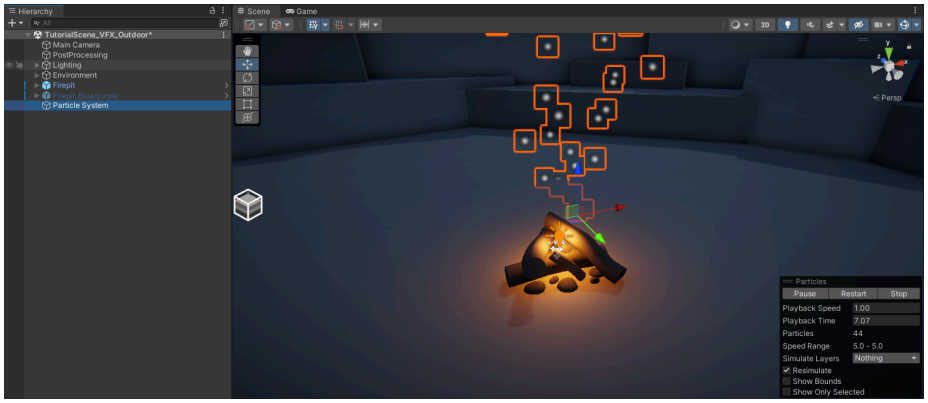
Creating an Environmental Particle System: Step-by-Step Guide

Objective: Students will create a weather effect (rain or snow) using Unity's Particle System. They will learn to modify different modules to control size, speed, emission, shape, and appearance.

Step 1: Add and Position a New Particle System

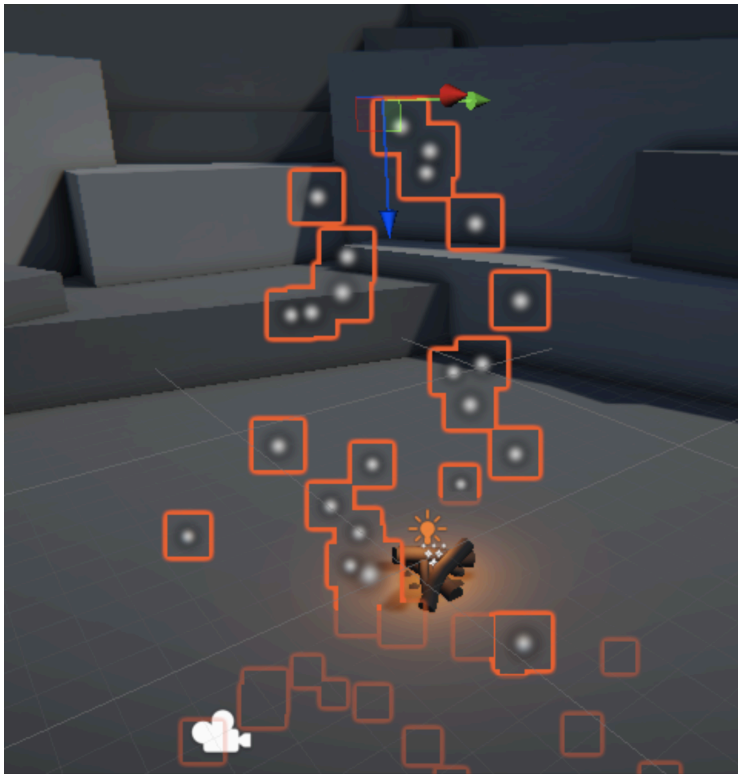


What to Do:

1. Open Unity and load the project files.
2. Navigate to **Assets > CreativeCore_VFX > Scenes** and open **TutorialScene_VFX_Outdoor**.
3. In the **Hierarchy**, right-click > **Effects** > **Particle System**.
4. Rename the system to **FX_Snow** or **FX_Rain**.
5. Adjust the position: **X=0, Y=10, Z=0**.
6. Adjust the rotation: **X=90, Y=0, Z=0**.
7. Press **Play** to preview.

