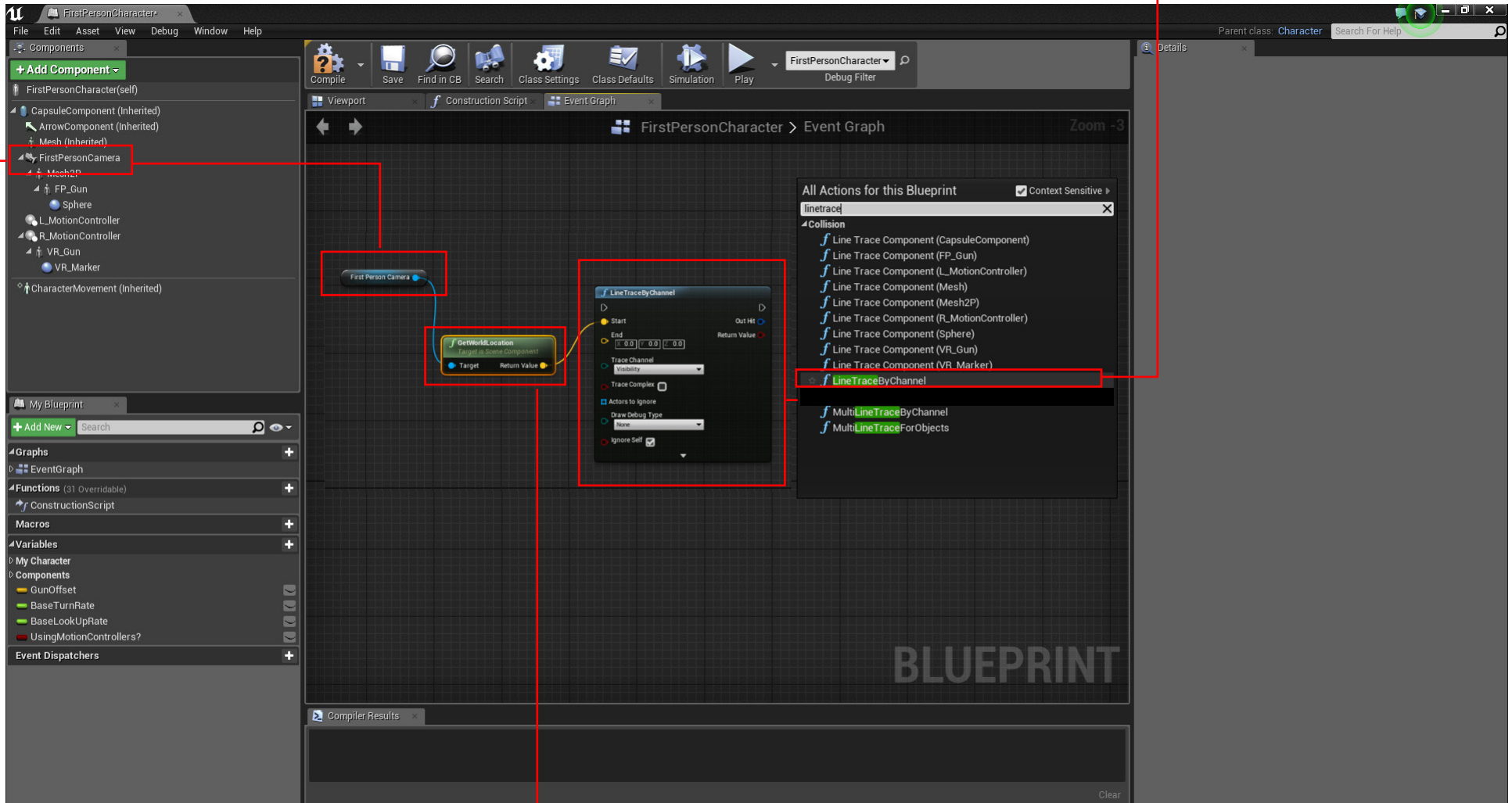


**NOTE: This works for a First Person level.**

**Being able to pick up an object and move it is great way to hide