

# Puzzle Creator

Doc Part 1.

## Where to begin:

### Step 1: Try the demo.

Open scene **Demo**. (Project tab: PuzzleCreator → Demo → Demo)

Default inputs are:

- Arrows to move and Mouse to look around.
- P or Escape for Pause

### Step 2:

**First follow this tutorial:**

1-Tuto 01: Create a puzzle ([more info](#))

### Step 3:

**If you want to integrate the asset in an existing project read:**

2-Tuto 02: Integrate Puzzle Creator in an existing project ([more info](#))

**If you want start a project from scratch:**

Duplicate the scene **Starter** (Project tab: PuzzleCreator → Assets → Scenes → Starter → Starter)

Open the scene **Starter** to start your project

(Project tab: PuzzleCreator → Assets → Scenes → Starter → Starter)

### Step 4:

**To go further read:**

- Have a look to the table of content to access all the features included in the asset.
- Read **Doc Part 2** to find all the details about puzzle creation.
- Read **Doc Part 3** to find all the features to connect the puzzle system to your project.

If you have a problem or an error message in the console Tab:

- Read section **Troubleshooting** in **Doc Part 3**.

If you don't find information you are looking for in the documentation contact us at:

[targetsoundfx@gmail.com](mailto:targetsoundfx@gmail.com)

### Note:

We really appreciate if you could post a review on the assets store.  
It helps us to develop and add new updates to the asset.

Best regards,  
Pierre from TargetStudio.

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### Doc Part 1: Tutorials

**Tuto 01: Create a puzzle**

[link](#)

**Tuto 02: Integrate Puzzle Creator in an existing project**

Integration troubleshooting

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**Tuto 03 AR Example (Vuforia integration)**

AR Summary:

[link](#)

[link](#)

**Learn more: Study case: The Demo Scene**

[link](#)

### Doc Part 2: Puzzle creation and Detection Modes

**Automatic features quick overview.**

Prefabs: Ready To use

Sprites for puzzles: Ready To use

**Puzzles (Step by step to create and customize each type of puzzle)**

Puzzle: Sliding (Puzzle Creation)

Puzzle: Sliding (3D Models Customization)

Puzzle: Digicode (Puzzle Creation)

Puzzle: Digicode (3D Models Customization)

Puzzle: Lever (Puzzle Creation)

Puzzle: Lever (3D Models Customization)

Puzzle: Cylinder (Puzzle Creation)

Puzzle: Cylinder (3D Models Customization)

Puzzle: Pipe (Puzzle Creation)

Puzzle: Pipe (3D Models Customization)

Puzzle: Gear (Puzzle Creation)

Puzzle: Gear (3D Models Customization)

Puzzle: Gear

Puzzle: Gear (Troubleshooting)

Puzzle: Logic (Puzzle Creation)

Puzzle: Logic (3D Models Customization)

Puzzle: Logic (Troubleshooting)

**Common to all the puzzles:**

Puzzle: Conditions to access a puzzle.

Puzzle: Actions when puzzle is solved

Puzzle: How to setup the puzzle camera.

Grp\_PuzzleState (Exit,Reset and Hint buttons)

**Puzzle Detection Modes (Overview and Setup)**

Overview

Which Detection Mode for each device type:

Detection Restrictions:

Focus Mode (overview):

How to setup a puzzle for focus Mode

How to change the distance to detect a puzzle in Focus Mode (Raycast):  
How to Modify the mouse sprites (Focus Mode)

VR Raycast Mode (overview):

How to setup a puzzle for VR Raycast Mode

How to use the VR Hand

Put object [VR\\_Hand](#) inside the virtual hand

Feedbacks: [VR Raycast Mode](#)

How to Add a custom feedback on [VR Raycast Mode](#) (tuto)

VR Grab Mode (overview)

How to setup a puzzle for [VR Grab Mode](#)

How to use the object [VR\\_Hand](#)

Put object [VR\\_Hand](#) inside the virtual hand

Feedbacks: [VR Grab Mode](#)

How to Add a custom feedback on [VR Grab Mode](#) (Tuto).

Reticule Mode (overview)

How to setup a puzzle for Reticule Mode

Feedbacks: [Reticule Mode](#)

How to Add a custom feedback on [Reticule Mode](#) (tuto)

### **Clue/Hint system (Mobile Only)**

Add Clue/Hint Module to a puzzle

Create a Clue/Hint

Use multiple Clues/Hints

Lock Clue/Hint

Play Ads to unlock a Clue (need scripting)

## **Doc Part 3: Integrate puzzle in your project**

### **Part 3: Read First**

**Window tab: Puzzle Creator (w\_PuzzlesCreator)**

#### **GlobalPuzzleManager**

Overview:

Manage puzzle inputs:

Call methods when puzzle start or stop:

Other Options:

Scripting: Useful methods or variables

#### **ScenePuzzleManager**

Overview:

Methods call when scene starts:

Scripting: Useful methods or variables

### **Save system overview**

#### **ObjIsActivated**

Overview:

How to setup an object as [ObjIsActivated](#) (Tuto).

Save Extension (script needed):

## **Debugger**

## **Troubleshooting**

## **Scripting**

How to create a boolean method

Inputs: Switch between inputs types at runtime:

Inputs: Access inputs at runtimes

Useful Methods or variables for AR:

How to add a method (overview):

# **Doc Part 4: Graphics**

## **Graphics:**

Combine Mesh

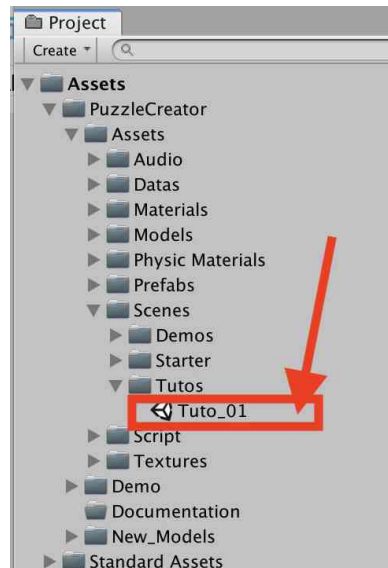
Sprites and textures

Export to mobile (example with the demo scene)

## Tuto 01: Create a puzzle

-In Project tab: Open **Tuto\_01**

(PuzzleCreator → Assets → Scenes → Tutos → Tuto\_01)



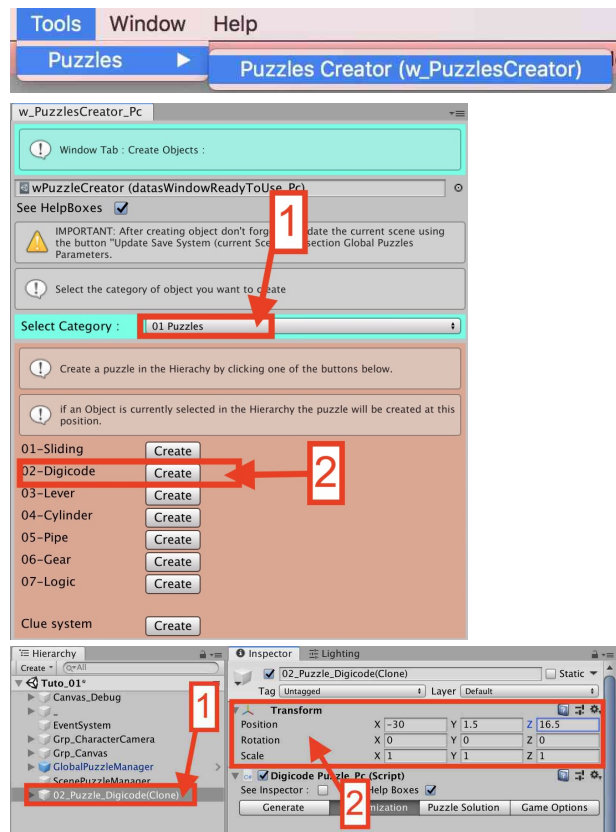
### Create a Puzzle

-Open **w\_PuzzlesCreator\_Pc**

(Tools → Puzzles → Puzzles creator (w\_PuzzlesCreator))

-Select category: **01 Puzzles** (spot 1)

-Press button **Create** next to 02 Digicode (spot 2)



**Info:** A new puzzle is created and auto-selected in the Hierarchy (spot 1).

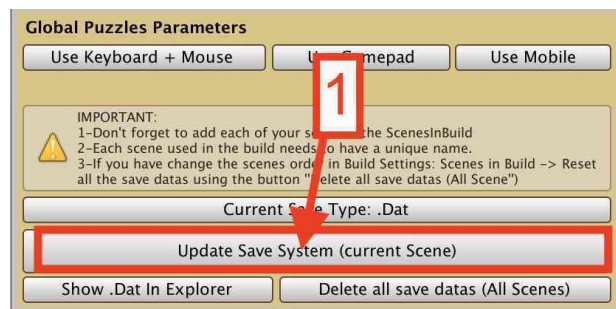
In the Inspector:

Change the puzzle position to (spot 2):

Position: X= -30 Y=1.5 Z=16.5

-In **w\_PuzzlesCreator\_Pc** window press button **Update Save System (current scene)** to add the new puzzle to the save system.

**Important:** Each time you create or delete a puzzle don't forget to press button **Update Save System (current scene)** to update the save system.



-Press button **Use Keyboard + Mouse**.

**Info:** Puzzle inputs are now setup for Desktop buttons

-Press **Play**.

-Go next to the puzzle.

-**Left click** on the puzzle when the puzzle icon appears on screen.

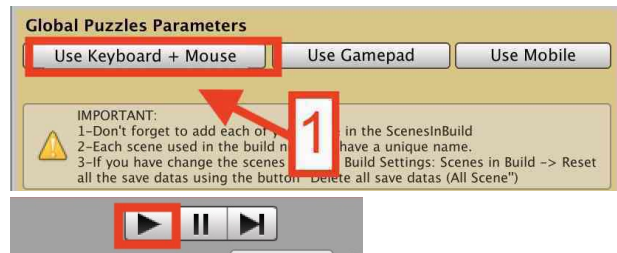
**Info:** Focus camera is activated.

