STEM Course for 001 Game Creator:

001 Resources

SoftWeir Inc.
Version 1.0

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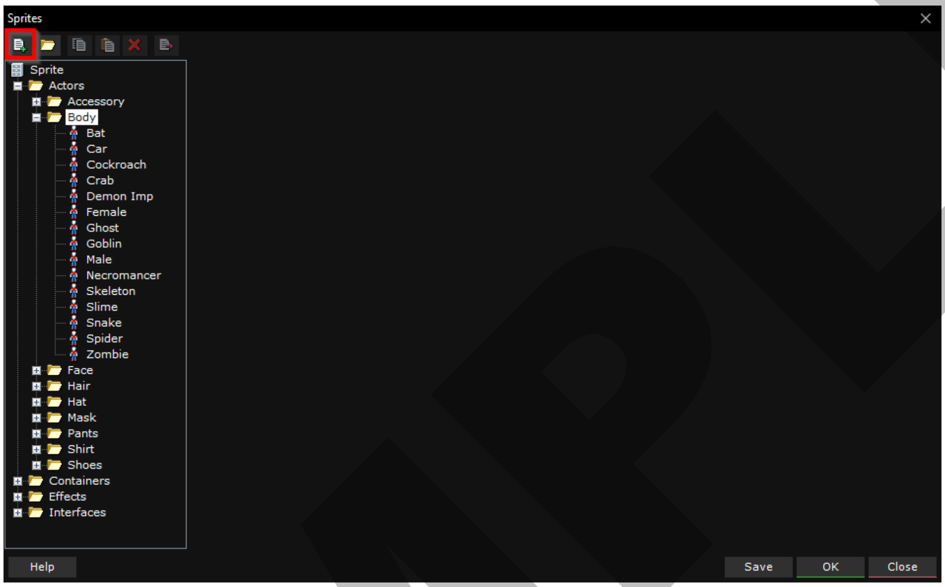
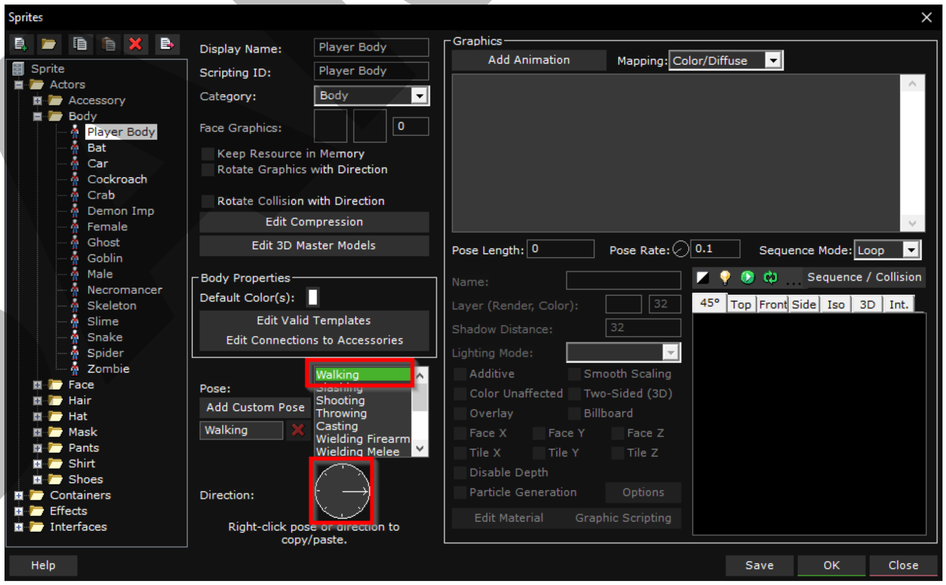
2.3 – Body Sprite

The next step for designing sprites is to create a Body Sprite, which is the base when creating an Actor. When using these sprites on an actor they are able to equip multiple different sprites layered on top of each other to create a complete character! This can include various clothing or special effects. In this section we will be creating the Body portion of a complete character.



Once the editor has opened, click the **Body** folder, then press the **Add Resource** button to bring up the template selection window. Select the option **Body** then press **OK**. This will create a new sprite and set its properties to the default values for a **Body Sprite**.

