

VR Activity:

Sumerian



INSTRUCTIONS



Introduction

Have you ever wondered what it's like to perform surgery, scuba dive to the bottom of the ocean, or ride the world's tallest roller coaster? Well, now you can! With virtual reality (VR), nothing is off limits. Virtual reality offers a simulated vision to create an immersive 3D environment. While some VR experiences require a headset and controllers, other VR can be experienced simply by using a computer screen.

Virtual reality allows the user to experience and explore different environments. In VR, the user gets a 360° view. VR can be passive, where the user can control how they move around in the environment, or interactive, where controllers allow the user to truly interact with the virtual environment.

VR is a valuable tool for training and practice, especially in fields where it might be dangerous or even impossible to practice in real life. Doctors in training can have the opportunity to truly put themselves in realistic situations, without endangering patients. Companies are also starting to use VR to help them train new employees in customer service situations. These options can be easier and less expensive than traditional training.

As the equipment to develop VR becomes less expensive and the computers that program the experience become faster and more sophisticated, more of our reality will become...virtual.

Practice Activity

Today, you will get to practice designing your own VR experience using Amazon Sumerian. Sumerian makes it easy to build, produce, and publish exciting VR experiences.

1 To begin the demo, please [login to your AWS Educate account](#):



2 If you do not have one, [visit the URL](#):

When filling out the application, enter your school name, enter your school-issued or personal email address, and fill in the remaining fields.

The screenshot shows the "Apply to join AWS Educate" form, specifically "Step 2/3: Tell us about yourself". The form includes several input fields: "School or Institution Name" (with a note to start typing the name and select from a list), "First Name", "Last Name", "Email" (with a note to provide a valid current email), "Birth Month", "Birth Year", "Graduation Month", "Graduation Year", and "Promo Code (optional)". There is a "Disability-Related Questions" link. At the bottom, there is a "I'm not a robot" checkbox, a "CAPTCHA" image, and a "NEXT" button. A red line points from the text above to the "School or Institution Name" field.

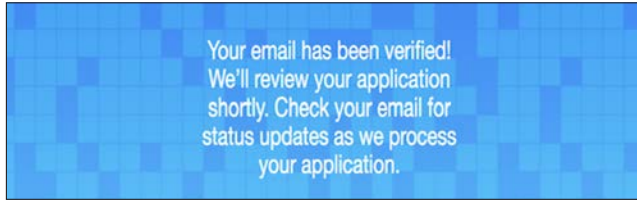
3 Accept the Terms and Conditions

The screenshot shows a dark grey box with the text "You must scroll through the entire Terms and Conditions before accepting or declining." Below this text, there are two buttons: "I Agree" (highlighted with a white glow) and "I Decline". At the bottom right, there is a "NEXT" button. A red line points from the text above to the "I Agree" button.

4 Open the link sent to your email to verify your email address



- 5 You will be redirected to a page, confirming your application has been submitted and is under review. Applications are reviewed within 24 to 48 hours.



- 6 After your application is approved, you will receive a confirmation email. Follow the link to **Set Password**.

A screenshot of the AWS Educate 'Set Your Password' page. The page has a white background with a blue header containing the 'aws educate' logo. Below the header is the text 'Welcome to the AWS Educate Community'. The main section is titled 'Set Your Password' and contains three input fields: 'Your Login Credential' (with a placeholder email), 'New Password' (with a masked password), and 'Verify New Password'. A yellow 'Set Password' button is below the fields. Below the button is a warning message: 'The password you enter here will be used for access to the AWS Educate Community. It is always more secure to not use the same password that you use on other sites.' At the bottom, there are five password requirements listed in Roman numerals: i. Password must be at least 8 characters long, ii. Password must contain at least one letter, iii. Password must contain at least one number, iv. Password cannot equal or contain your user name, v. Password must contain at least one of the following characters ! # \$ % - _ = + < >.

- 7 Now you have access to the AWS Educate portal. Click **AWS Account** to create your free AWS starter account.

A screenshot of the AWS Educate portal home page. The top navigation bar is blue with the 'aws educate' logo on the left and links for 'Badges', 'My Backpack', 'Advanced Learning', 'AWS Account', and 'Logout' on the right. The main content area has a white background. At the top, it says 'KaMarie Newton, your cloud journey awaits!' and 'You're well on your way to career awesomeness. Let's get started!'. Below this are three vertical cards for badges: 'Cloud Explorer Badge' (described as a great place to start), 'Cloud Inventor Badge' (described as diving deeper), and 'Cloud Builder Badge' (described as time to create). Each card has a corresponding illustration: binoculars for Explorer, a lightbulb for Inventor, and hands holding blocks for Builder.

8

Click **Create Starter Account**.

I'd like to use an AWS Educate Starter Account

Choose an AWS Educate Starter Account to get access to an AWS account with a preset limit on your spend on AWS services. An AWS Educate Starter Account is run and managed by a third party (Vocareum, Inc.) and the Starter Account runs in Vocareum's environment on AWS. Starter Accounts are subject to a separate agreement between you and Vocareum under separate terms and conditions.