-Press Four times **0** (0000) on the puzzle button.

**Info:** The puzzle is solved.  
Focus camera is deactivated.

-Press **Escape** to access the mouse cursor.

-Stop **Play** Mode.



### Add a condition to start the puzzle.

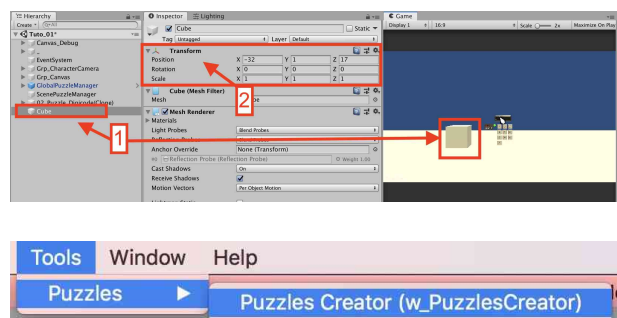
**Info:** It is possible to add your custom conditions to access a puzzle.

**Example:** In the following example:  
There is a cube and a puzzle in the scene.  
The player can access the puzzle if the cube is visible in the scene.

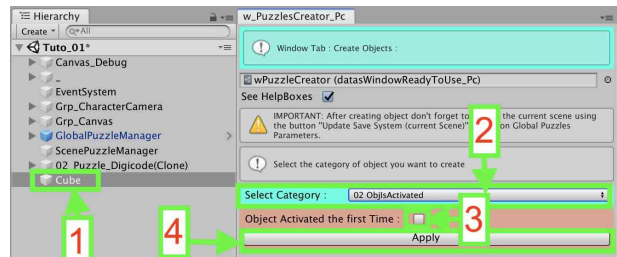
-In the Hierarchy, create a **cube** (spot 1)  
(Hierarchy: Right click → 3D Object → cube)

In the Inspector:  
Change the puzzle position to (spot 2):  
Position: X= -32 Y=1 Z=17

-Open **w\_PuzzlesCreator\_Pc**  
(Tools → Puzzles → Puzzles creator)



- In the Hierarchy select **Cube** (spot 1)
- Select category: **02 ObjIsActivated** (spot 2)
- Uncheck button **Object Activated the first time**. (spot 3)
- Press **Apply** (spot 4)



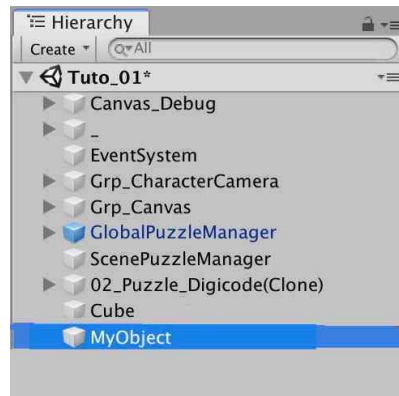
**Info:** New scripts are added to the cube

- In **w\_PuzzlesCreator\_Pc** window press button **Update Save System (current scene)** to add the new puzzle to the save system.



**Important:** Each time you create or delete an object setup as **ObjIsActivated** don't forget to press button **Update Save System (current scene)** to update the save system.

- In the Hierarchy, create an **empty Object**  
(Hierarchy: Right click → Create Empty)
- Rename it **MyObject** (for example).



### Info:

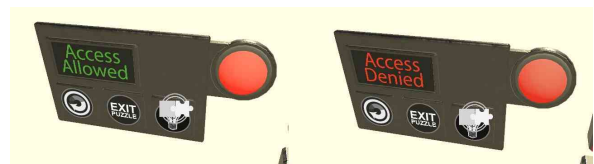
To avoid to test each frame that access to the puzzle is allowed or denied:

A piece of code is needed.

In the example used in this tutorial this part of code is already included.

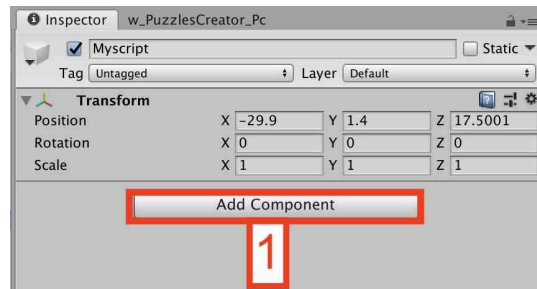
To learn how to create your own part of code to check if the access to the puzzle is allowed or denied:

Read **Doc Part 3** section **Scripting** sub section **Check if the access to the puzzle is allowed or denied**



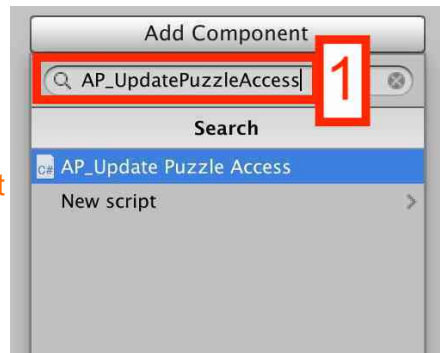
In the Inspector

-Press **Add Component** (spot 1).

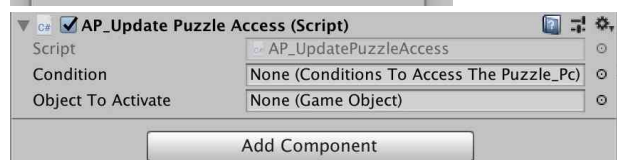


**Info:** A new menu appears.

-Write **AP\_UpdatePuzzleAccess** in the search field (spot 1).



-Press key **Enter** to add the component to **MyObject**



**Info:** The script is now attached to **MyObject**

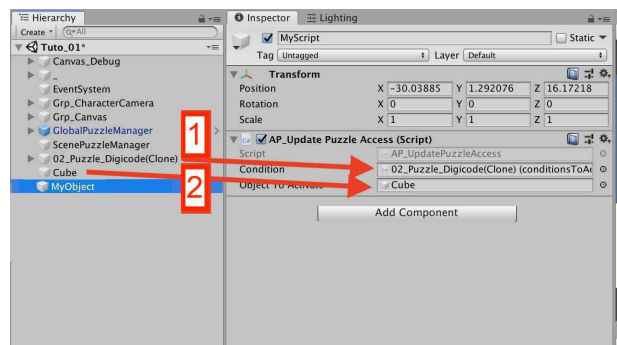
This script allows when the player press the **Y** key during the game:

1-Make the **Cube** object visible in the scene.

2-Check if access to the puzzle is allowed or denied.

-Drag and drop **02\_Puzzle\_Digicode(Clone)** inside **Condition** Slot (spot 1).

-Drag and drop **Cube** inside **ObjectToActivate** slot (spot 2).



-In the Hierarchy select **02\_Puzzle\_Digicode(Clone)** (spot 1).

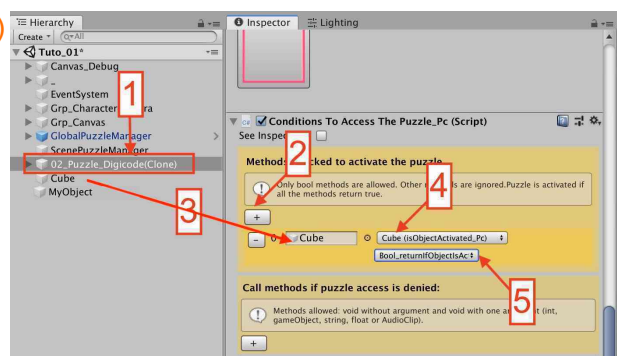
-In the Inspector go to section **Method Checked to activate the puzzle.**

-Press the button **+** (spot 2)

-Drag and drop **Cube** in the empty slot (spot 3).

-Select script **Cube (isObjectActivated)** (spot 4).

-Select **Bool\_ReturnIfObjectIsActivated** (spot 5)





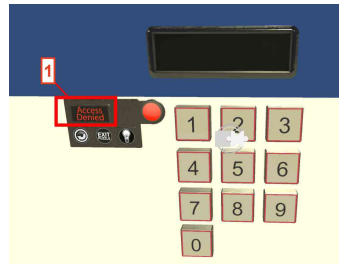
-Press **Play**.



**Info:** The cube is deactivated in the scene view.

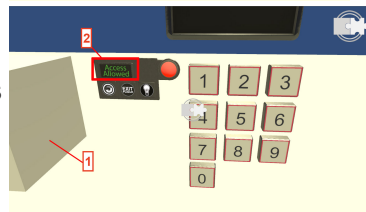
-Go next to the puzzle.

**Info:** Puzzle access is denied because the cube is disabled in the scene (spot 1).



-Press **Y**  
(To enable the **Cube** in the Hierarchy (spot 1) and check if all the conditions are met to access the puzzle).

**Info:**  
Puzzle access is allowed because the cube is enabled in the scene (spot 2).



-Left click on the puzzle when the puzzle icon appears on screen.

**Info:** Focus camera is activated.

-Press Four times **0** (0000) on the puzzle button.

**Info:** The puzzle is solved.  
Focus camera is deactivated.

-Press **Escape** to access the mouse cursor.

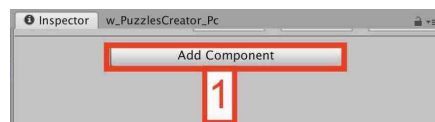
-Press **Play** button to stop Play Mode.

### Add a feedback when puzzle access is denied

-In the Hierarchy select **MyObject**.

In the Inspector

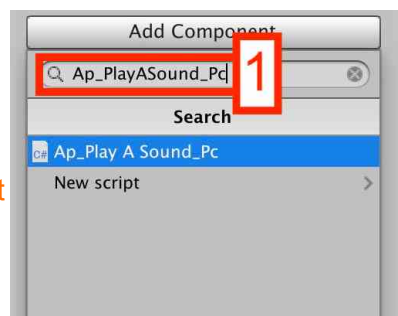
-Press **Add Component** (spot 1).