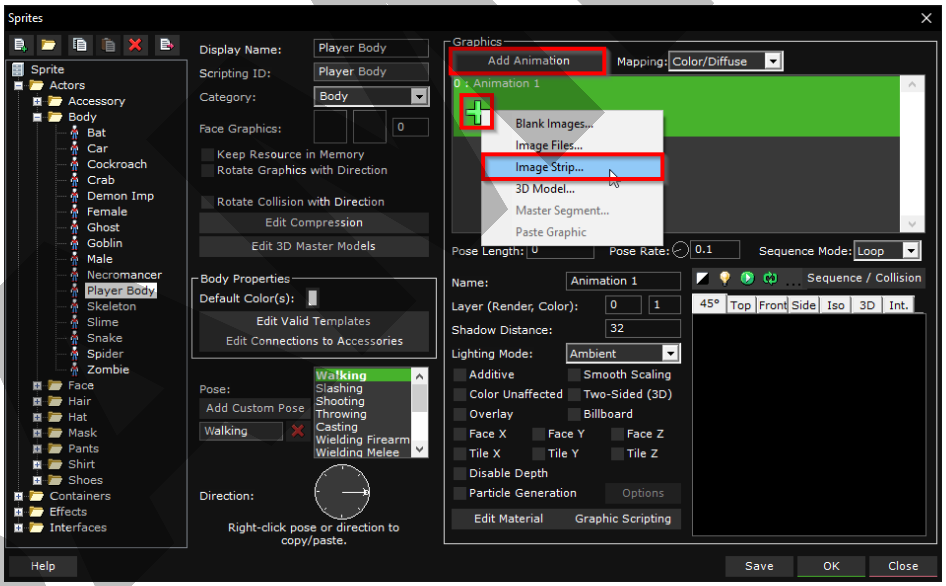

Display Name: Player Body
Scripting ID: Player Body
Category: Body
Face Graphics: 0
Mapping: Color/Diffuse
Pose Length: 0
Pose Rate: 0.1
Sequence Mode: Loop
Layer (Render, Color): 32
Shadow Distance: 32
Pose: Walking

Right-click pose or direction to copy/paste.

By default, we will be editing the **Walking** pose in the **Right** direction. Every pose has a full set of directions that we can put animations into. We will quickly go over what each of the poses do:

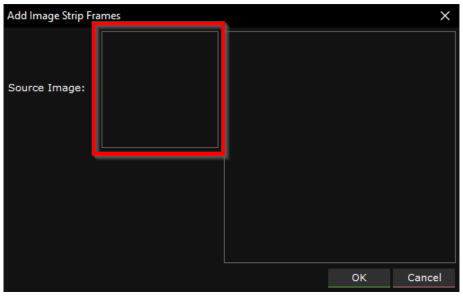
Walking: Used when the actor is moving
Slashing: Used when the actor attacks using a melee weapon
Shooting: Used when the actor attacks using a ranged weapon
Throwing: Used when the actor attacks using a thrown weapon
Casting: Used when the actor attacks using magic
Wielding Firearm: Used when the actor is holding a firearm and walking
Wielding Melee: Used when the actor is holding a melee weapon and walking
Wielding Other: Used when the actor is holding an item and walking
Idle: Used when the actor is not moving
Jumping: Used when the actor is accelerating positively on the Z axis
Falling: Used when the actor is accelerating negatively on the Z axis
Hurting: Used when the actor is damaged
Dying: Used when the actor is defeated/destroyed
Parachuting: Used when the actor is forcefully ejected from a vehicle

You also have the option to define your own custom pose by selecting the **Add Custom Pose** button, then scripting an actor to use it via the **Start/Stop Custom Pose** and **Play Custom Pose** events.

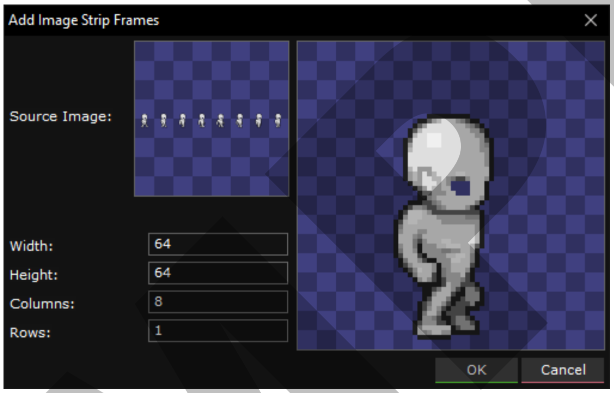


Display Name: Player Body
Scripting ID: Player Body
Category: Body
Face Graphics: 0
Default Color(s):
Pose: Walking
Direction:
Right-click pose or direction to copy/paste.
Mapping: Color/Diffuse
Pose Length: 0
Pose Rate: 0.1
Sequence Mode: Loop
Name: Animation 1
Layer (Render, Color): 0 1
Shadow Distance: 32
Lighting Mode: Ambient

Now we are going to import our **Walking Right** animation. To do this select the **Add Animation** button to add a new animation, then select the **+** icon and select **Image Strip...**