secret doorways or passages in your level.**

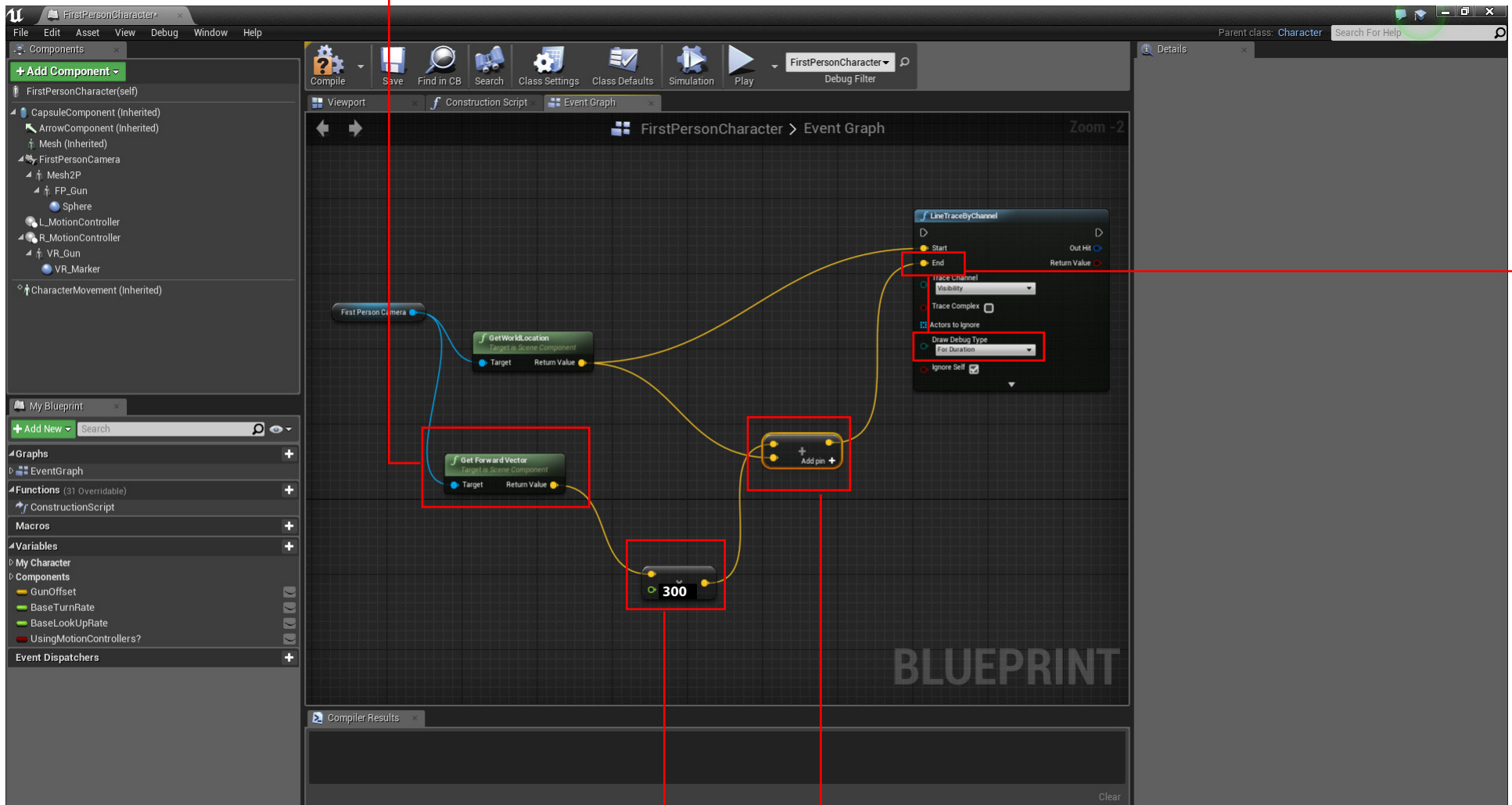
1. Open the First Person Blueprint and create a LineTraceForChannel