**Info:** A new menu appears.

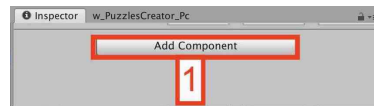
-Write **Ap\_PlayASound\_Pc** in the search field (spot 1).

-Press key **Enter** to add the component to **MyObject**



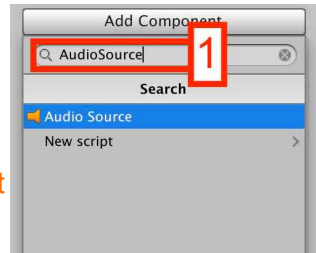
In the Inspector

-Press **Add Component** (spot 1).



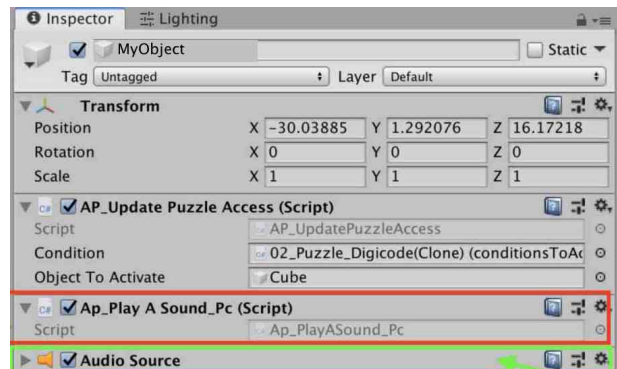
**Info:** A new menu appears.

-Write **AudioSource** in the search field (spot 1).



-Press key **Enter** to add the component to **MyObject**

**Info:** Now the component **Ap\_PlayASound\_Pc** and the component **AudioSource** are attached to **MyObject**.



-In the Hierarchy select **02\_Puzzle\_Digicode(Clone)** (spot 1)

-Press **+** in section **Call Methods if puzzle access is denied** (spot 2).

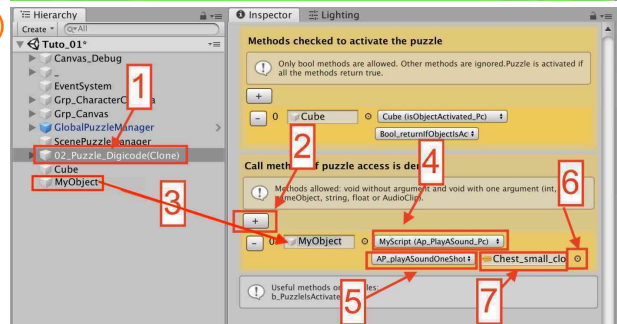
-Drag and drop **MyObject** in the empty slot (spot 3).

-Select script is **Ap\_PlayASound\_Pc** (spot 4).

-Select **AP\_playASoundOneShot()** (spot 5).

-Press the **small cercle** (spot 6).

-Choose AudioClip **Chest\_small\_close\_01** (spot 7).



-Press **Play**.

**Info:** The cube is deactivated in the scene view.



-Go next to the puzzle.

**Info:** Puzzle access is denied because the cube is disabled in the scene.

-**Left click** on the puzzle when the puzzle icon appears on screen.

**Info:** A sound is played because puzzle access is denied.

-Press **Escape** to access the mouse cursor.

-Press **Play** button to Stop Play Mode.

## Add Actions when the puzzle is solved:

Each puzzle has a script named *ActionsWhenPuzzleIsSolved\_Pc* attached to it.

This script allows to setup actions when the puzzle is solved.  
It is possible to add your scripts and actions like open door, show something...

In this example after solving the puzzle:

Step 1: Stay 1 seconds in front of the puzzle.

Step 2: Save all the puzzles in the scene.

-In the Hierarchy select *02\_Puzzle\_Digicode(Clone)* (spot 1)

In the Inspector in section

*Actions after the puzzle is solved:*

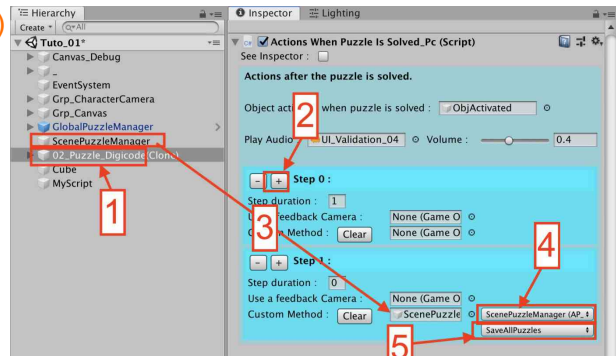
-Press button **+** next to *Step 0* to create a new step (spot 2).

**Info:** A new step is created

-Drag and drop *ScenePuzzleManager* in the Custom Method empty slot Step 1 (spot 3).

-Select script *AP\_ScenePuzzleManager\_Pc* (spot 4)

-Select the method *saveAllPuzzles()* (spot 5)



### Important:

To prevent a bug during the save Process:  
Do not use *step 0* to call *saveAllPuzzles()*.

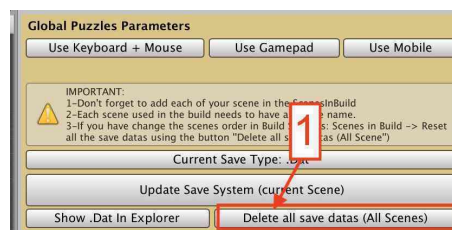
Keep the *step 0* as it is by default (1s duration).  
Use *step 1* to call *saveAllPuzzles()*

-Open *w\_PuzzlesCreator\_Pc* window tab.  
(Tools → Puzzles → Puzzles creator)



-Press **Delete all Save datas (all Scenes)**

-Press **Yes**



-Press **Play**.



-Go next to the puzzle.

-Press **Y** (To enabled the Cube)

-**Left click** on the puzzle when the puzzle icon appears on screen.

-Press Four time **0** (0000) on the puzzle button..

**Info:**

-The puzzle is solved

-The camera stay 1 second in front of the puzzle.

-All the puzzles and objects contained in the save System in this scene are saved.

-Focus camera is deactivated.

-Press **Escape** to access the mouse cursor.

-Press **Play** button to stop Play Mode.

-Press **Play** again to start Play Mode.

**Info:**

When the scene starts puzzles are initialized using the save system.

Now when the scene is launched:

-The puzzle starts with its solved state.

-Press **Escape** to access the mouse cursor.

-Press **Play** button to stop Play Mode.

**Info:**

It is possible to delete the save datas by pressing the button **Delete all Save datas (all Scenes)**. This button delete all the Puzzles datas in the project.

To delete the puzzle datas only for the current scene:

-Go to **File → Build Settings**

-Press **add Open Scene**

Now when the button **Update Save System (current scene)** is pressed the puzzle datas are deleted for this scene.

**Important:** If you change the scene order in the **SceneInBuild** window you need to press **Delete all save datas (All Scenes)** to update the save system.

### Info:

In this example the player interacts with the puzzle using the Focus Mode:

It is possible to choose between 4 types of puzzle detection.

**Focus Mode:** The camera focuses on the puzzle when the player click on it. Design for Mobile and desktop Mouse + Keyboard / Gamepad

**VR Raycast:** A ray is sent from an object in the scene. Design for VR.

**VR Grab:** Interacts when two objects collide (for example, the player's virtual hand and the puzzle). Design for VR.

**Reticule Mode:** A ray is sent from the center of the screen to interact with the puzzles. Design for AR and Desktop Mouse + Keyboard/gamepad

(More about how to use each detection type in the [Doc Part 2](#) section [Puzzles Detection Mode](#))



### End of this tutorial:

-In the next tutorial you will learn how to integrate the puzzle system inside an existing project.

## Tuto 02: How to integrate Puzzle Creator in an existing project.

-For the example we are going to integrate puzzle in an existing project using:

-The **Unity Standard character controller**.

-If you already have your character in your project go to **step 2**:

-If you have problems to integrate the asset in your project read the section Integration Troubleshooting ([more info here](#))

**WARNING:** Before importing Puzzle Creator in your project make a copy of your project.

### Step 1 Basic Setup:

For this example:

-We have created an empty Unity project

-We have downloaded the Unity Standard assets from the asset store.

**Info:** To download the standard asset:

-Press (PC) **ctrl+9** or (Mac) **command+9**

Search **standard assets**

-Press the button **Download** and or the button **Import**

-A new window appears.

-Press **none**.

-Check the boxes (spot 2):

Cameras

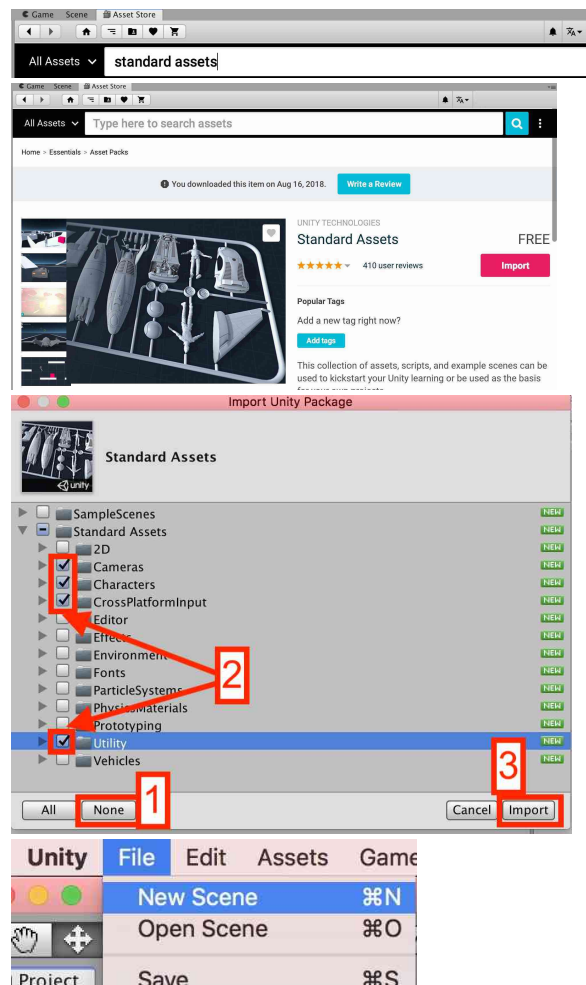
Characters

CrossPlatformInput

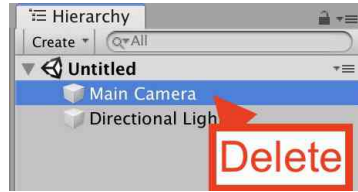
Utility

-Press button **Import** (spot 3).