The AWS Educate Starter Account provides access to most but not all AWS services. Students at an AWS Educate member institution will receive up to \$75 (USD) of AWS credit per year in their AWS Educate Starter Account, and students at non-member institution will receive up to \$30 (USD) of AWS credit per year.

You don't need a credit card to use a Starter Account because AWS promotional credits are already available in the account. When your usage of AWS services exceeds the balance on the account, the account is closed and any running services or other resources on the account are lost.

Create Starter Account

9

Review your account information including credits and expiration date.

AWS Educate Starter Account

Your cloud journey has only just begun. Use your AWS Educate Starter Account to access the AWS Console and resources, and start building in the cloud!

AWS Educate Starter Account

Your account has an estimated **30** credits remaining and access will end on **Nov 3, 2021**.

Note: Clicking this button will take you to a third party site managed by Vocareum, Inc. ("Third Party Servicer"). In addition to the AWS Educate terms of service, your use of the AWS Educate Starter Account is governed by the Third Party Servicer's terms, including its Privacy Policy. AWS assumes no responsibility or liability and makes no representations or warranties regarding services provided by a Third Party Servicer.

10

Accept the **Terms and Conditions**.

These Terms constitute the entire and exclusive understanding and agreement between Vocareum and you regarding the Services and Content, and these Terms supersede and replace any and all prior oral or written understandings or agreements between Vocareum and you regarding the Services and Content. If any provision of these Terms is held invalid or unenforceable (either by an arbitrator appointed pursuant to the terms of the "Arbitration" section above or by court of competent jurisdiction, if you opt out of arbitration by sending us an Arbitration Opt-out Notice in accordance with the terms set forth above), that provision will be enforced to the maximum extent permissible and the other provisions of these Terms will remain in full force and effect.

You may not assign or transfer these Terms, by operation of law or otherwise, without Vocareum's prior written consent. Any attempt by you to assign or transfer these Terms, without such consent, will be null. Vocareum may freely assign or transfer these Terms without restriction. Subject to the foregoing, these Terms will bind and inure to the benefit of the parties, their successors and permitted assigns.

Any notices or other communications provided by Vocareum under these Terms, including those regarding modifications to these Terms, will be given: (i) via email; or (ii) by posting to the Services. For notices made by e-mail, the date of receipt will be deemed the date on which such notice is transmitted.

Vocareum's failure to enforce any right or provision of these Terms will not be considered a waiver of such right or provision. The waiver of any such right or provision will be effective only if in writing and signed by a duly authorized representative of Vocareum. Except as expressly set forth in these Terms, the exercise by either party of any of its remedies under these Terms will be without prejudice to its other remedies under these Terms or otherwise.

Contact Information
If you have any questions about these Terms or the Services, please contact Vocareum at info@vocareum.com

I Agree

11

Click on the **AWS Console**.

Welcome to your AWS Educate Account

AWS Educate provides you with access to a wide variety of AWS Services for you to get your hands on and build on AWS! To get started, click on the AWS Console button to log in to your AWS console.

Please read the FAQ below to help you get started on your Starter Account.

- [What are the list of services supported?](#)
- [What regions are supported with Starter Accounts or Classroom Accounts?](#)
- [I can't start any resources. What happened?](#)
- [Can I create users within my Starter or Classroom Account for others to access?](#)

Your AWS Account Status

- Active**
full access ()
- \$30**
remaining credits (estimated)
- 2:60**
session time

[Account Details](#) [AWS Console](#)

Please use AWS Educate Account responsibly. Remember to shut down your instances when not in use to make the best use of your credits. And, don't forget to logout once you are done with your work!

NOTE: CloudFront service is temporarily unavailable.

12

Type **Sumerian** in the search box and click on Amazon Sumerian to open the program.

AWS Management Console

AWS services

Find Services
You can enter names, keywords or acronyms.

Q Sumerian X

Amazon Sumerian
Build VR, AR, and 3D applications

Recently visited services

- Amazon Sumerian
- AWS DeepComposer

All services

Stay connected on-the-go

Download your app

Explore AWS

AWS re:Invent

13

The first step for building a virtual reality world is to create a scene. Click on **Create new scene**.

Services Support

Did you know that you can use Open Source solutions like three.js and Babylon.js to build 3D, AR, and VR content on AWS? To learn more, check out these tutorials.

Home Drafts Trash Projects

Recent scenes

- Create new scene**
Today
- GTD Scene
29 October 2020
- Default Lighting Template
- test
29 October 2020
- GTD Scene
29 October 2020

Tutorials on alternative 3D solutions

- Sumerian Hosts in three.js
29 August 2020
- Sumerian Hosts in Babylon.js
29 August 2020
- Export to glTF
29 March 2020
- Create a glTF Viewer
29 April 2020
- AWS Amplify
Publish with Amplify
29 April 2020
- AWS Amplify
Privately Publish with Amplify
17 July 2020

Welcome to Amazon Sumerian

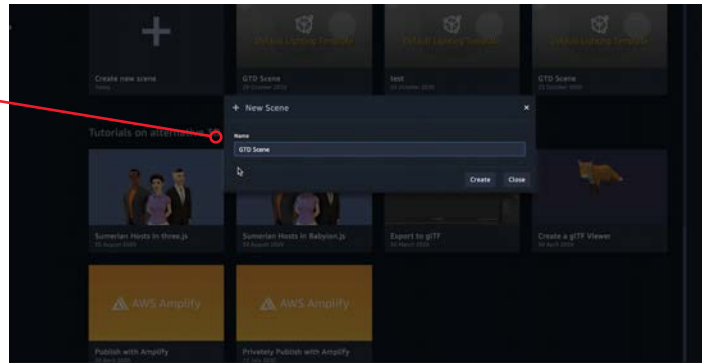
For the best experience, use the latest version of Firefox.