2. Drag the FirstPersonCamera into the Blueprint

3. From the Camera drag a WorldLocation and connect to the Start

4. Drag from the Camera a "Get Forward Vector".

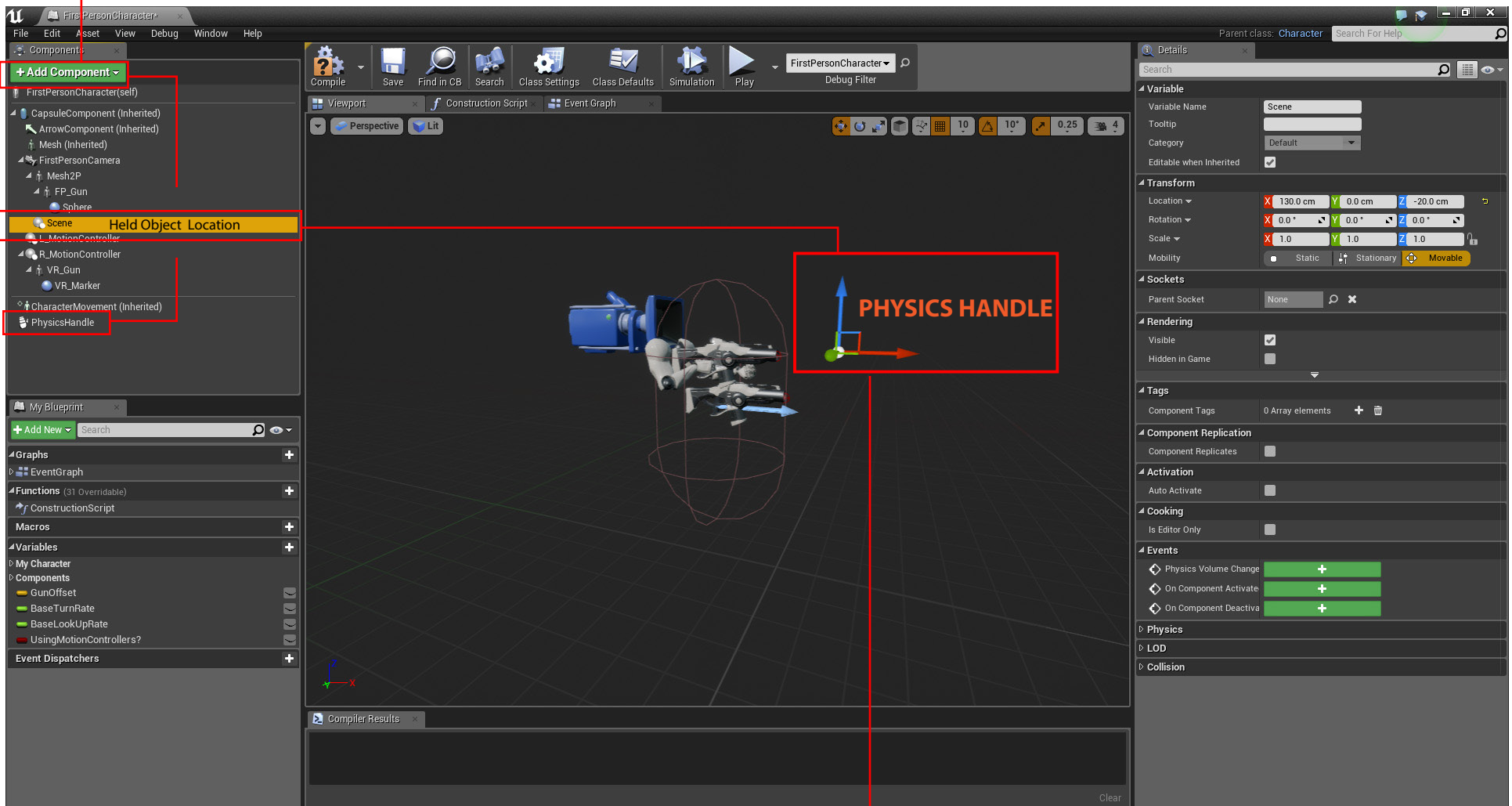


5. Drag a Vector \*Float  
Set to 300

6. Drag "Vector + Vector" and connect to End  
& GetWorldLocation. Set "For Duration"

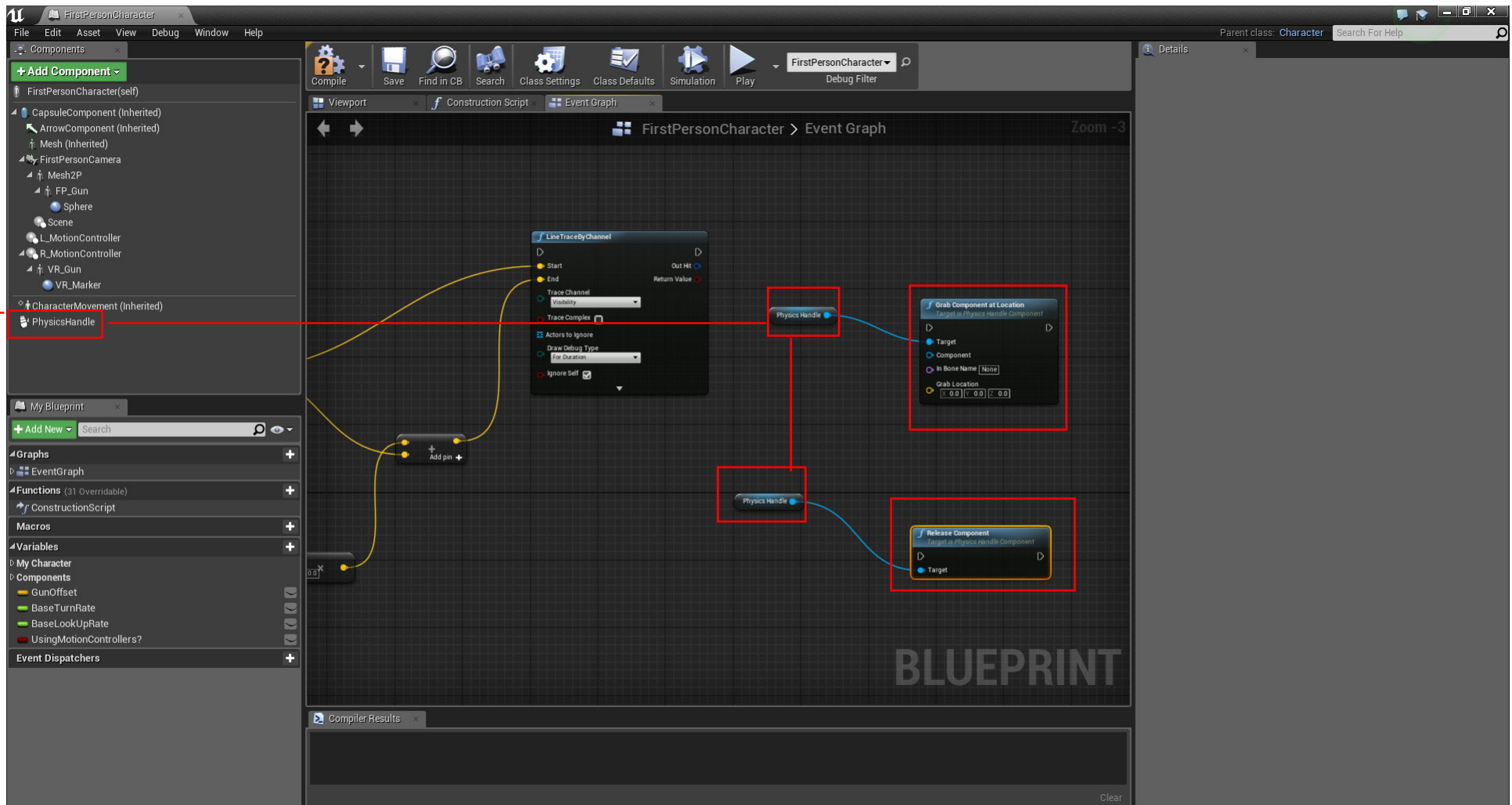
8. Click Add Component and create a "Scene Utility". Rename the Scene Utility to "Held Object Location"  
Make sure the new component is child of the Camera (Drag the component on top of the Camera.)

7. Click Add Component and select "Physics Handle"



9. Make sure "Held Object Location" is selected then move the Physics Handle in front of the camera so the player can see the thing being lifted.

10. Drag two copies of the Physics Handle into the Event Graph



11. Drag and select "Grab Component at Location" and "Release Component".

12. Drag a "Branch" from the Line Trace

13. Drag a "Break Hit Result"

14. Drag a "Is Simulating Physics"

The screenshot displays the Unreal Engine Blueprint editor interface. The main window shows an Event Graph for the 'FirstPersonCharacter' class. The graph contains several nodes connected by lines:

- A **LineTraceByChannel** node is connected to a **Branch** node.
- The **Branch** node is connected to a **Break Hit Result** node.
- The **Break Hit Result** node is connected to an **Is Simulating Physics** node.
- The **Is Simulating Physics** node is connected to a **Grab Component at Location** node.
- The **Grab Component at Location** node is connected to a **Release Component** node.
- A **Physics Handle** node is also present in the graph.