-Create a **new scene**



-Delete the camera in the hierarchy

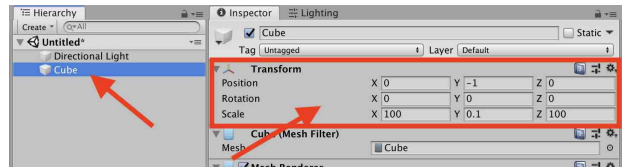


-Create a **cube**.

Change transform to:

position: x=0      y=-1      z= 0

scale: x=100      y=0.1      z=100



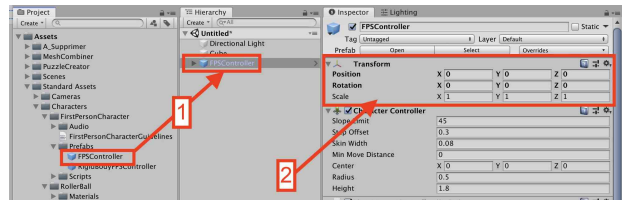
-Drag and drop the **FPSController** prefab in the scene view (spot 1).

(Project Tab: Standard Assets → Characters → FirstPersonCharacter → Prefabs → FPSController)

Set transform to (spot 2):

position: x=0      y=0      z= 0

rotation: x=0      y=0      z= 0



-Press Button **Play**.



**Info:** Using the arrows the character moves in the scene.

-Press Button **Play** to stop Play Mode

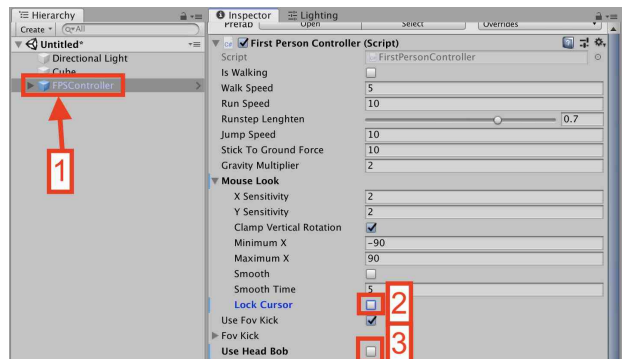
-In Hierarchy select **FPSController**.

-In Inspector uncheck **Lock cursor**

(Mouse look → Lock cursor).

**Info:**

-In this example we are going to use a puzzle setup for Focus Mode. In this mode the puzzle system must be able to control if the cursor is lock or not to the center of the screen. By default the Unity character force the cursor to be always locked in the center of the screen. There is an option in the player controller to deactivate this option.



-In the Inspector uncheck use **Head Bob**

## Step 2: Import Puzzle Creator

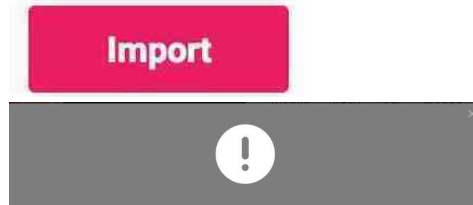
-Press **Ctrl+9** or **command+9** to open the Asset store tab.

-Search **Puzzle Creator**.

-Press **Import**.

*Info: a window appears.*

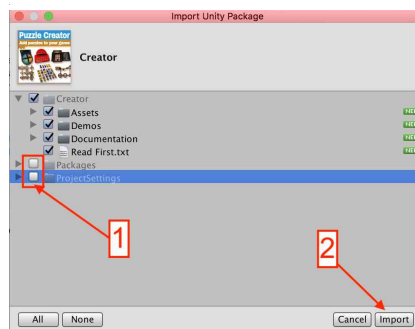
-Press **Import**.



Importing a complete project will overwrite your current project settings. If you're not sure what this means, you should switch to an empty project before importing this package

Cancel

Import



### Caution:

It is **VERY IMPORTANT** to uncheck the next 2 folders to prevent breaking your project settings.

-Uncheck folder **Package**

-Uncheck folder **ProjectSettings**

-Press **Import**

## Step 3: Setup Layers

-Go to **Edit → Project Settings**

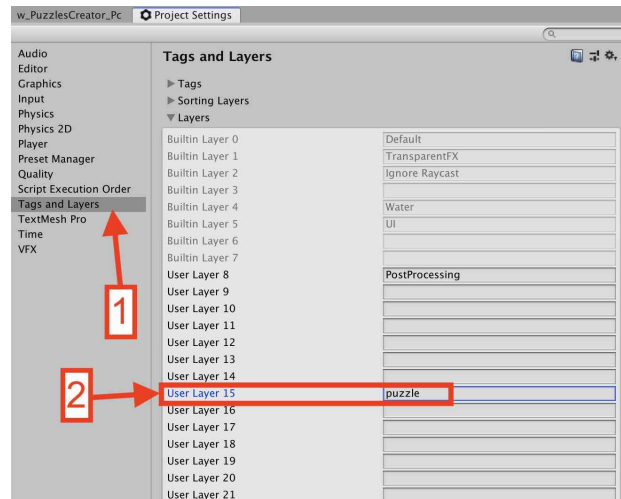


**Important:** By default Puzzle Creator use 4 layers:  
Layer 15,16,19,20



-In Project Setting tab select **Tags and Layers** (spot1)

If the layer **15** is empty write **puzzle** in the empty text field (spot 2)



**Info:** If Layer **15** is already used select an empty layer.

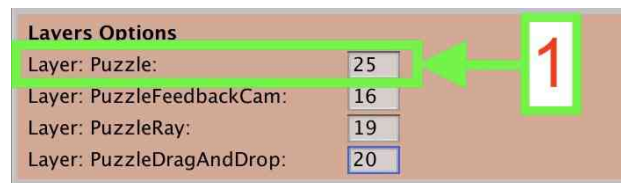
Choose a layer different to:  
16,19,20,31(internally use by Unity)

For example choose layer **25** and rename it **puzzle**.

-Go to **Tools** → **Puzzles** → **Puzzles Creator** (w\_PuzzleCreator)

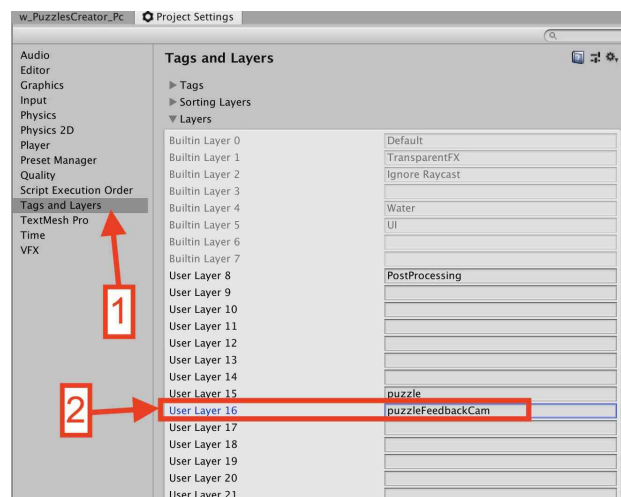


-In section **Layer Options** change the **Layer:** **Puzzle** corresponding to the layer chosen in the previous step.  
In our example write **25** (spot 1)



-In Project Setting tab select **Tags and Layers** (spot1)

If the layer **16** is empty write **puzzleFeedbackCam** in the empty text field (spot 2)



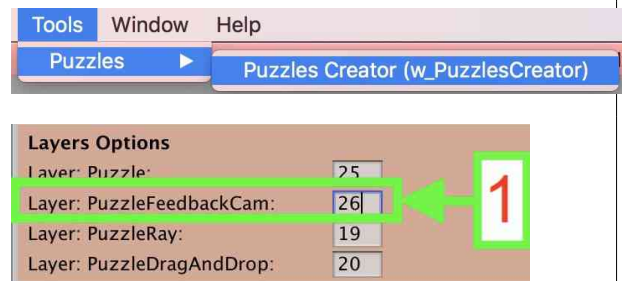
**Info:** If Layer 16 is already used select an empty layer.

Choose a layer different to:  
15,19,20,31(internally use by Unity)

For example choose layer 26 and rename it  
**puzzleFeedbackCam**.

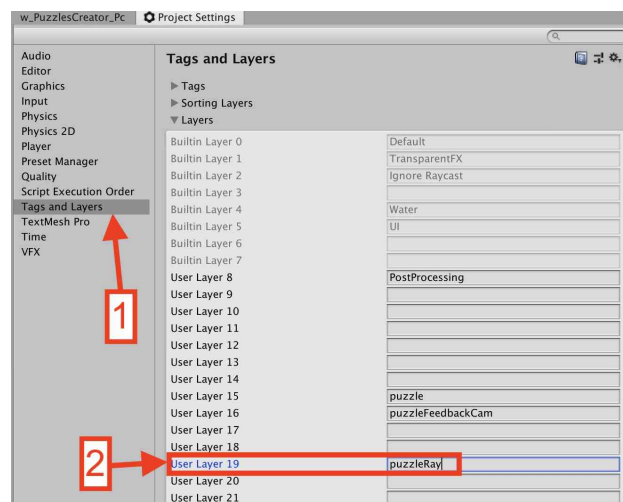
-Go to **Tools → Puzzles → Puzzles Creator**  
(w\_PuzzleCreator)

-In section **Layer Options** change the  
**Layer: puzzleFeedbackCam** corresponding to the  
layer chosen in the previous step.  
In our example write 26 (spot 1)



-In Project Setting tab select **Tags and Layers**  
(spot1)

If the layer 19 is empty write **puzzleRay** in the  
empty text field (spot 2)



**Info:** If Layer 19 is already used select an empty layer.

Choose a layer different to:  
15,16,20,31(internally use by Unity)

For example choose layer 27 and rename it  
**puzzleRay**.