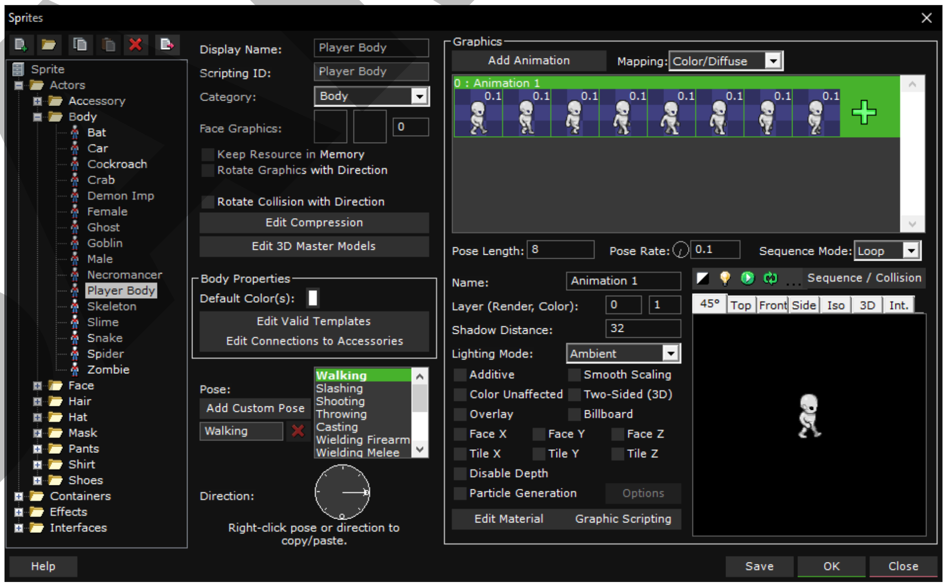


Inside the **Add Image Strip Frames** window, left click on the **Source Image** box and select **Insert** to select an image. The images should be provided to you. We will use the image **Graphics\Character\Strips\Body\Walk Right.png**. You may receive a warning about the graphic not being a multiple of 2, simply select OK to close the message.



Width: 64
Height: 64
Columns: 8
Rows: 1

What you see next may vary a bit. We have to set the proper number of **Columns** and **Rows** for our image strip. As our strip contains 8 frames of animation going from left to right, make sure **Columns** is set to **8** and **Rows** is set to **1**.



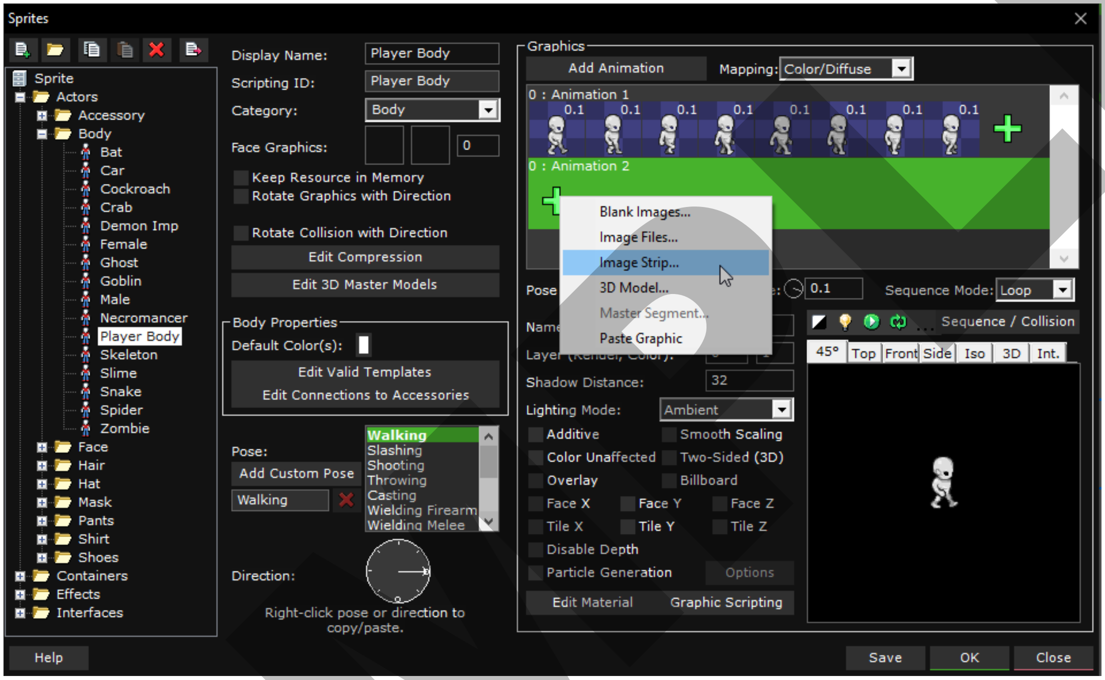
Display Name: Player Body
Scripting ID: Player Body
Category: Body
Face Graphics: 0
□ Keep Resource in Memory
□ Rotate Graphics with Direction
□ Rotate Collision with Direction
Body Properties
Default Color(s):
Pose: Walking
Direction:
Right-click pose or direction to copy/paste.

Mapping: Color/Diffuse
Pose Length: 8
Pose Rate: 0.1
Sequence Mode: Loop
Name: Animation 1
Layer (Render, Color): 0 1
Shadow Distance: 32
Lighting Mode: Ambient
□ Additive □ Smooth Scaling
□ Color Unaffected □ Two-Sided (3D)
□ Overlay □ Billboard
□ Face X □ Face Y □ Face Z
□ Tile X □ Tile Y □ Tile Z
□ Disable Depth
□ Particle Generation

After you press **OK** the animation will automatically be filled with each frame. You can test your animation by pressing the **Play Continuously** button above the preview window.

*(Note: If your animation appears too slow; select every frame of the animation and change the **Frame Time** option. You will have to modify this for every animation and clothing layer you add in the future to ensure they stay in sync!)*

We are now going to setup the **Unaffected** layer. This layer will not be affected by color.