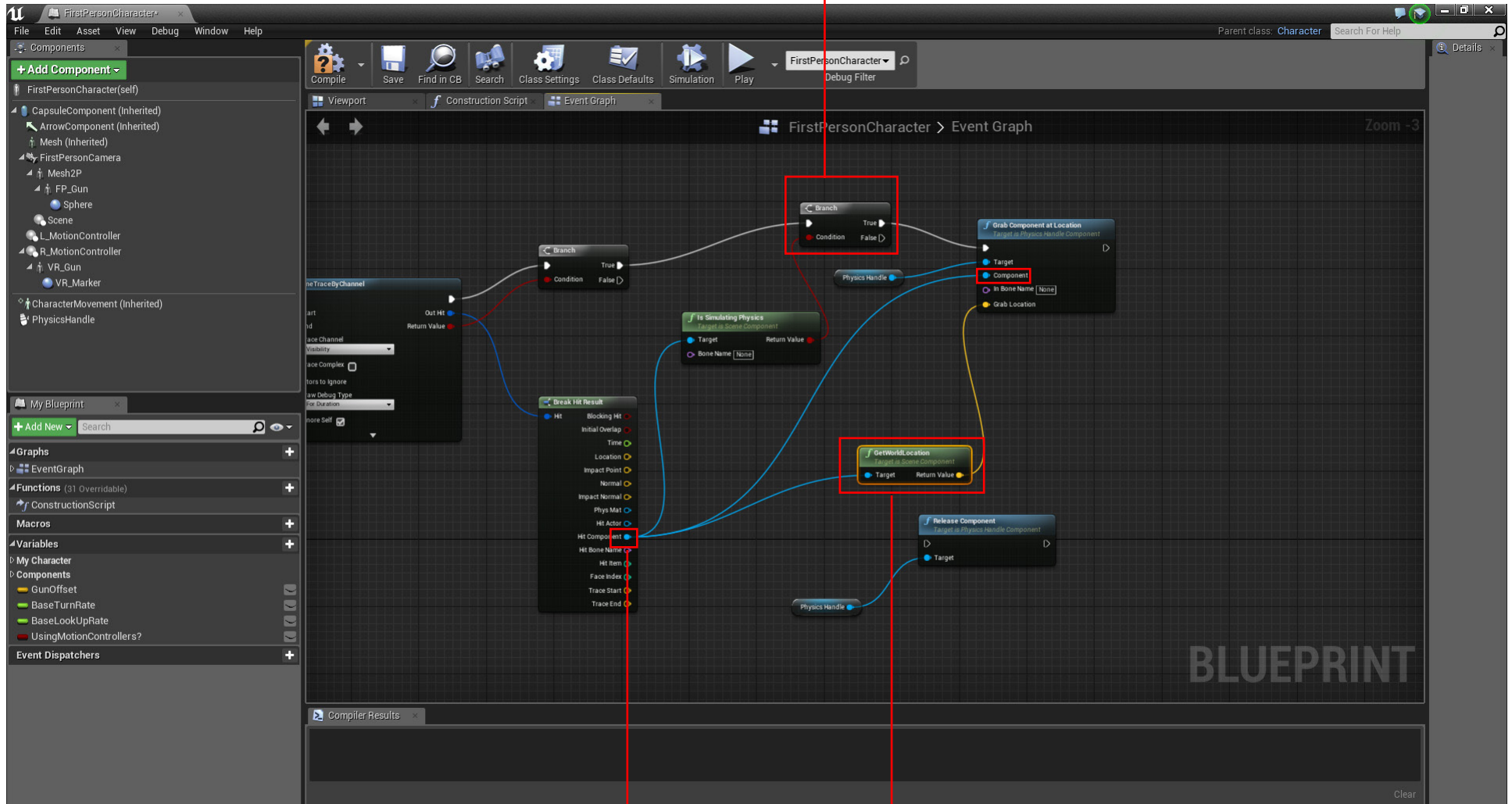
Red boxes highlight the **Branch**, **Break Hit Result**, and **Is Simulating Physics** nodes. Red lines connect these boxes to the numbered instructions above the screenshot:

- Instruction 12 points to the **Branch** node.
- Instruction 13 points to the **Break Hit Result** node.
- Instruction 14 points to the **Is Simulating Physics** node.

The left sidebar shows the 'Components' panel with a tree view of the character's components, including 'CapableComponent', 'ArrowComponent', 'Mesh', 'FirstPersonCamera', 'Mesh2P', 'FP\_Gun', 'Sphere', 'Scene', 'L\_MotionController', 'R\_MotionController', 'VR\_Marker', 'CharacterMovement', and 'PhysicsHandle'. The bottom of the interface shows the 'Compiler Results' panel.