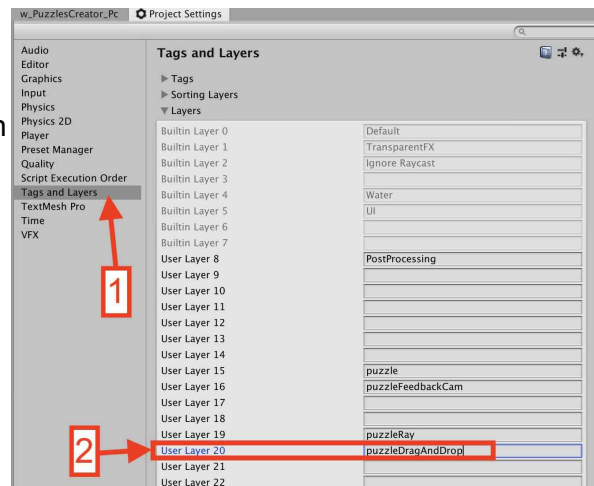
-Go to **Tools → Puzzles → Puzzles Creator**  
(w\_PuzzleCreator)

-In section **Layer Options** change the  
**Layer: puzzleRay** corresponding to the layer  
chosen in the previous step.  
In our example write 27 (spot 1)



-In Project Setting tab select **Tags and Layers** (spot1)

If the layer **20** is empty write **puzzleDragAndDrop** in the empty text field (spot 2)



**Info:** If Layer **20** is already used select an empty layer.

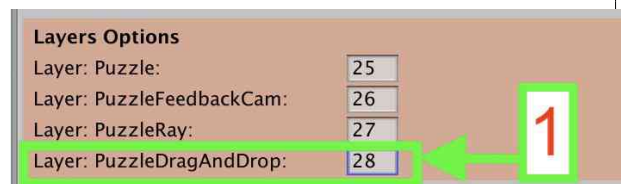
Choose a layer different to:  
15,16,19,31(internally use by Unity)

For example choose layer **28** and rename it **puzzleDragAndDrop**.

-Go to **Tools** → **Puzzles** → **Puzzles Creator** (w\_PuzzleCreator)



-In section **Layer Options** change the **Layer: puzzleDragAndDrop** corresponding to the layer chosen in the previous step.  
In our example write **28** (spot 1)



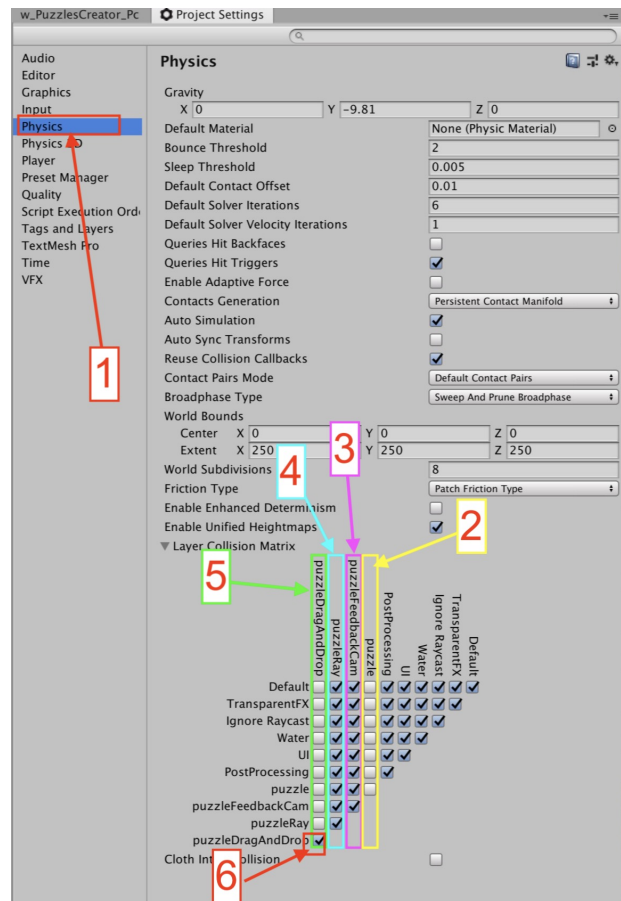
-In Project Setting tab select **Physics** (spot1)

-For layer **puzzle** (spot 2):  
Uncheck all the boxes.

-For layer **puzzleFeedbackCam** (spot 3):  
Check all the boxes.

-For layer **puzzleRay** (spot 4):  
Check all the boxes.

-For layer **puzzleDragAndDrop**(spot 5):  
Uncheck all the boxes except box for collision  
between **puzzleDragAndDrop** and  
**puzzleDragAndDrop** (spot 6).



#### Step 4: Setup the Starter Kit

**Info:** Whenever you want to use the puzzles in a new scene:

-You need to add the **StarterKit** to the new scene.

-You must follow **step 4: Setup the Starter Kit**.

**Warning:** Do not rename object contained in the **StarterKit**.

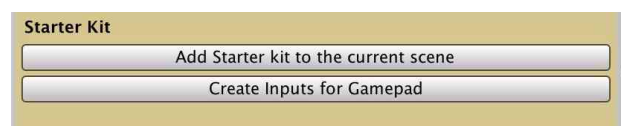
-Go to **Tools** → **Puzzles** → **Puzzles Creator**  
(w\_PuzzleCreator)



**Info:** A new window **w\_PuzzlesCreator\_Pc** appears.

-Press button **Create Inputs for Gamepad** to create the two inputs used by the gamepad.

-Press Button **Add Starter Kit to the current scene** to create the needed objects to use puzzle in the scene.

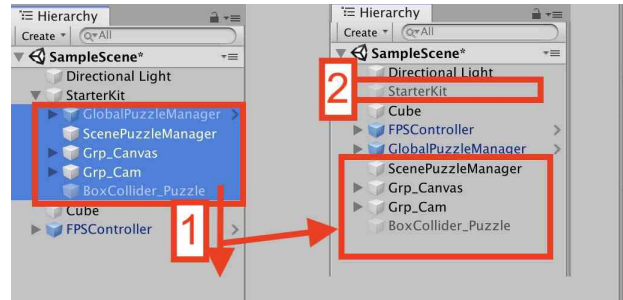


**Info:** A gameObject **StarterKit** is created in the Hierarchy.

-Select all the objects inside object **StarterKit**.

-Drag and drop those objects on the root of the Hierarchy (spot 1).

-Delete the Object **StarterKit** (spot 2)

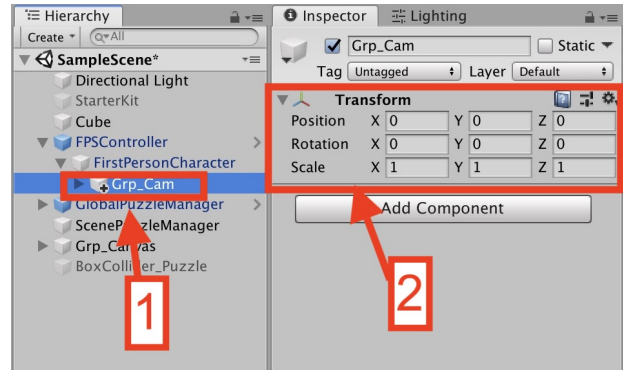


**Case 1:** You are using the **Unity FPS Controller**:

-Drag and drop **Grp\_Cam** inside

**FirstPersonCharacter** (spot 1)

(Hierarchy → FPSController → FirstPersonCharacter)



**Case 2:** You are using your own character:

-Drag and drop **Grp\_Cam** inside the camera used by your character.

-Select **Grp\_Cam**.

-In the inspector check if the transform (spot 2):

Position: x = 0 y=0 z=0

Rotation: x = 0 y=0 z=0

Scale: x = 1 y=1 z=1

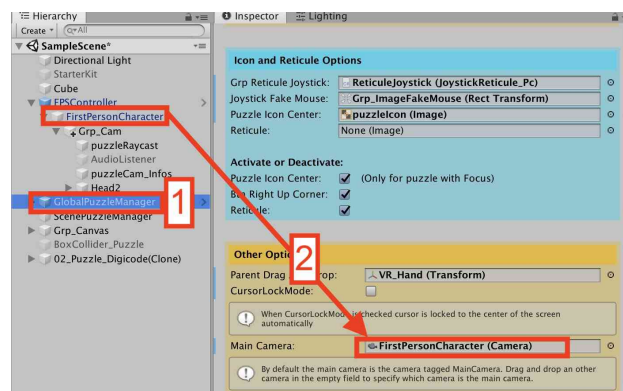
## Step 5: Check Camera Setup

**Info:** By default puzzle creator system consider the camera tagged "MainCamera" in hierarchy as the camera used by the player.