Sprites

Display Name: Player Body

Scripting ID: Player Body

Category: Body

Face Graphics: 0

Mapping: Color/Diffuse

Sequence Mode: Loop

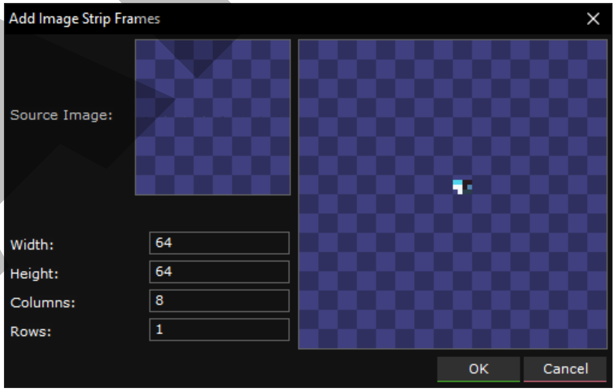
Shadow Distance: 32

Lighting Mode: Ambient

Pose: Walking

Right-click pose or direction to copy/paste.

To do this we will select the **Add Animation** button and add another **Image Strip**.



Add Image Strip Frames

Source Image:

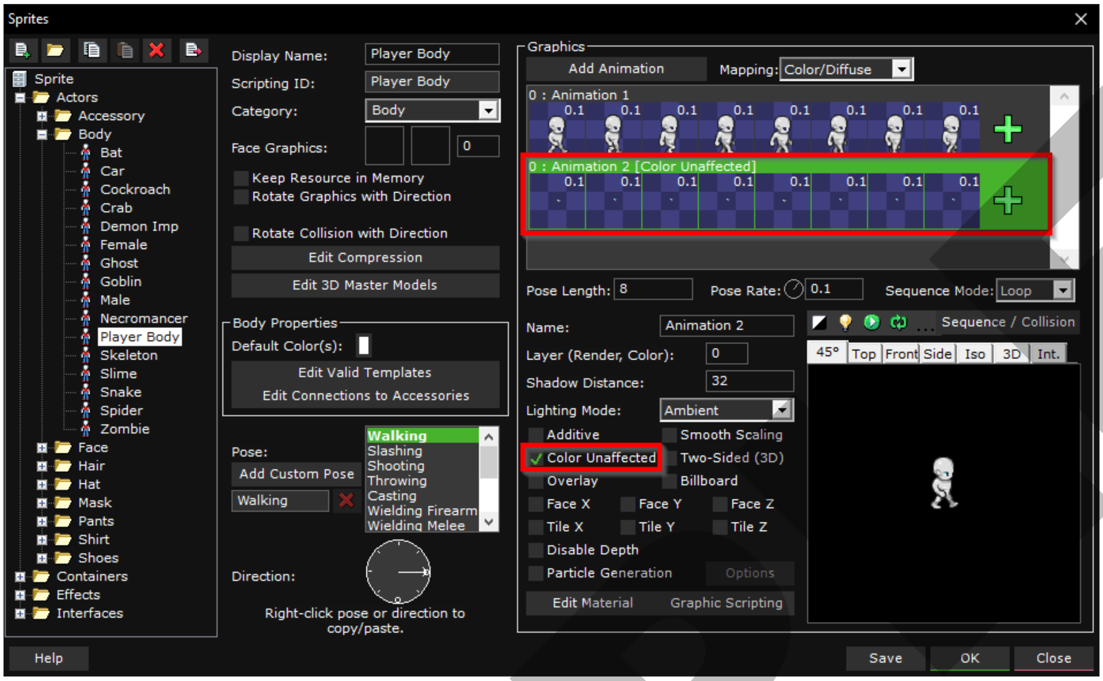
Width: 64

Height: 64

Columns: 8

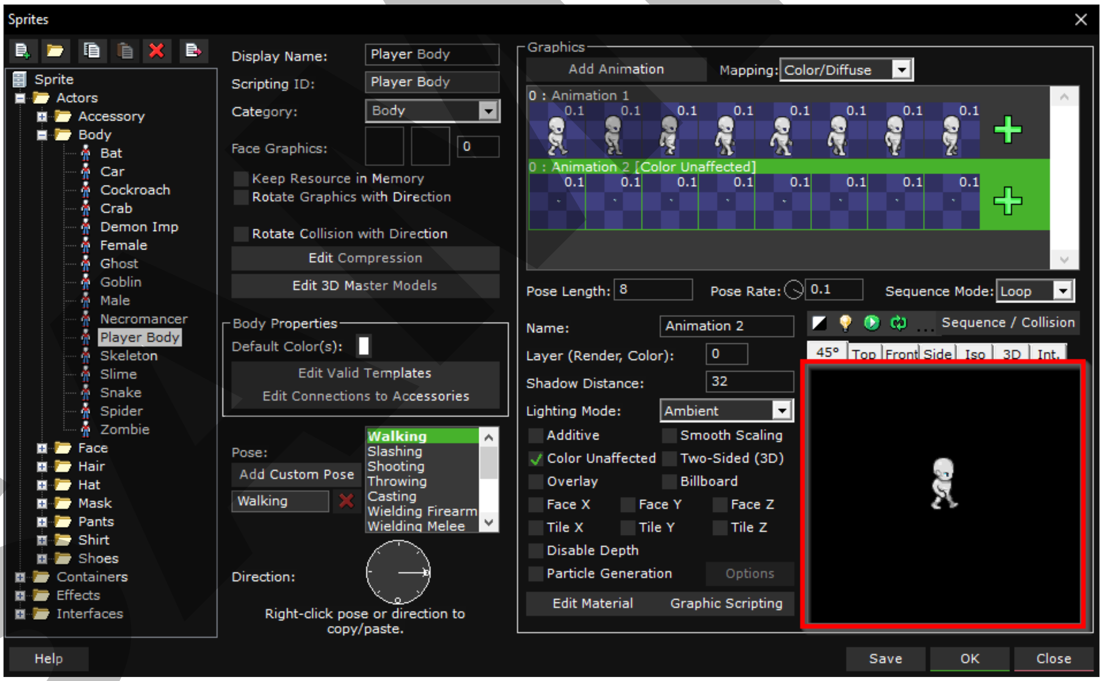
Rows: 1

We will then select the **Walk Right Unaffected.png** file and make sure **Columns** is set to 8 and **Rows** is set to 1. Then press **OK**.



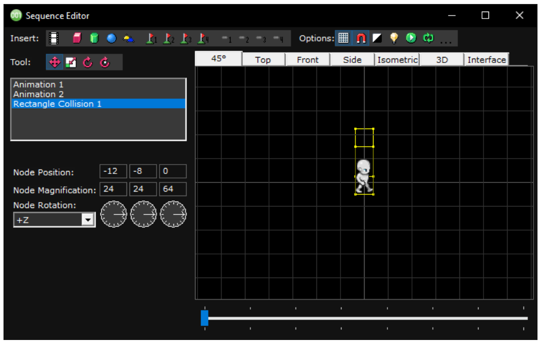
Display Name: Player Body
Scripting ID: Player Body
Category: Body
Face Graphics: 0
□ Keep Resource in Memory
□ Rotate Graphics with Direction
□ Rotate Collision with Direction
Default Color(s):
Pose: Walking
Mapping: Color/Diffuse
0 : Animation 1
0 : Animation 2 [Color Unaffected]
Pose Length: 8
Pose Rate: 0.1
Sequence Mode: Loop
Name: Animation 2
Layer (Render, Color): 0
Shadow Distance: 32
Lighting Mode: Ambient
□ Additive □ Smooth Scaling