15 Drag another Branch and connect as shown.



16. Link to "Component".

17. Drag and select "Get World Location" and link to Component

18. Right click in the panel and type "Keyboard Events" and select "F"

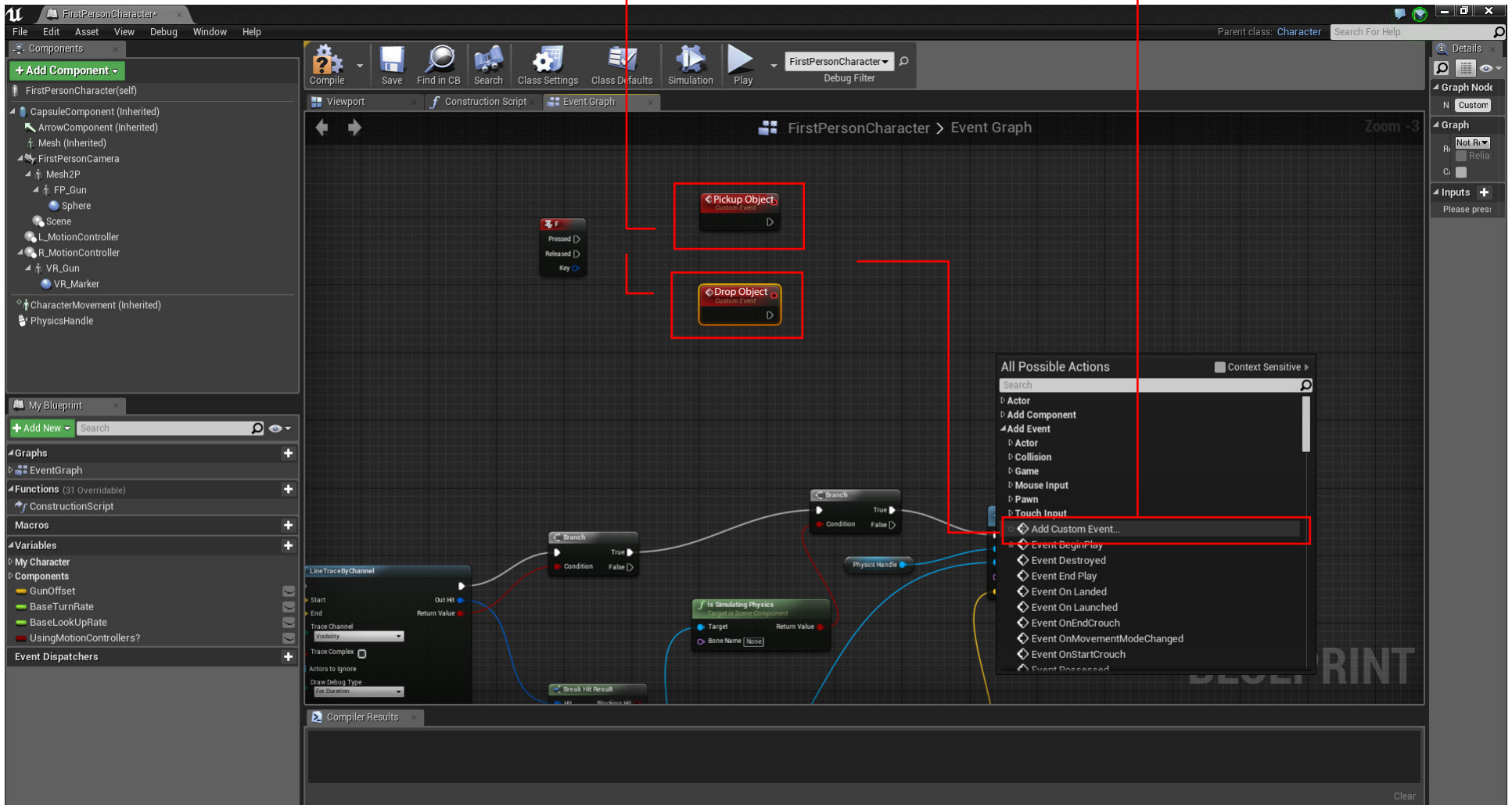
The screenshot displays the Unreal Engine 4 interface for editing a Blueprint. The main window shows the Event Graph for the 'FirstPersonCharacter' class. A red box highlights the 'F' key event in the 'All Possible Actions' list. A tooltip points to the 'F' key with the text 'Events for when the F key is pressed or released.'

The interface includes the following elements:

- Components Panel:** Lists components for 'FirstPersonCharacter', including CapsuleComponent, ArrowComponent, Mesh, FirstPersonCamera, Mesh2P, FP\_Gun, Sphere, Scene, L\_MotionController, R\_MotionController, VR\_Gun, VR\_Marker, CharacterMovement, and PhysicsHandle.
- My Blueprint Panel:** Shows 'Add New' and 'Search' options, along with sections for Graphs, Functions (31 Overridable), Macros, and Variables.
- Event Graph:** The main workspace showing a 'Branch' node with 'True' and 'False' outputs, a 'LineTraceByChannel' node, and a 'Break Hit Result' node. A red box highlights the 'F' key event in the 'All Possible Actions' list.
- Tooltip:** A white box with black text that reads 'Events for when the F key is pressed or released.'
- Blueprint Panel:** Shows 'ab Component at Location' and 'Target as Scene Component' nodes.

