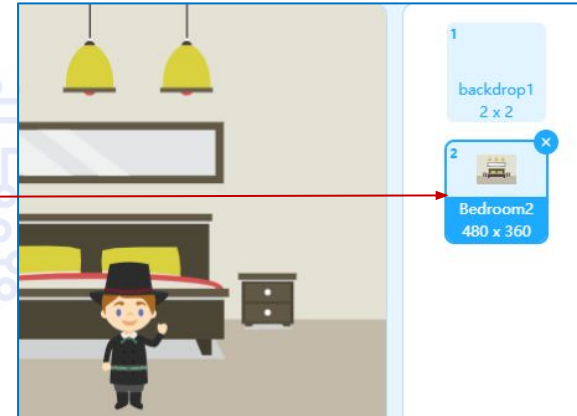
For this:

- In SIA, select costumes.





- In this window, the background appears as a costume below Backdrop 1, as shown here.
- Click on the x at the top right of this.
- Delete window appears.
- Click on delete.
- The background gets deleted.



The procedure is same for deleting costumes. We shall learn about costumes later. Till then remember it.



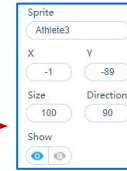


## Code 011. Positioning added Sprites on the Stage .

The Story is: “For the Air show position the airplanes on the top.  
Position the cameraman on ground at the right of the screen &  
others as audience in the centre”

Positioning can be done by two methods.

- Manually using the cursor.
- Using positioning tool.



We have a [separate lesson on positioning tool](#).  
Here we will use the cursor to do the initial  
positioning.



Once positioned, the stage looks better:



### **Code 012.** Increasing & Decreasing Size of Sprites.

The Story is: “Audience are standing in the rear while the cameraman is in the front. Let us therefore reduce their size. Also change size of the two airplanes”

This has two methods.

1. Using positioning utility.
2. By Coding Effects.

We shall learn coding effects in level 2.





To increase or decrease, set size here. →

Sprite  
Athlete3

X: -1      Y: -89

Size: 100      Direction: 90

Show: ☒ ☐

We have reduced the size of:

- Audience to 50, 60 & 70. →
- Yellow plane to 80.

And increased black plane to 120.



Final stage is as shown.



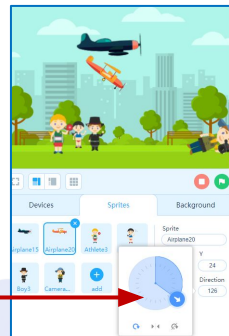
## Code 013. Setting Direction of Sprites

The Story is: “In the air show, the yellow plane goes in for a dive, & the cameraman lies down on the ground to take its video”

To show this we use Direction in the positioning utility.

This gives us two choices:

- Set the direction using numbers.
- Use the inbuilt compass.



We shall learn more in the lesson on Positioning of Sprites.



## Code 014. Changing Backgrounds

The Story is: **“The air show has moved to some other location. Use the same sprites to depict the dive”**

Since the location has changed, the background must also be changed.

Procedure for changing background is the same as for adding seen above.

Following that procedure the changed stage looks like this.





# **To Consolidate**

**To consolidate, ask all buddy teams to give you the story line for making a similar project, involving multiple sprites, Multiple backgrounds, along with some basic moves & messages, as per their imagination.**

**Edit the story & ask them to make the code as part of their home work.**

**Allow them to present their code to all.**





**End of Lesson 7**



**Code Karega India Badhega**