If your player camera is not tagged "**MainCamera**":

-In the Hierarchy select **GlobalPuzzleManager** (spot 1)

-In the Inspector drag and drop your camera inside slot **Main Camera** (spot 2)



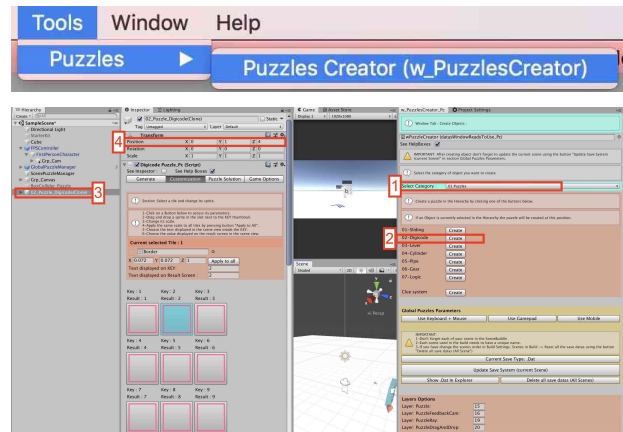
## Step 6: Test

-Go to Tools → Puzzles → Puzzles Creator (w\_PuzzleCreator)

-In w\_PuzzlesCreator\_Pc select category: 01 Puzzles (spot 1)

-Press Button Create next to 02-Digicode (spot 2).

**Info:** the puzzle is created and auto-selected in the Hierarchy (spot 3).



**Case 1:** You are using the Unity FPS Controller:

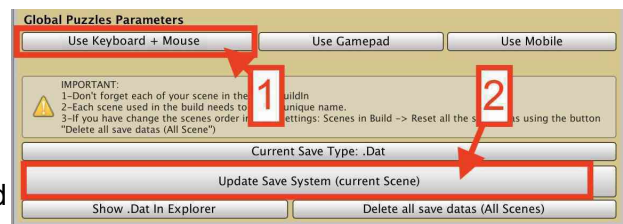
-Change the puzzle transform position to:  
position: x=0 y=1 z=4

**Case 2:** You are using your own character:  
Choose a position not too far from your character that fit your project.

-In w\_PuzzlesCreator\_Pc

-Press button Use Keyboard + Mouse (spot 1) to use the keyboard and the Mouse during the game.

-Press Update Save System (current Scene) to add the puzzle to the save system (spot 2).



-Press button Play to start play mode.



-Move next to the puzzle.

-Click on the puzzle when the puzzle icon appears on screen.

-Solved the puzzle by pressing four times 0 (0000) on the puzzle button.

**Info:** Puzzle is solved.

-Press Escape to access the mouse cursor.

-Press button Play to exit play mode.



## Integration (troubleshooting):

### I don't see the cursor when Focus Mode is activated:

Check if your character have a parameters that force the cursor to be lock on the center of the screen.

Currently you find this parameter on the character controller.

If you can't find the option in your project you can use the other detection modes that doesn't need to change the lock mode in your game. For example use the **Reticule Mode**.

(more info about detection mode in the [Doc Part 2](#))

### I want to manage myself cursor Lock Mode:

-It is not possible to manage manually the cursor lock mode when a puzzle is activated using Focus Mode. In that case the cursor lock state is forced to `Cursor.lockState = CursorLockMode.Confined;`

-By default, the cursor is locked to the center of the screen:

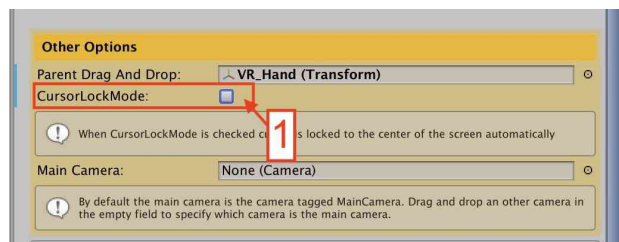
-When the game starts.

-When the player exit a puzzle setup in Focus Mode.

### It is possible to deactivate this option:

-In the Hierarchy select **GlobalPuzzleManager**.

-In the Inspector go to section **Other Options** and uncheck the option **CursorLockMode**.



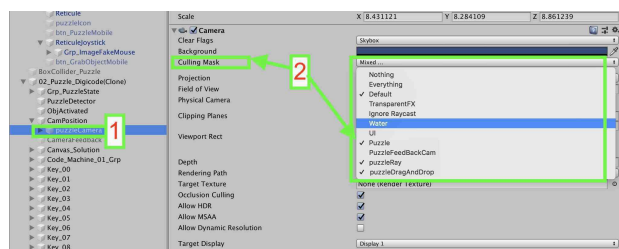
### Some Objects doesn't appears when focus mode is activated

-Select **puzzleCamera** inside the puzzle (spot 1)  
(Your puzzle → CamPosition → puzzleCamera)

-In the Inspector go to script **Camera**.

-Click on the **Culling Mask** dropdown menu (spot 2).

-Choose **Everything** to allows the camera to display



everything on screen.

Or

-Select only the layers you want to be displayed.

**I need to customize what happen when the player enter and exit a puzzle:**

It is possible to call your own methods when the player enter or exit a puzzle.

**Read sections** (Doc Part 3):

[GlobalPuzzleManager](#)

[Call methods when puzzle start or stop:](#)

[Other Options](#)



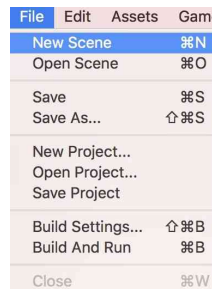
## Tuto 3: AR Integration (Vuforia Example)

For this Tutorial we consider you have already:

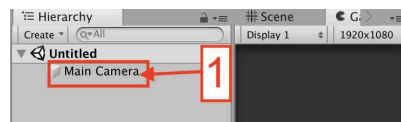
- Created a new Unity project
- Download and install Vuforia.
- Download and setup in your project Puzzle Creator

[\(More info on Tuto 2 Step 2 and Step 3\)](#)

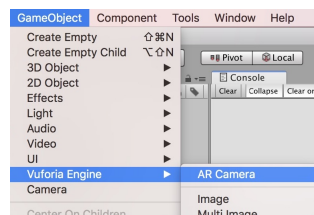
- Create a new scene. (Ctrl + N)



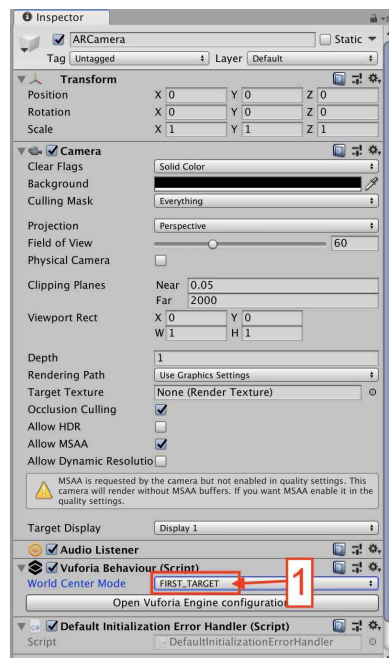
- In the Hierarchy delete the object **Main Camera** (spot 1).



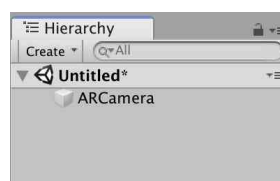
Go to **GameObject** → **Vuforia Engine**  
→ **AR Camera** to create the Vuforia Camera.



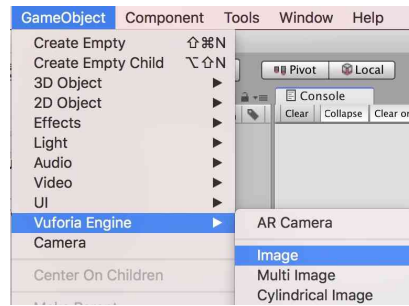
- In the Hierarchy select **ARCamera**.
- In the Inspector Select **FIRST\_TARGET** in the filed **World Center Mode** (spot 1).



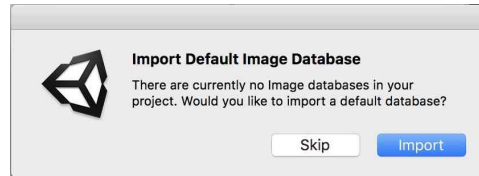
- In the Hierarchy deselect **ARCamera**.



Go to **GameObject** → **Vuforia Engine** → **Image** to create an Image Target.



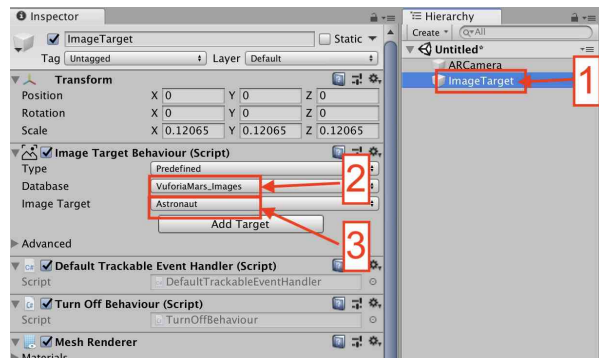
-If the message on the picture on the right appears on screen press **Import**.



-In the Hierarchy select **ImageTarget**.

In the Inspector Select:

- VuforiaMars\_Images** on the **Database** field.
- Astronaut** for the field **Image Target**.



-Create a **Cube** and put it as a child of **ImageTarget** (spot 1)

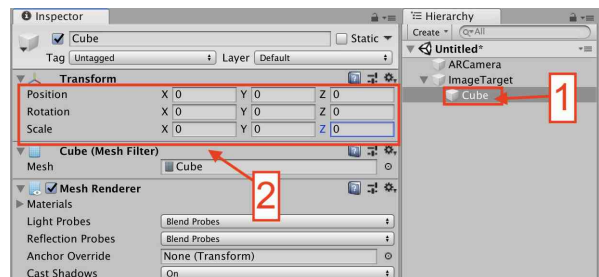
-Select **Cube** in the Hierarchy.

-In the Inspector Change its transform to (spot 2):

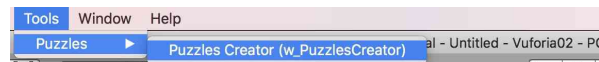
Position: X=0 Y=0 Z=0

Rotation: X=0 Y=0 Z=0

Scale: X=0 Y=0 Z=0



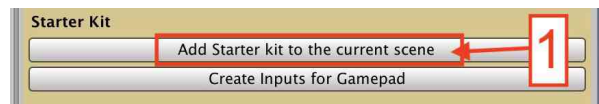
-Go to **Tools** → **Puzzles** → **Puzzle Creator** (w\_PuzzlesCreator)



-In the new window **w\_PuzzlesCreator** press the button **Use Mobile** on section **Global Puzzles Parameters** (spot 1).