Announcement: Amazon Sumerian Hosts is now available as an Open Source project on GitHub. Our goal is to make it easy to create interactive, animated 3D characters that can be rendered on the web, and leverage AWS Services. To learn more, check out the Amazon Sumerian Hosts GitHub repository.

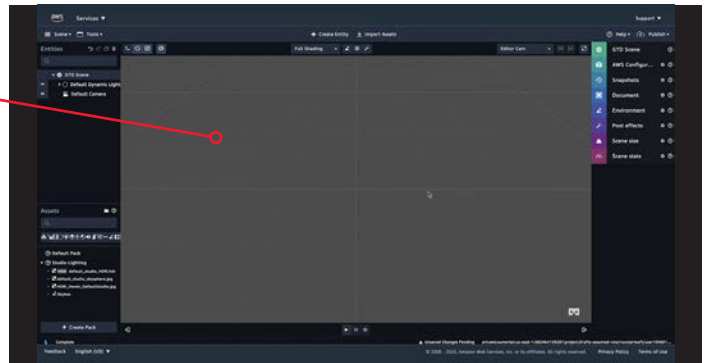
Feedback English (US)

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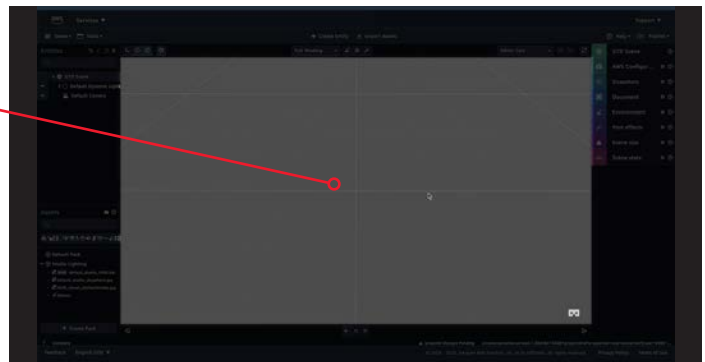
- 14 Give your scene the name, **GTD Scene**, and click **Create**.



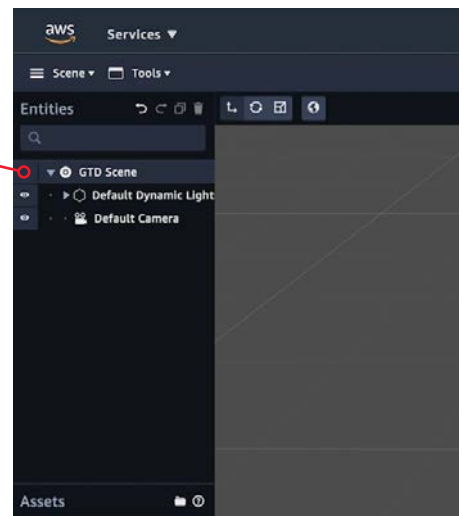
- 15 Here's the empty scene. Before we start building, let's get a closer look at the Sumerian interface.



- 16 The area in the center is the canvas. This is where you will place, view, navigate, inspect, and preview all the contents of your scene.

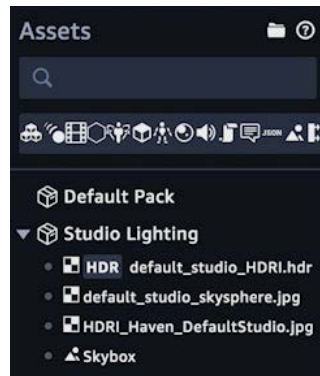


- 17 Look at the top left of the screen. Entities are the elements that make up a scene. The **Entities** panel is the best place to select specific entities. Click an entity here, and it will be selected in the canvas.



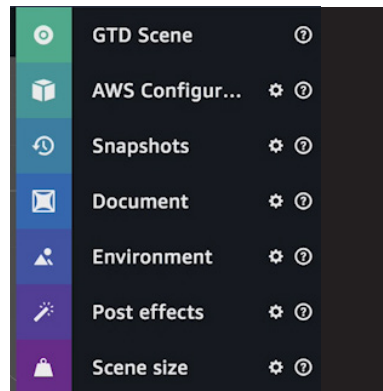
18 On the bottom left of your screen you will find the Assets that you've added to your scene.

You can add assets to your scene from Sumerian's asset library or upload them from your computer. Assets become entities once they are added to a scene.