18. Right click and add two "Custom Events"

19. Rename them- Pckup Object and Drop Object





20. Link the two new custom events as shown.

The screenshot displays the Unreal Engine 4 interface for editing an Event Graph. The main window shows the 'Event Graph' for the 'FirstPersonCharacter' class. The graph is composed of several nodes and connections:

- PickupObject Custom Event:** A red-bordered node at the top left, connected to the 'LineTraceByChannel' node.
- LineTraceByChannel:** A central node that receives input from 'PickupObject' and 'DropObject'. It has a 'Return Value' output.
- DropObject Custom Event:** A red-bordered node at the bottom center, connected to the 'LineTraceByChannel' node.
- Release Component:** A node connected to the 'Return Value' output of 'LineTraceByChannel'.
- Branch:** A node that branches the flow based on a condition.
- Is Simulating Physics:** A node that checks if physics are simulated for a target.
- Break Hit Result:** A node that handles hit results, including blocking hit, initial overlap, time, location, impact point, normal, impact normal, phys mat, hit actor, hit component, hit bone name, hit item, face index, trace start, and trace end.

The 'PickupObject' and 'DropObject' nodes are highlighted with red boxes, indicating they are the focus of the task. The 'LineTraceByChannel' node is also highlighted with a yellow box. The 'Release Component' node is highlighted with a blue box. The 'Branch' node is highlighted with a red box. The 'Is Simulating Physics' node is highlighted with a green box. The 'Break Hit Result' node is highlighted with a blue box.

21. Locate the "F" Keyboard Event.

20. Make a new Variable and name it "Is Holding Object". Make sure it is a red "Boolean"

The screenshot displays the Unreal Engine 4 interface for editing a blueprint. The main window shows the Event Graph for the 'FirstPersonCharacter' blueprint. A red box highlights the 'Key Pressed' event for the 'F' key. Another red box highlights the 'Is Holding Object' variable node in the graph. A third red box highlights the 'Is Holding Object' variable in the Details panel, where its type is set to 'Boolean'. The 'Details' panel also shows the variable's name as 'Is Holding Object' and its type as 'Boolean'. The 'Event Graph' contains a 'Key Pressed' event for the 'F' key, which is connected to a 'Branch' node. The 'Branch' node has a 'Condition' of 'Is Holding Object'. The 'True' path of the branch leads to a 'Drop Object' action, and the 'False' path leads to a 'Pickup Object' action. The 'Pickup Object' action is also connected to a 'Grab' action. The 'Details' panel on the right shows the 'Variable' section with 'Variable Name' set to 'Is Holding Object' and 'Variable Type' set to 'Boolean'. The 'Default Value' section is also visible.

22 . Drag two "Is Holding Object" variables into the Event Graph and "Set" and link as shown.