☑ Color Unaffected □ Two-Sided (3D)
□ Overlay □ Billboard
□ Face X □ Face Y □ Face Z
□ Tile X □ Tile Y □ Tile Z
□ Disable Depth
□ Particle Generation

Now with **Animation 2** selected, click the **Color Unaffected** checkbox to ensure that this animation layer doesn't change color.



Display Name: Player Body
Scripting ID: Player Body
Category: Body
Face Graphics: 0
□ Keep Resource in Memory
□ Rotate Graphics with Direction
□ Rotate Collision with Direction
Default Color(s):
Pose: Walking
Mapping: Color/Diffuse
0 : Animation 1
0 : Animation 2 [Color Unaffected]
Pose Length: 8
Pose Rate: 0.1
Sequence Mode: Loop
Name: Animation 2
Layer (Render, Color): 0
Shadow Distance: 32
Lighting Mode: Ambient
□ Additive □ Smooth Scaling
☑ Color Unaffected □ Two-Sided (3D)
□ Overlay □ Billboard
□ Face X □ Face Y □ Face Z
□ Tile X □ Tile Y □ Tile Z
□ Disable Depth
□ Particle Generation

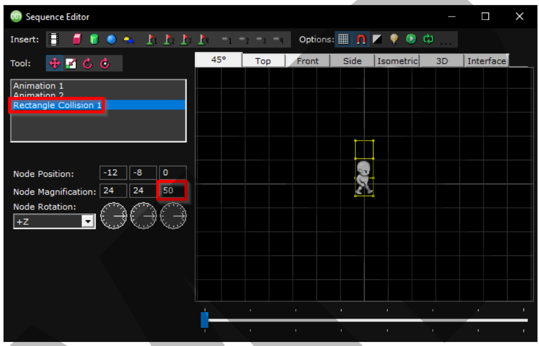
Next, we are going to make sure our animation layers are positioned correctly and that our collision matches our sprite. To do this, click the **Preview** box to bring up the **Sequencer**, or click on the Sequence / Collision button.