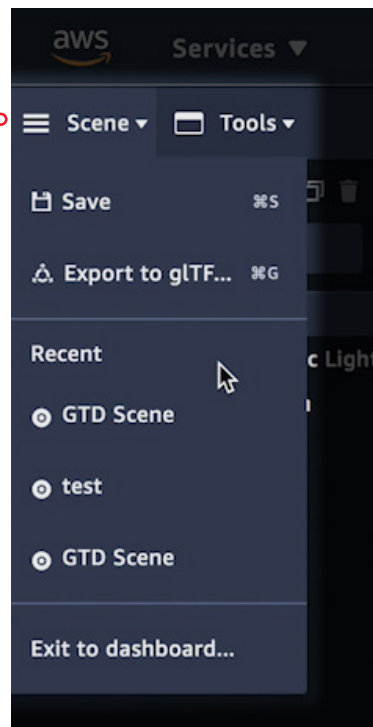
19 The right side of your screen shows all the configuration options. The **Inspector** panel is used the most, and it changes depending on the selected entity.

Try selecting an entity in the **Entities** panel. Notice when you select an entity, its components show up in the **Inspector** panel.

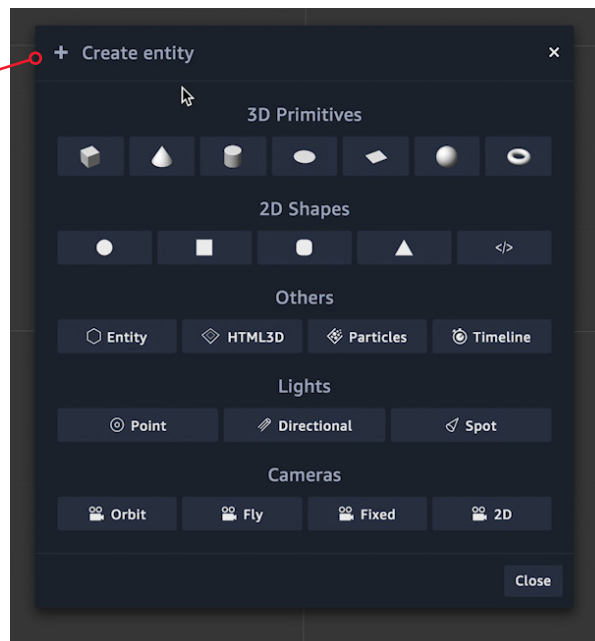


20 The bar at the top of the interface contains the options for managing your account, publishing your scenes, searching, and getting help.

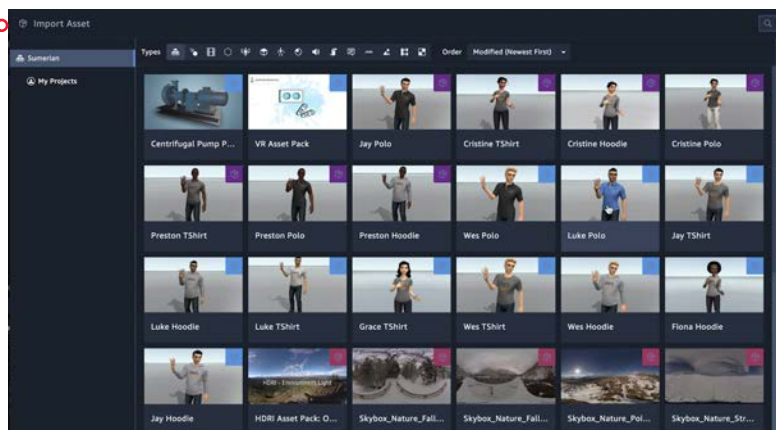
The **Scene** drop down menu allows you to return to the dashboard, open a recent scene or export a scene.



21 The most common buttons in the menu bar are Create Entity and Import Assets. Click on the **Create Entity** button to see the entity menu, where you create new entities for your scene: 3D Primitive shapes, 2D Shapes, Empty and HTML entities, Light entities, and Camera entities.

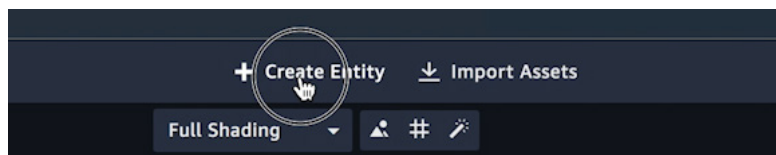


22 Now click on the **Import Assets** button to open the asset library, a public library of 3D assets for you to use.

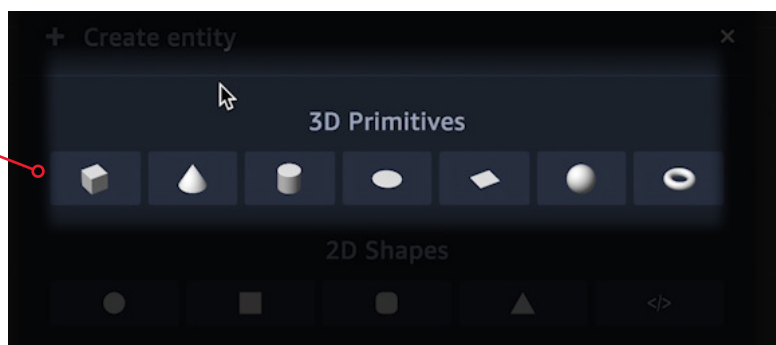


Let's practice by creating a room using a Box.