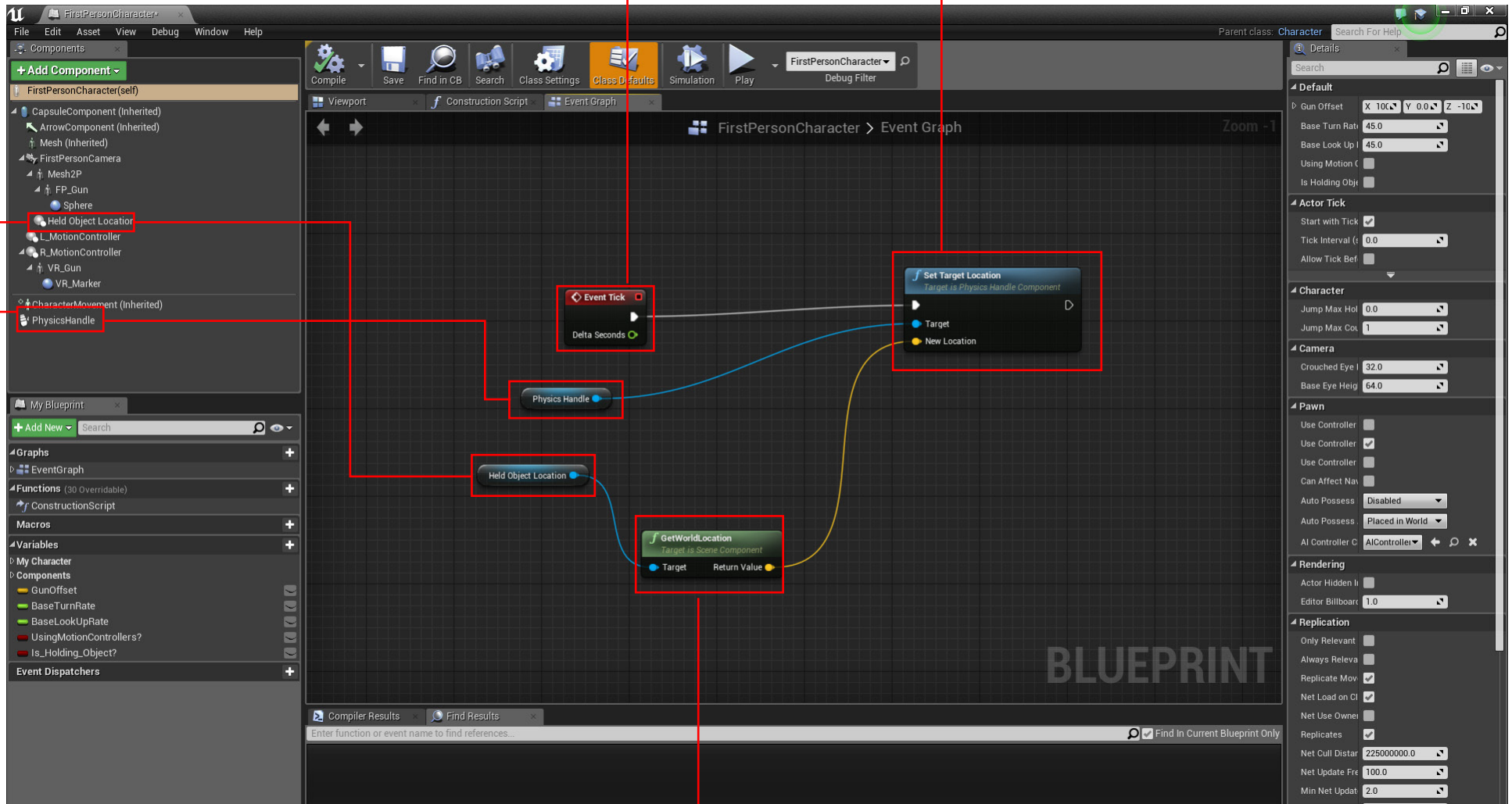
23. Check box

The screenshot displays the Unreal Engine 4 interface for editing a blueprint. The main window shows the Event Graph for the 'FirstPersonCharacter' blueprint. The graph contains several nodes: a 'Branch' node, a 'Grab Component at Location' node, a 'Drop Object' node, and a 'Release Component' node. Each of these three nodes is connected to a 'SET' node for the 'Is Holding Object' variable. The 'Is Holding Object' variable is highlighted in the left sidebar under 'Variables' and its details are shown on the right, with the 'Is Holding Object' checkbox checked. The 'Drop Object' node is also highlighted with a red box. The 'SET' nodes are also highlighted with red boxes. The 'Is Holding Object' variable is highlighted in the left sidebar and its details are shown on the right, with the 'Is Holding Object' checkbox checked.

26. Pull out your "Physics Handle" & "Held Object Location" from the Viewport

24. Add a new Event Tick

25. Drag a "Set Target Location".



27. Drag out "Get World Location" and connect as shown.

# COMPILE AND SAVE!!!!!!!!!!!!!!!



# How to Make a Prop Liftable

Before a prop can be lifted it must have several settings

- a. It must have a Collision setting
- b. It must be Movable
- c. It must Simulate Physics

The image shows a screenshot of the Unreal Engine 4 interface. On the left, the 'Collision' menu is open, listing various collision types like 'Add Sphere Simplified Collision', 'Add Capsule Simplified Collision', etc. A red box highlights this menu. In the center, a 3D view shows a chair prop in a room. On the right, the 'Details' panel for the 'SM\_Chair' component is visible. A red box highlights the 'Movable' checkbox under the 'Mobility' section, which is currently checked. Another red box highlights the 'Simulate Physics' checkbox under the 'Physics' section, which is also checked. The 'World Outliner' on the right shows the 'SM\_Chair' component selected. The 'Content Browser' at the bottom shows a grid of various props, with 'SM\_Chair' selected.