Animation 1
Animation 2
Rectangle Collision 1

Node Position: -12 -8 0
Node Magnification: 24 24 64
Node Rotation: +Z

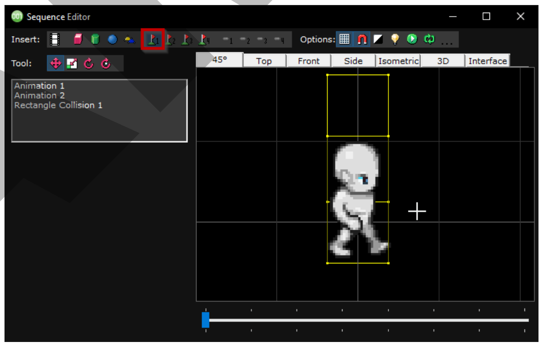
It is recommended to not have the bottom of the feet sit directly at the origin for this camera view (the point where the two thicker lines meet at X=0 and Y=0). If we were making a platformer you would want to make sure the feet sat at the origin, but as this is a 45° game we want it offset a bit.



Animation 1
Animation 2
Rectangle Collision 1

Node Position: -12 -8 0
Node Magnification: 24 24 50
Node Rotation: +Z

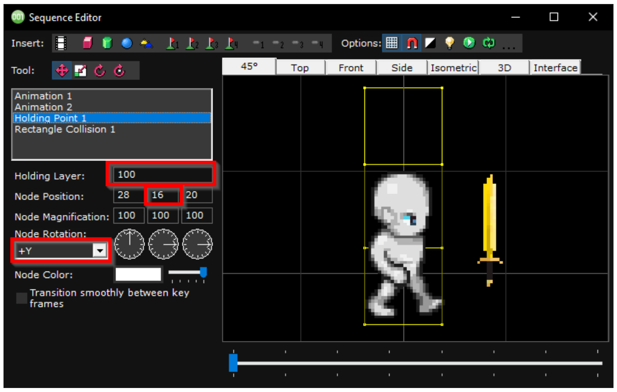
As the default Z size of the rectangle collision is pretty big, we will shrink it down a bit to better match our sprite (From 64 to 50). We don't have to do this for every direction, as collisions are shared for the entire pose!



Animation 1
Animation 2
Rectangle Collision 1

Next, we are going to add a holding point. These are where various **Items** are held visually when they are equipped. Select the **Holding Point 1** button then click in the sequencer window to place a holding point. It will default to a gold colored sword.

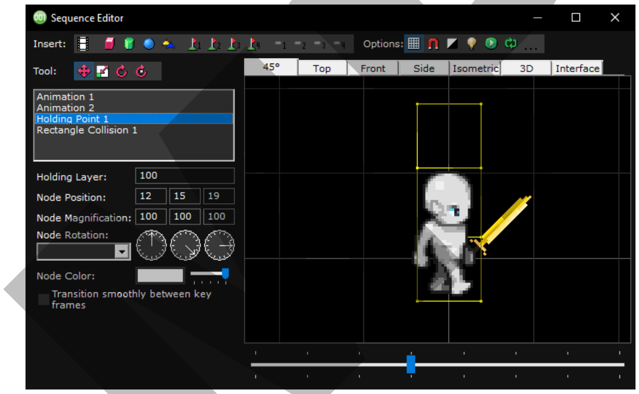
*(Note: You can change which item is previewed by selecting the **...** button next to the* ***Play Continuously*** *button)*



Animation 1
Animation 2
Holding Point 1
Rectangle Collision 1

Holding Layer: 100
Node Position: 28 16 20
Node Magnification: 100 100 100
Node Rotation: +Y
Node Color:
Transition smoothly between key frames

It is important to orientate the holding frame before we modify the position. To do this, ensure the **Y** position is set to **15**, for when the sword is behind the sprite, and **16** for when the sword is in front of the sprite. This is because **Animation 1** sits on the **Y** position **16**. Then make sure that the **Rotation** is set to **+Y** which is what we used in the 45° game mode. We will also make sure the **Holding Layer** is set to **100**. This way the sword will render on top of the sprite.



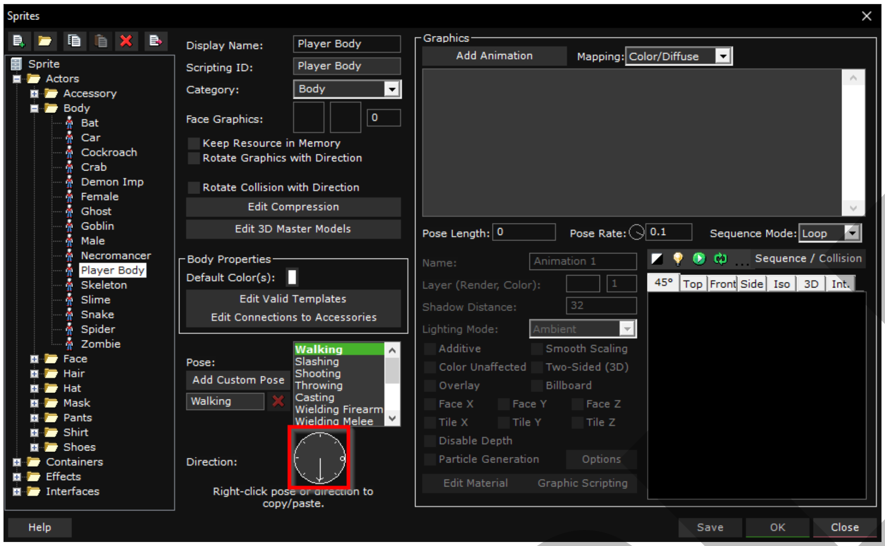
Animation 1
Animation 2
Holding Point 1
Rectangle Collision 1

Holding Layer: 100
Node Position: 12 15 19
Node Magnification: 100 100 100
Node Rotation:
Node Color:
Transition smoothly between key frames

Select the **Snap to Grid** option to disable it, which allows us to position objects on a per-pixel basis. Then click and drag on the sword and modify the **Y Rotation** to angle the sword into the sprite's hand. Then use the slider at the bottom of the window to move between each animation frame and position the sword into the sprite's hand.