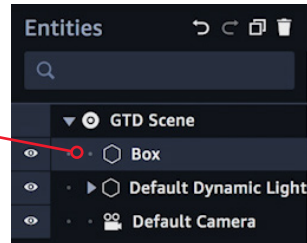
23 First, we need to select **Create Entity**.



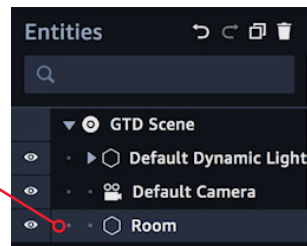
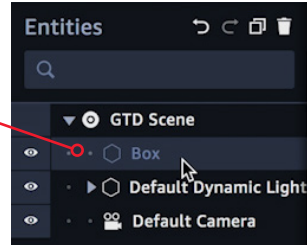
24 Then, choose the box in the **3D Primitives** menu.



25 If you look at the **Entities** section, you will see that you've now added the box.



26 Double click on the Box and rename it **Room**.

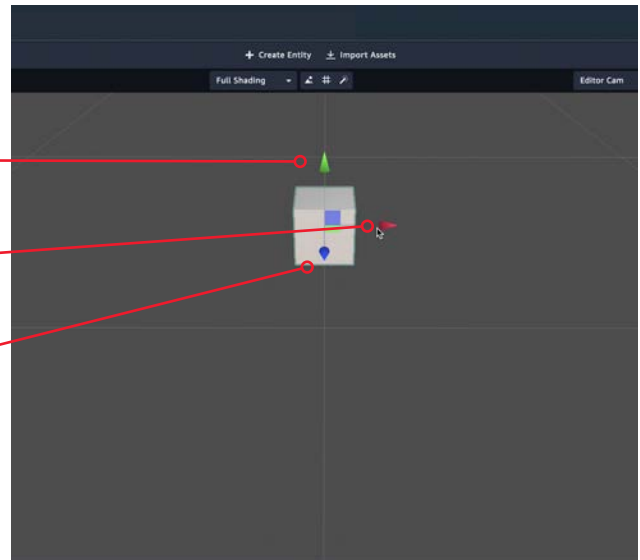


27 The box appears in the Canvas. Practice moving the box.

You can move the box up by clicking on the green arrow

You can move the box to the right by clicking the red arrow.

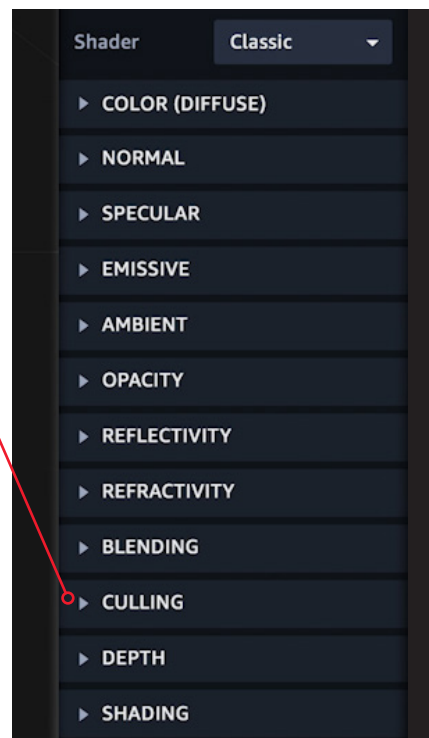
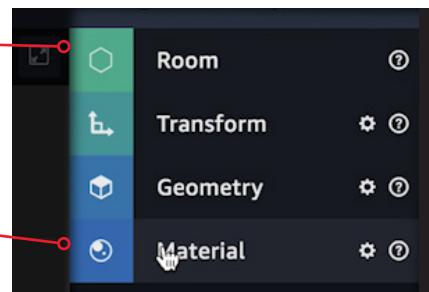
You can move the box forward by clicking on the blue arrow.



28

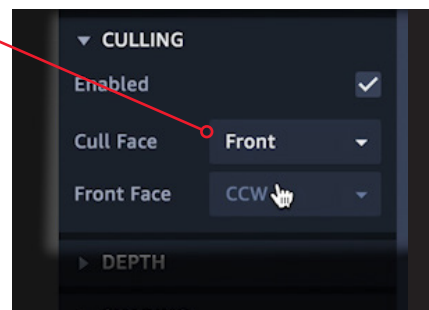
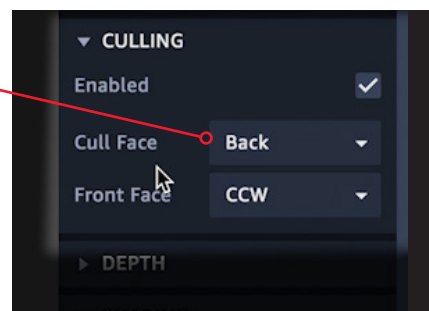
Select the **Room** entity in the **Entities** section. Now look at the right-hand side of your screen.