Expected Outcome:

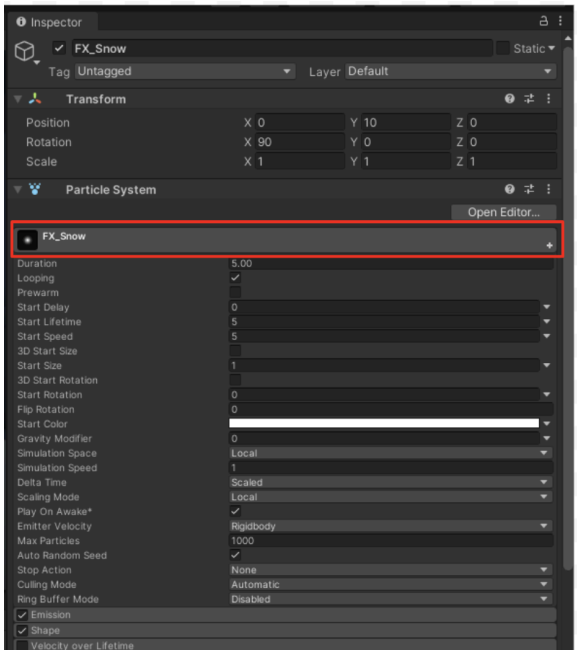
- A new particle system appears in the scene with white dots floating downward.



Step 2: Configure the Main Module Properties

What to Do:

1. Select **FX_Snow** in the **Hierarchy**.
2. Locate the **Main Module** in the **Inspector**.
3. Adjust **Start Size**:
    - For snow: **0.1**
    - For rain: **0.1**
4. Adjust **Start Speed**:
    - Snow: **1**
    - Rain: **10**
5. Adjust **Start Lifetime**: Increase/decrease to match the scene.
6. Enable **Prewarm** (so particles are already falling when the scene starts).



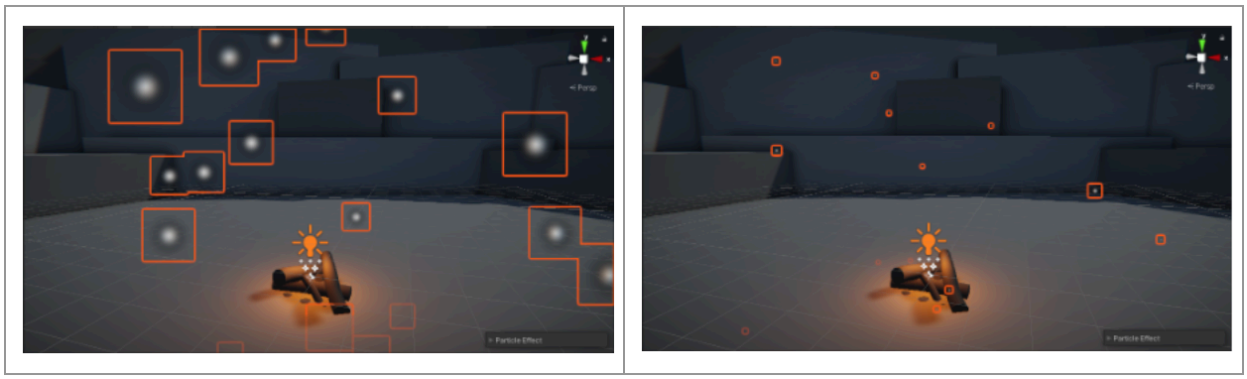
Expected Outcome:

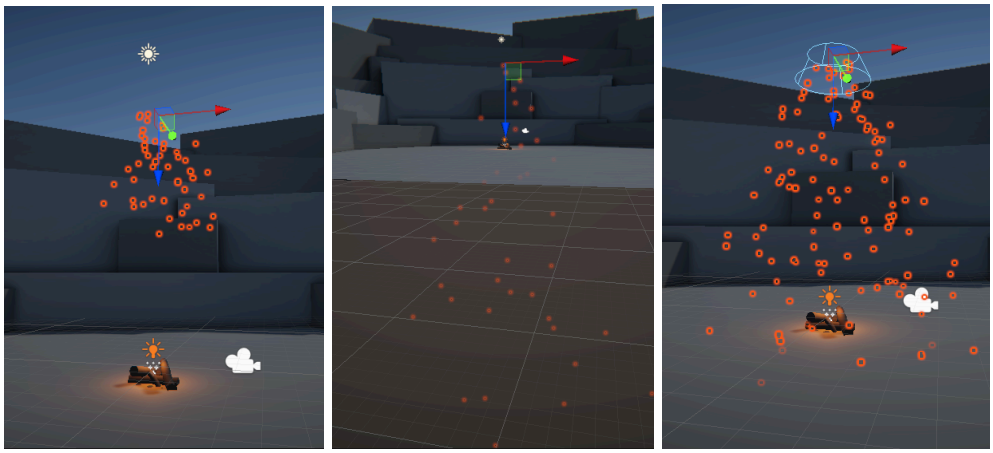
- The particles now resemble falling snow or rain with appropriate size and speed.

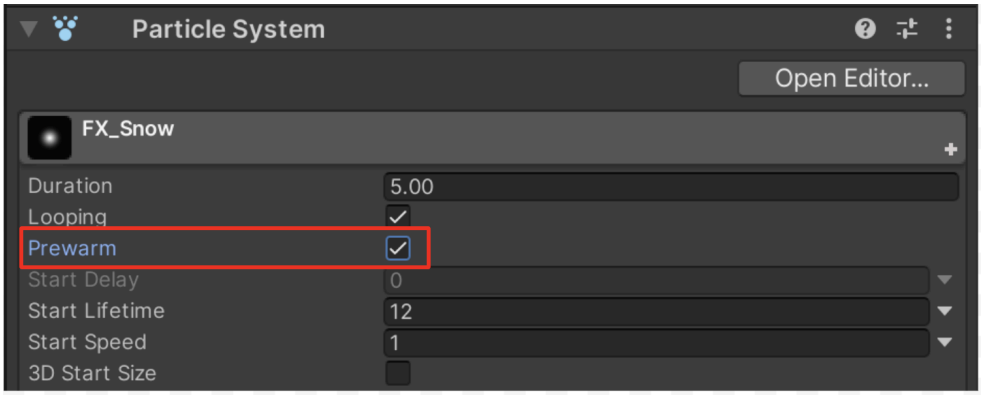
Step 3: Configure Shape and Emission Modules

What to Do:

1. Select **Shape Module**.
2. Change **Shape** to **Box**.
3. Adjust **Scale** to: **X=10, Y=10, Z=1**.
4. Select **Emission Module**.
5. Increase **Rate over Time**:
    - Light weather: **150 particles/second**
    - Heavy weather: **1000 particles/second**
6. In **Main Module**, increase **Max Particles** from **1000 to 10,000**.







Expected Outcome:

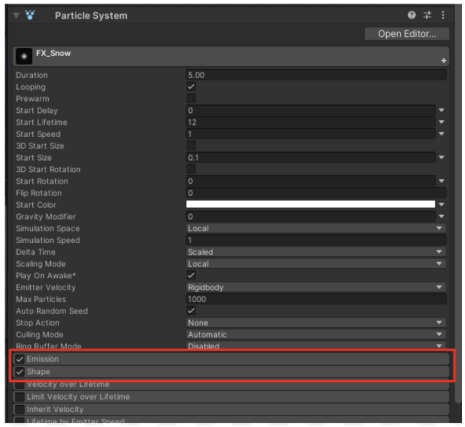
- The particles now cover a larger area and fall at a realistic density.