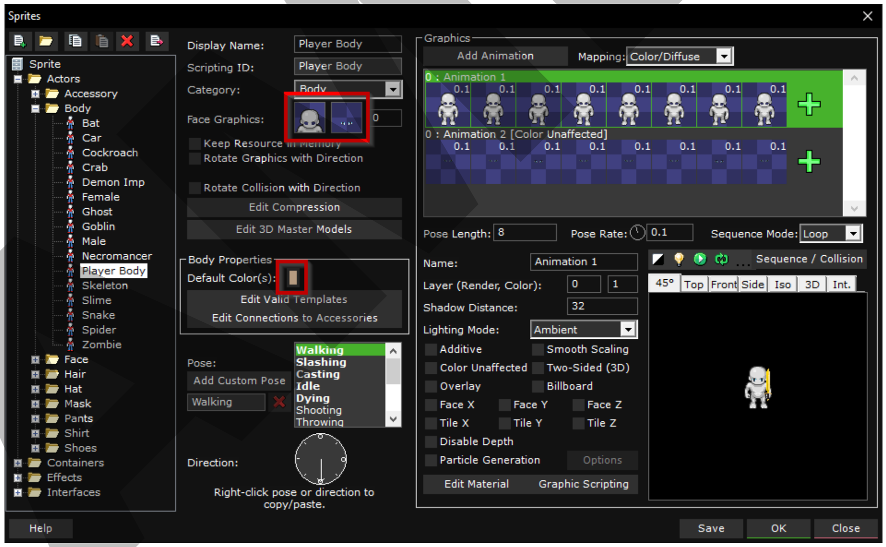
*(Note: If the sword's rotation gets messed up, simply reselect the dropdown and select **Y+** to reset it for that frame)*

Once you have finished animating the sprite, close the window to save your changes.



Display Name: Player Body
Scripting ID: Player Body
Category: Body
Face Graphics: 0
☐ Keep Resource in Memory
☐ Rotate Graphics with Direction
☐ Rotate Collision with Direction
Body Properties
Default Color(s):
Pose: Walking
Direction:
Right-click pose or direction to copy/paste.
Graphics
Mapping: Color/Diffuse
Pose Length: 0
Pose Rate: 0.1
Sequence Mode: Loop
Name: Animation 1
Layer (Render, Color): 1
Shadow Distance: 32
Lighting Mode: Ambient
☐ Additive ☐ Smooth Scaling
☐ Color Unaffected ☐ Two-Sided (3D)
☐ Overlay ☐ Billboard
☐ Face X ☐ Face Y ☐ Face Z
☐ Tile X ☐ Tile Y ☐ Tile Z
☐ Disable Depth
☐ Particle Generation

Now that we have set up the **Walking Right** pose, we now have to import the **Walking Down** and **Walking Up** animations. You will notice that a small circle on the direction dial will appear at each direction that has an animation. This circle appears every time that direction has an animation. We can skip the **Walking Left** animation as it will automatically mirror the **Walking Right** animation to save some time. You will also have to repeat this entire process for every pose you want to add, such as using a melee weapon or idle pose.



Display Name: Player Body
Scripting ID: Player Body
Category: Body
Face Graphics: 0
☐ Keep Resource in Memory
☐ Rotate Graphics with Direction
☐ Rotate Collision with Direction
Body Properties
Default Color(s):
Pose: Walking
Direction:
Right-click pose or direction to copy/paste.
Graphics
Mapping: Color/Diffuse
Pose Length: 8
Pose Rate: 0.1
Sequence Mode: Loop
Name: Animation 1
Layer (Render, Color): 0 1
Shadow Distance: 32
Lighting Mode: Ambient
☐ Additive ☐ Smooth Scaling
☐ Color Unaffected ☐ Two-Sided (3D)
☐ Overlay ☐ Billboard
☐ Face X ☐ Face Y ☐ Face Z
☐ Tile X ☐ Tile Y ☐ Tile Z
☐ Disable Depth
☐ Particle Generation

Once we have finished setting up all the various poses, the final options we will want to set are the face graphics and the default body color. The face graphic is used in **Advanced Message Boxes** to display which character is talking. For the face graphic, simply select the boxes and insert a 128x128 image. The left box is used for the part affected by the body color, and the right box is for the part unaffected by color. Finally, set the **Default Color** option. If you only want this sprite to be able to be used by certain actor templates, you can modify them using the **Edit Valid Templates** button.