Click to expand the **Material** component, and then open the **Culling** property. Culling allows you to “see through” part of the 3D figure.



29

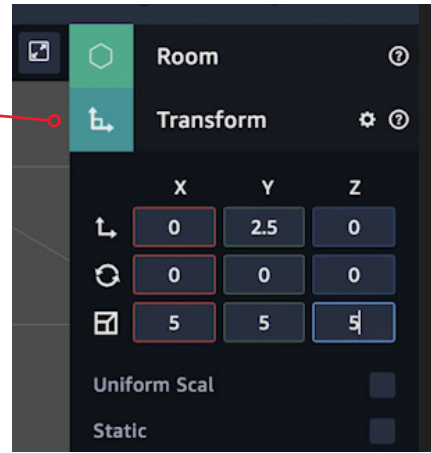
Change the Cull Face drop down option to **Front**.



30

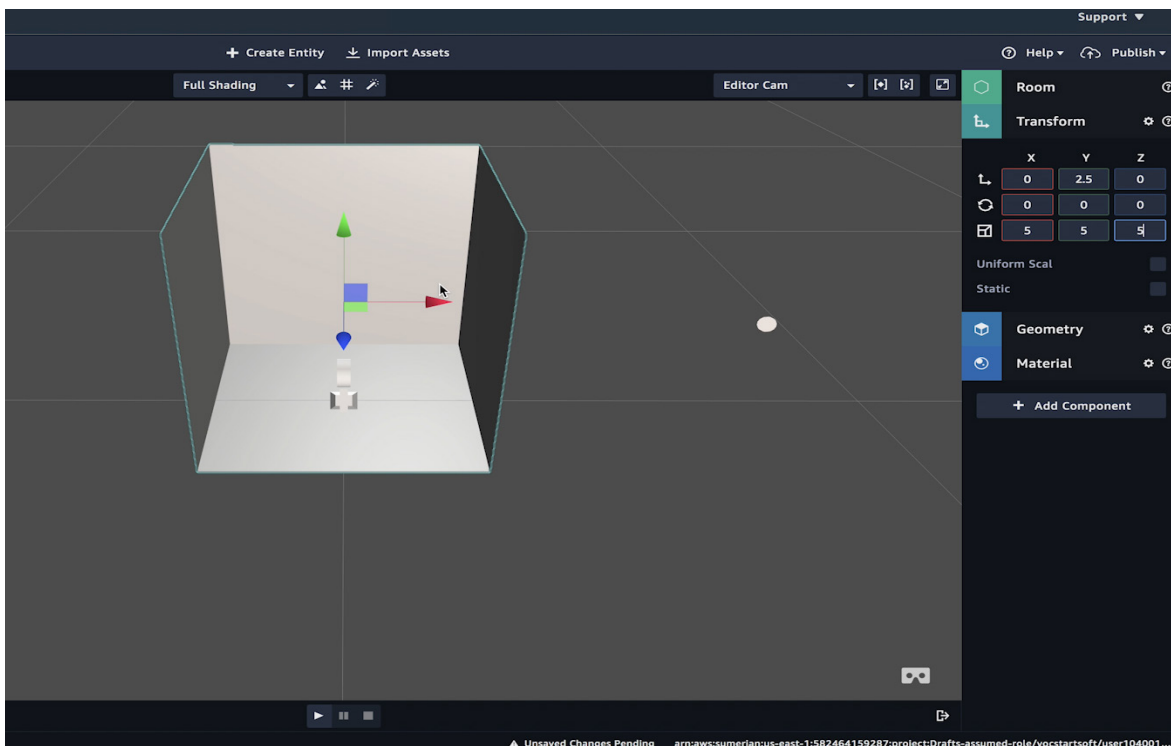
Scroll back up and expand the **Transform** component.

Change the Transform values to the values shown here. This will change the size of your room.



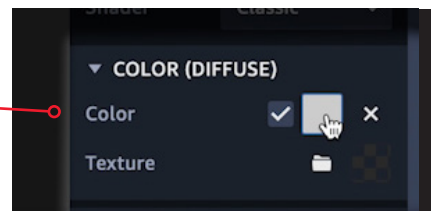
31

You will see your open room in the scene.