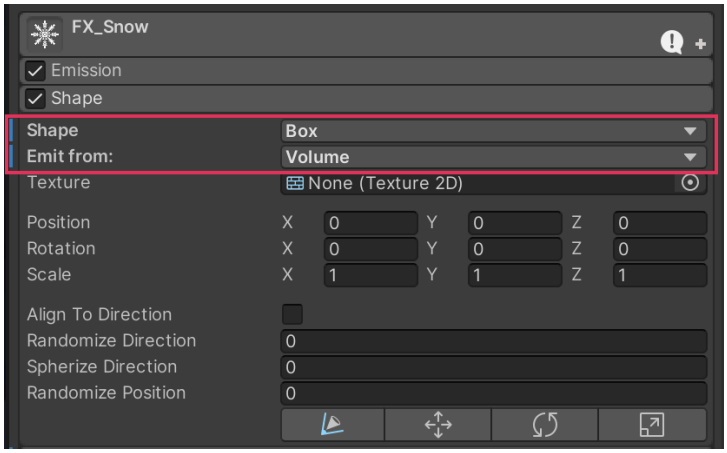
Step 4: Configure the Renderer Module

What to Do:

1. Expand the **Renderer Module**.

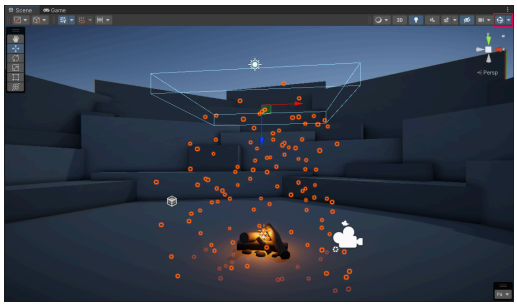
2. Click the **Material Property** selector.
3. Choose **SnowMaterial** or **RaindropMaterial**.

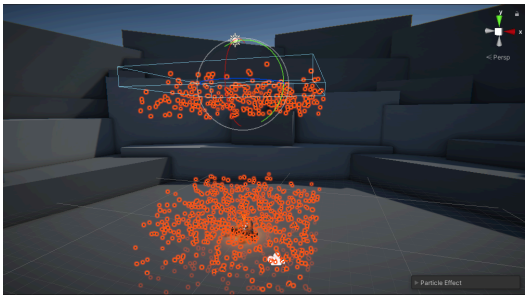


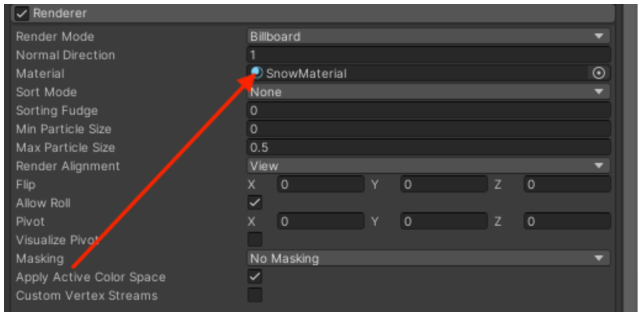


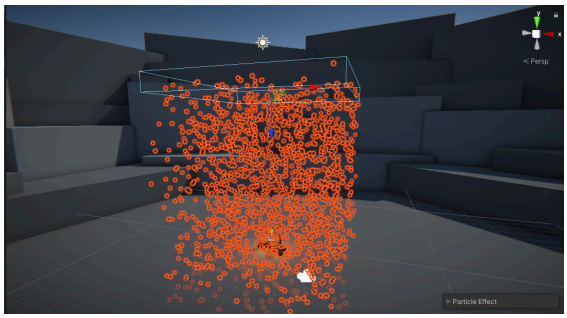
Expected Outcome:

- The particles now look like realistic snowflakes or raindrops.