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001 Resources Workbook

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4.2 Exercise – Game Basic NPC

Plan an NPC that would be present in your game idea you wrote up in **Exercise 1.0**.

Name: ________________________

Appearance:

Actor Template: ________________

Stats (If applicable):

__________________:____________

__________________:____________

__________________:____________

__________________:____________

__________________:____________

__________________:____________

Interactions (Scripting):

____

____

____

____

____

____

____

Interactions (Visual Explanation):

5.1 Exercise – Game Items

List three items you would use from your game idea you wrote up in **Exercise 1.0**, providing a name, drawing and explanation of each. (If your game doesn't use items, list 3 items from your favorite game!)

1)________________________

2)________________________

3)________________________

2.3 Assignment – Body Sprites

Now that you have been shown how to create a body sprite, using the images provided to you:

- Import the Walking, Slashing, Casting, Idle and Dying animation poses (For Up/Down/Right Directions)
- Set up the face graphic
- Set up holding points for all the animations where they apply

4.5 Assignment – Statistics

Now that you have been shown the basics of how statistics work, create some form of statistic interaction. You can either create a new statistic or use an existing one.

- You can change the Current and Maximum values for statistics by using the **Change Current Statistic** and **Change Maximum Statistic** events
- You can use the use-values **Current Statistic**, **Maximum Statistic** and **Statistic With Item** inside a **Comparison Branch** to create a stat requirement
- You can modify the **Attacked** trigger to add new functionality, such as having no damage being dealt based on a statistic
- You can add a while/timer that recovers **HP** or **MP** over time

4.5 Quiz – Statistics & Area of Equipment

While using 001 Game Creator, you will be using Statistics and Areas of Equipment to change game mechanics. In this section we learned about statistics and equipment.

Circle/Fill In the correct answer(s)

1) Statistics contain multiple values for every actor. Those values are called:

a) Amount
b) Current Value
c) Stat Progression
d) Maximum Value

2) The stat used to determine how strong an actor’s attack is called ________________.

a) Defense
b) Damage
c) Power
d) Attack

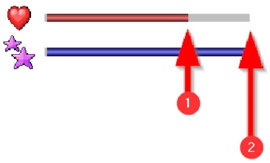
3) Only actors that belong to the player's party can have stat progressions.

a) True
b) False

4) The statistic responsible for casting magic spells is _______________.

a) MP
b) Wisdom
c) HP
d) Magic

5) Label the image below



1) ____

2) ____

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Circle/Fill In the correct answer(s)

1) Statistics contain multiple values for every actor. Those values are called:

a) Amount
[✓ b) Current Value]
c) Stat Progression
[✓ d) Maximum Value]

2) The stat used to determine how strong an actor’s attack is called ________________.

a) Defense
b) Damage
c) Power
[✓ d) Attack]

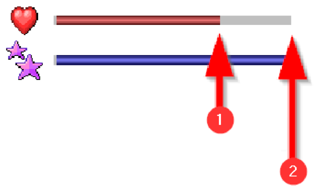
3) Only actors that belong to the player's party can have stat progressions.

[✓ a) True]
b) False

4) The statistic responsible for casting magic spells is _______________.

[✓ a) MP]
b) Wisdom
c) HP
d) Magic

5) Label the image below



1) Current Value

2) Maximum Value

6.2 Quiz – Sound Effects

While using 001 Game Creator, you will want there to be some audio feedback for player actions. In this section we learned how to add and use a sound effect.

Circle the correct answer(s)

1) The **Play Sound** event can be used to play audio in 5.1 Surround Sound.

a) True
b) False

2) Circle all options which can be used to make your sound effects not sound too repetitive.

a) Sound Variation
b) Maximum Overlap
c) Volume Variation
d) Pitch Variation

3) Every interaction in a game should almost always have a sound effect associated with it.

a) True
b) False

4) You should always set the **Maximum Overlap** to the highest possible number.

a) True
b) False

5) If your sound effect isn't showing up in the **Sound** scripting events that means...?

a) The sound file is invalid
b) You have used too many sound effects
c) The Sound is set to Music instead of Sound Effect
d) None of the above

6.2 Quiz – Sound Effects

While using 001 Game Creator, you will want there to be some audio feedback for player actions. In this section we learned how to add and use a sound effect.

Circle the correct answer(s)

1) The **Play Sound** event can be used to play audio in 5.1 Surround Sound.

a) True
[✓ b) False]

2) Circle all options which can be used to make your sound effects not sound too repetitive.

[✓ a) Sound Variation]
b) Maximum Overlap
[✓ c) Volume Variation]
[✓ d) Pitch Variation]

3) Every interaction in a game should almost always have a sound effect associated with it.

[✓ a) True]
b) False

4) You should always set the **Maximum Overlap** to the highest possible number.

a) True
[✓ b) False]

5) If your sound effect isn't showing up in the **Sound** scripting events that means...?

a) The sound file is invalid
b) You have used too many sound effects
[✓ c) The Sound is set to Music instead of Sound Effect]
d) None of the above