32

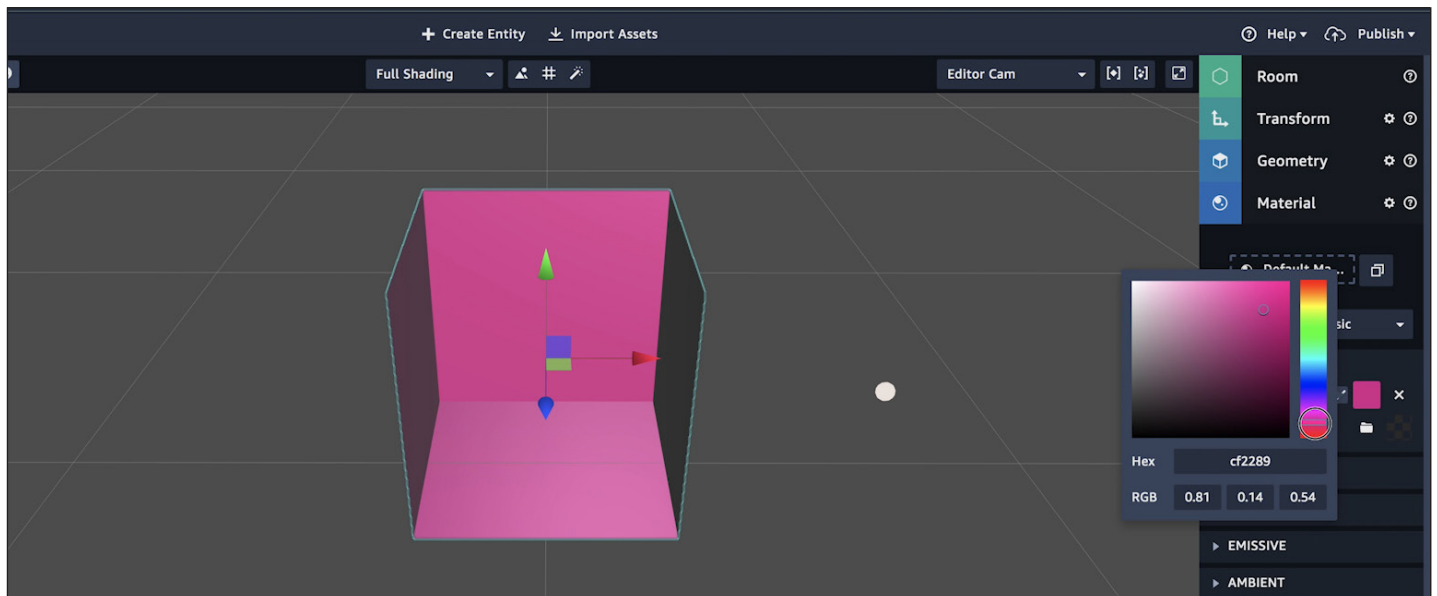
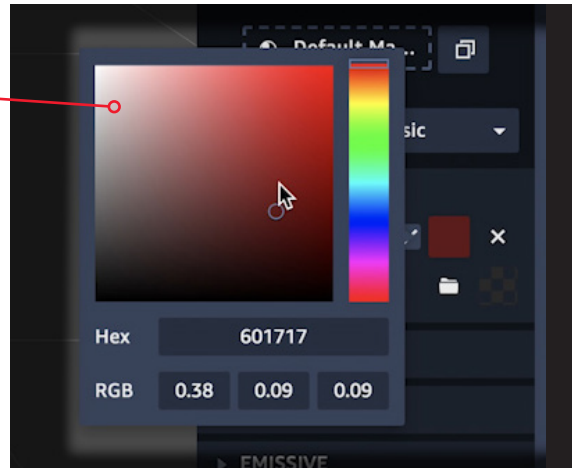
Scroll down and expand the **Material** component once more.



33

Change the color of your room by opening the **Color (Diffuse)** property. Change the color using the color picker. I'm choosing a pink color, but you can pick any color you prefer.

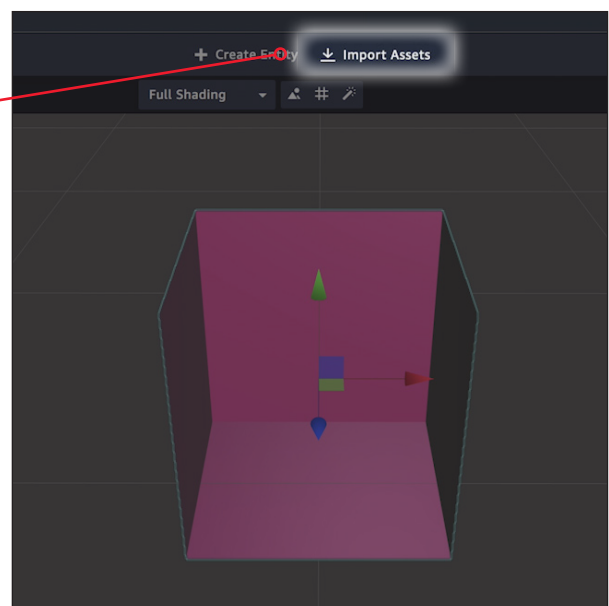
The scene will appear like this.



Let's try adding some furniture to our room.