-In window **w\_PuzzlesCreator** press the button **Add Starter Kit to the current project** on section **Starter Kit** (spot 1).



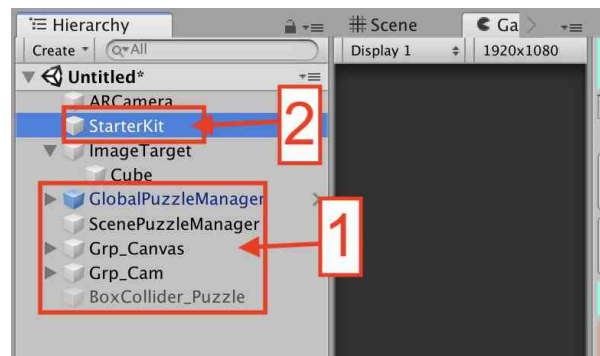
**Warning:** Do not rename object contained in the StarterKit.

**Info:** A gameObject **StarterKit** is created in the Hierarchy.

-Select all the objects inside object **StarterKit**.

-Drag and drop those objects on the root of the Hierarchy (spot 1).

-Delete the Object **StarterKit** (spot 2)

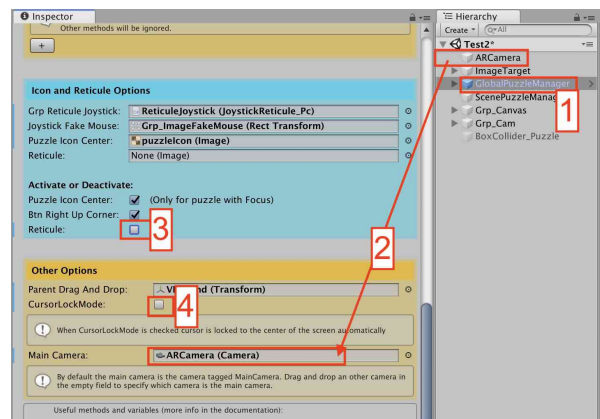


-In the Hierarchy select **GlobalGameManager** (spot 1)

-In the Inspector drag and drop **ARCamera** inside empty slot **Main Camera** (spot 2).

-Uncheck **Reticule** (spot 3).

-Uncheck **CursorLockState** (spot 4)



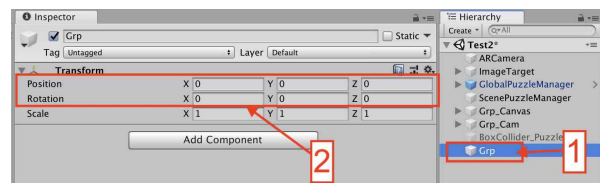
-In the Hierarchy create an **empty Object**.

-Rename it **Grp** (for example)(spot 1).

-Select **Grp** and change its transform to:

Position: X=0 Y=0 Z=0

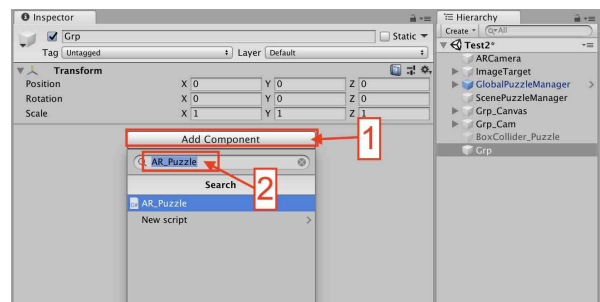
Rotation: X=0 Y=0 Z=0



-In the Inspector press button **Add Component** (spot 1)

-In search field write **AR\_Puzzle** (spot 2)

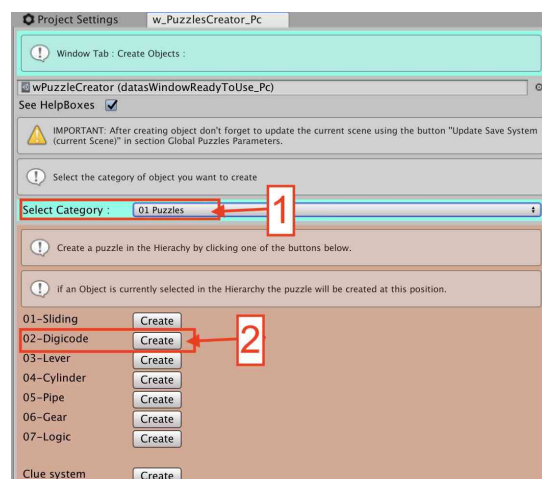
-Press keyboard key **Enter** to add the component.



-Go to **Tools → Puzzles → Puzzle Creator (w\_PuzzlesCreator)**

-In window **w\_PuzzlesCreator** select in **01 Puzzles** (spot 1)

-Press button **Create** next to **02-Digicode** (spot 2)



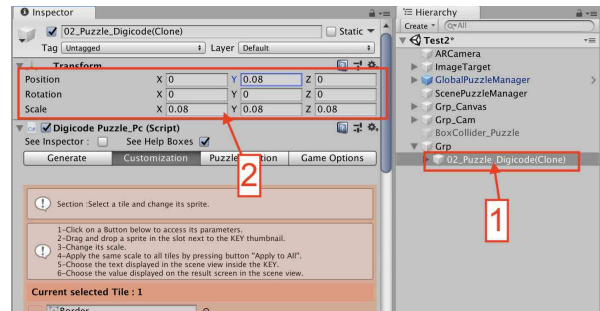
**Info:** Object *02\_Puzzle\_Digicode(Clone)* is created in the Hierarchy.

Move *02\_Puzzle\_Digicode(Clone)* inside Grp (spot 1)

-In the Inspector Change

*02\_Puzzle\_Digicode(Clone)* transform to (spot 2):

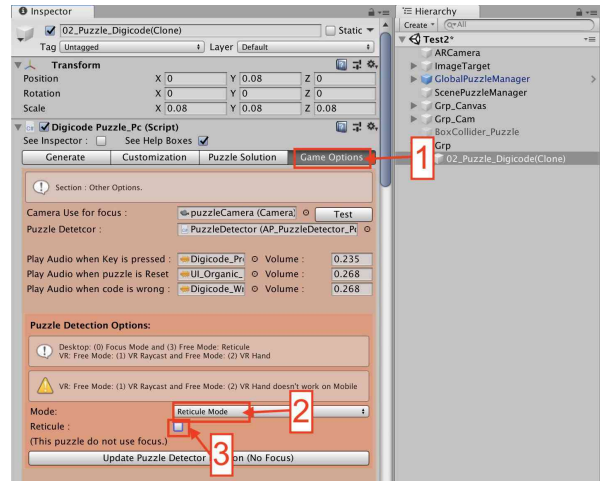
Position: X=0 Y=0.08 Z=0  
Rotation: X=0 Y=0 Z=0  
Scale: X=0.08 Y=0.08 Z=0.08



-In the Inspector click on button **Game Options** (spot 1)

-Select **Reticule Mode** in the dropdown menu (spot 2)

-Uncheck **Reticule** box (spot 3)



**info:**

By default the player can't interact with a puzzle.

*b\_PuzzlesActivated* (forces the activation of the puzzle).

*b\_puzzleStates* (allows the player to interact with the reset button of the puzzle).

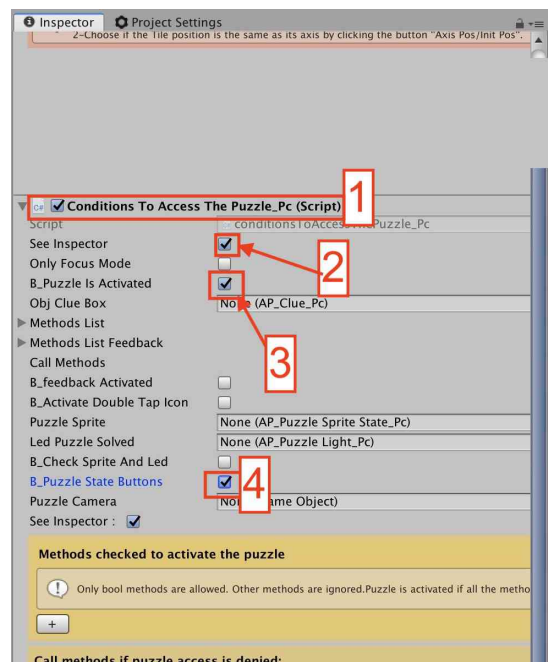
-Select your puzzle in the Hierarchy

-In the Inspector go to section **ConditionsToAccessThePuzzle** (spot 1)

-Check the box **see inspector** (spot 2)

-Check the box **B\_Puzzle Is Activated** (spot 3)

-Check the box **B\_Puzzle State Buttons** (spot 4)



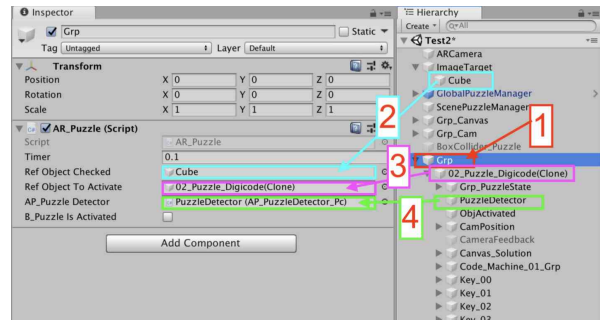
-In the Hierarchy select **Grp** (spot 1)

In the Inspector:

-Drag and drop **Cube** inside the empty slot **Ref Object Checked** (spot 2).

-Drag and drop **02\_Puzzle\_Digicode(Clone)** inside the empty slot **Ref Object To Activate** (spot 3).