Renderer
Render Mode
Billboard
Normal Direction
1
Material
SnowMaterial
Sort Mode
None
Sorting Fudge
0
Min Particle Size
0
Max Particle Size
0.5
Render Alignment
View
Flip
X 0 Y 0 Z 0
Allow Roll
Pivot
X 0 Y 0 Z 0
Visualize Pivot
Masking
No Masking
Apply Active Color Space
Custom Vertex Streams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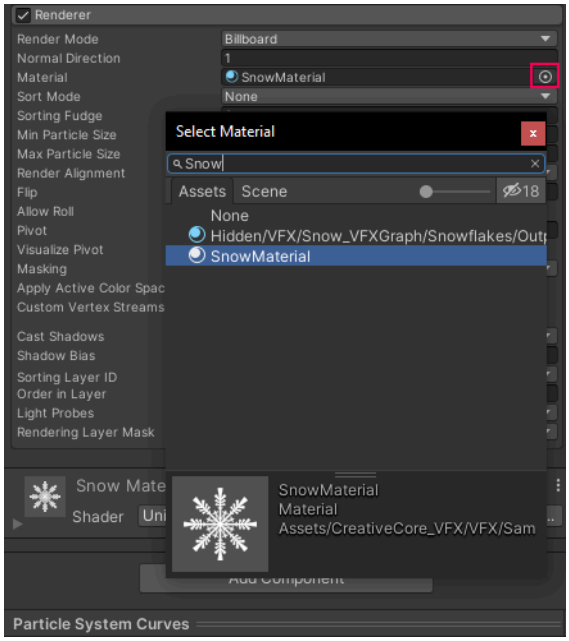
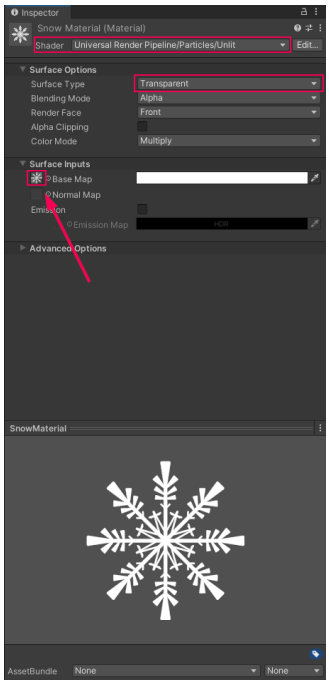
Particle Effect


Renderer
Render Mode
Billboard
Normal Direction
1
Material
SnowMaterial
Sort Mode
None
Sorting Fudge
Min Particle Size
Max Particle Size
Render Alignment
Flip
Allow Roll
Pivot
Visualize Pivot
Masking
Apply Active Color Spac
Custom Vertex Streams
Cast Shadows
Shadow Bias
Sorting Layer ID
Order in Layer
Light Probes
Rendering Layer Mask
Select Material
Snow
Assets
Scene
18
None
Hidden/VFX/Snow_VFXGraph/Snowflakes/Out
SnowMaterial
Snow Mate
Shader
Uni
SnowMaterial
Material
Assets/CreativeCore_VFX/VFX/Sam
Particle System Curves


Inspector
Snow Material (Material)
Shader
Universal Render Pipeline/Particles/Unlit
Edit...
Surface Options
Surface Type
Transparent
Blending Mode
Alpha
Render Face
Front
Alpha Clipping
Color Mode
Multiply
Surface Inputs
Base Map
Normal Map
Emission
Emission Map
HDR
Advanced Options
SnowMaterial
AssetBundle
None
None

Step 5: Save as a Prefab

What to Do:

1. Drag the **FX_Snow** or **FX_Rain** object from the **Hierarchy** to the **Prefabs** folder.

Expected Outcome:

- The system is now reusable for future scenes.

Step 6: Experiment with Different Effects

What to Do:

- Duplicate the Prefab and adjust settings to create different weather effects.
- Make at least 4 different weather VFX(sunny, rainy, windy, stormy, and cloudy)

Final Outcome: Students will successfully create a weather effect in Unity, understand how to modify Particle System modules, and save their work as a Prefab.

Deliverable:

- A WebGL build link showcasing the completed weather effect.