-Drag and drop **PuzzleDetector** inside the empty slot **AP\_Puzzle Detector** (spot 4).  
(Hierarchy: 02\_Puzzle\_Digicode(Clone) → PuzzleDetector)



-In the Hierarchy select **GlobalGameManager**

-In the Inspector press button **Update Save System (current scene)** (spot 1).



Now you can test the scene.  
When the Image Marker is detected the puzzle is displayed on screen.

### Tips:

If you want to easily test the scene:  
Use a Mobile device as a remote.

<https://docs.unity3d.com/Manual/UnityRemote5.html>

## AR Summary:

**1-** You must select mobile Inputs in window w\_PuzzlesCreator by pressing the button Use Mobile (spot 1).



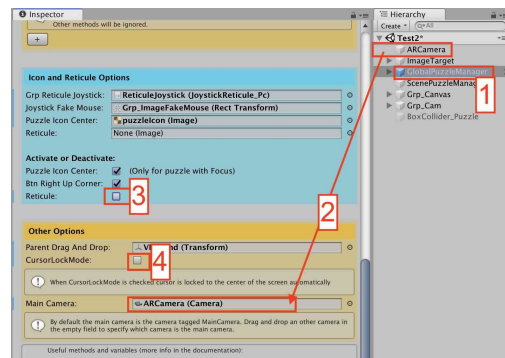
**2-** On the GlobalPuzzleManager you need to (spot 1):

- Drag and drop your main camera in slot Main Camera (spot 2)

- Uncheck the Box Reticule to remove the reticule on the center of the screen (spot 3).

- Uncheck the box CursorLockMode (spot 4).

(Info: When CursorLockMode is checked the cursor is forced to be on the center of the screen. This options doesn't work with AR)

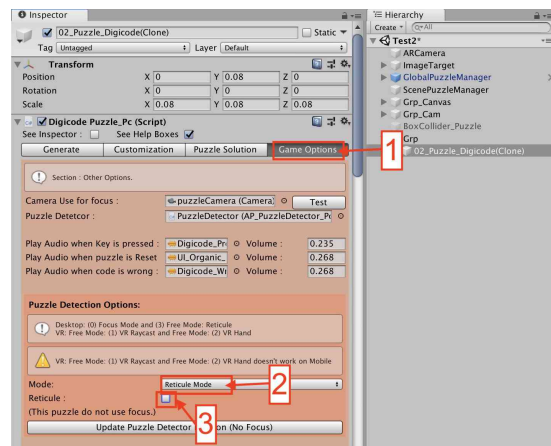


**3-** Inside a puzzle (spot 1)

You must use:

- Reticule Mode (spot 2)

- Uncheck Reticule (spot 3)



#### 4-By default the player can't interact with a puzzle.

**info:**

It is the object **puzzleDetector** that activates the puzzle when the player enters the puzzle area.

This system does not work with the AR.

You must **manually** enabled the variables:

**b\_PuzzlesActivated** (forces the activation of the puzzle).

**b\_puzzleStates** (allows the player to interact with the reset button of the puzzle).

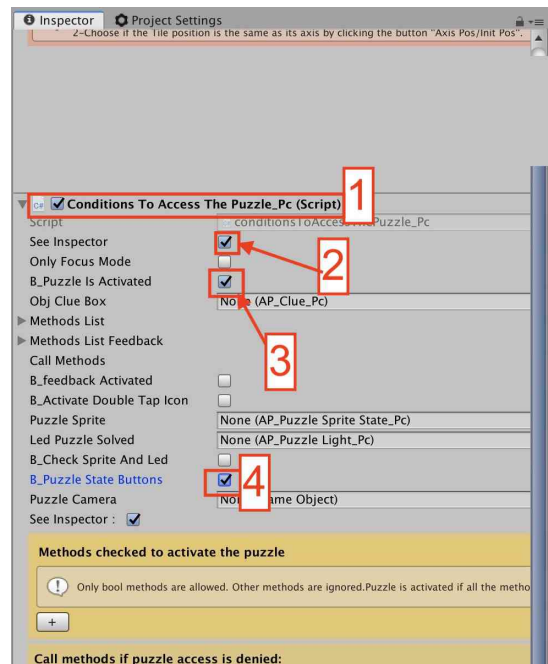
-Select your puzzle in the Hierarchy.

-In the Inspector go to section **ConditionsToAccessThePuzzle** (spot 1)

-Check the box **see inspector** (spot 2)

-Check the box **B\_Puzzle Is Activated** (spot 3)

-Check the box **B\_Puzzle State Buttons** (spot 4)



#### 5-You can use the **AR\_Puzzle** script as a base to make a puzzle appear and disappear.

(Project tab: **PuzzleCreator** → **Assets** → **Script** → **Demo** → **AR\_Puzzle**)



## Learn more: Study case: The Demo scene.

### Completion System

**Info:** The system lets you know if all the puzzles have been solved.

If all the puzzles are solved the game ended.  
A UI is displayed on screen.

Open the scene **01\_Demo** (spot 1)

(Project tab: PuzzleCreator → Assets → Scene → Demo  
→ Demo Desktop → 01\_Demo)

**Info:** Puzzle completion is manage by **Completion** (spot 1)

If in the Hierarchy it is possible to choose how many puzzles need to be solved to win the game (spot 2).

It is possible to delete the completion save by pressing the button

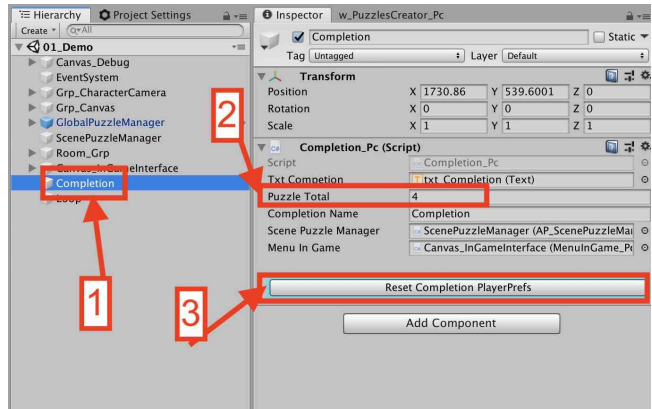
**Reset Completion PlayerPrefs.**

**Scripting** (Call manually reset completion):

Call the method **AP\_ResetDemo()**

This method is part of script **Completion\_Pc.cs**

this script is on the **Completion** object in the Hierarchy

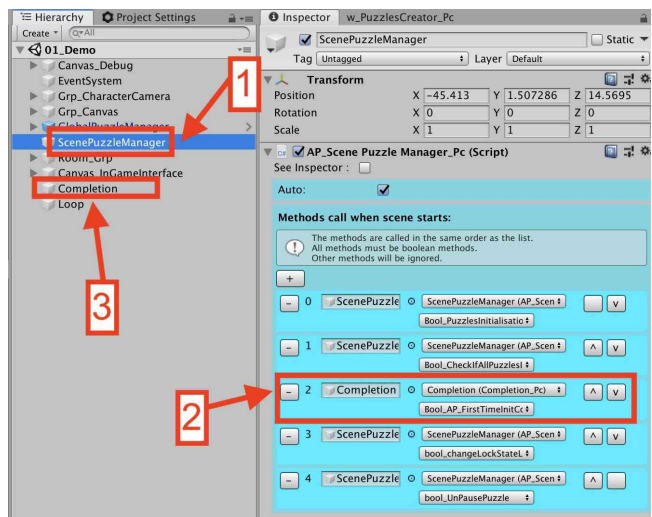


-In the Hierarchy select **ScenePuzzleManager** (spot 1)

In section **Methods call when scene starts:**

The method **Bool\_AP\_FirstTimeInitCompletion()** is called (spot 2)

This method contained in Object **Completion** (spot 3) allows to initialized the completion system.



### In Game UI

A UI is used to display:

-Pause menu

-End of the game menu.





During the game: UI is managed by  
**Canvas\_InGameInterface** (spot 1)

**In section Condition to open the menu (spot 2)**  
a method is called to check if the saving puzzle process is not running.

Call the method **bool\_returnSaveProcess()**

This method is part of script **AP\_ScenePuzzleManager\_Pc**  
this script is on the **ScenePuzzleManager** object in the Hierarchy

**In section Actions when the menu is opened:**

-Character movement is deactivated (spot 3)

Call the method **bool\_DeactivateCharacter()**

This method is part of script **Character\_Pc.cs**  
this script is on the **Character** object in the Hierarchy

-The cursor is not locked to the center of the screen (spot 4)

Call the method **bool\_ChangeLockStateConfined()**

This method is part of script **Ap\_ScenePuzzleManager.cs**  
this script is on the **ScenePuzzleManager** object in the Hierarchy

-Puzzles are Paused (spot 5)

Call the method **bool\_PausePuzzle()**

This method is part of script **Ap\_ScenePuzzleManager.cs**  
this script is on the **ScenePuzzleManager** object in the Hierarchy

-A sound is played (spot 6)

Call the method **bool\_playASound()**

This method is part of script **MenuInGame\_Pc.cs**  
this script is on the **CanvasInGameInterface** object in the Hierarchy

**In section Actions when the menu is closed:**

-Character movement is activated (spot 7)

Call the method **bool\_ActivateCharacter()**

This method is part of script **Character\_Pc.cs**  
this script is on the **Character** object in the Hierarchy

-The cursor is locked to the center of the screen (spot 8)

Call the method **bool\_ChangeLockStateLock()**

This method is part of script **Ap\_ScenePuzzleManager.cs**  
this script is on the **ScenePuzzleManager** object in the Hierarchy

-Puzzles are unpaused (spot 9)

Call the method **bool\_UnPausePuzzle()**

This method is part of script **Ap\_ScenePuzzleManager.cs**  
this script is on the **ScenePuzzleManager** object in the Hierarchy

-A sound is played (spot 10)

Call the method **bool\_playASound()**

This method is part of script **MenuInGame\_Pc.cs**  
this script is on the **CanvasInGameInterface** object in the Hierarchy