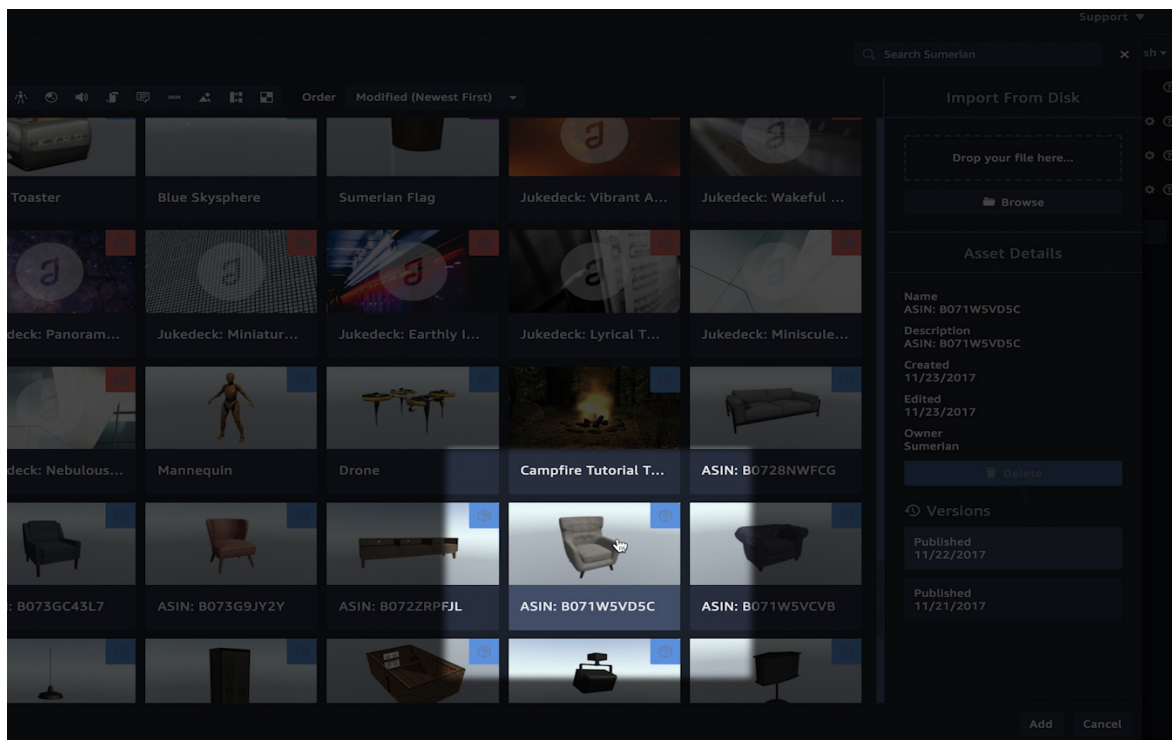
34

Open the Asset Library by clicking on **Import Assets** above the canvas.



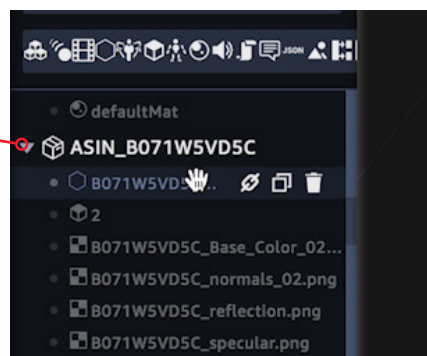
35 Scroll down to find the furniture assets.

Select a chair and click **Add**.

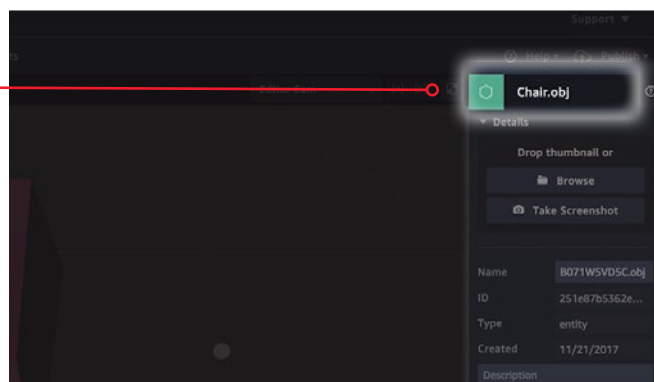
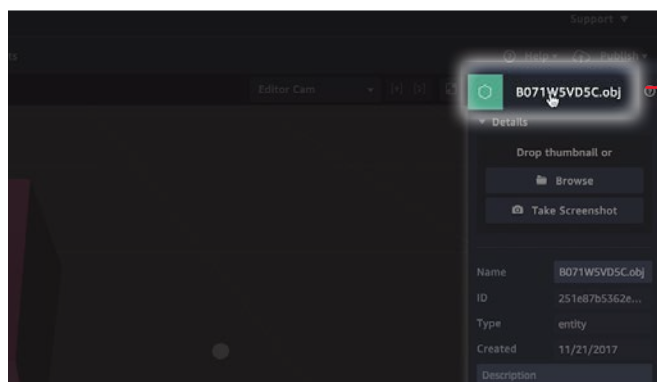


36 The chair is now an Asset. Select the chair in the **Assets** section.

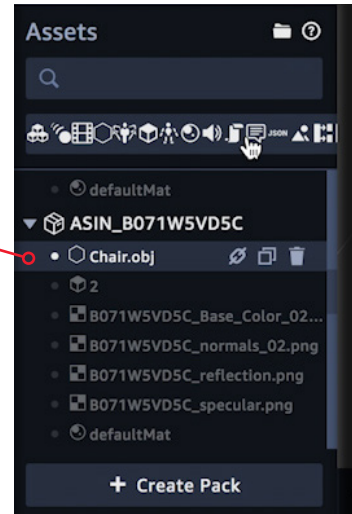
Notice the chair now appears on the right-hand side of your screen.



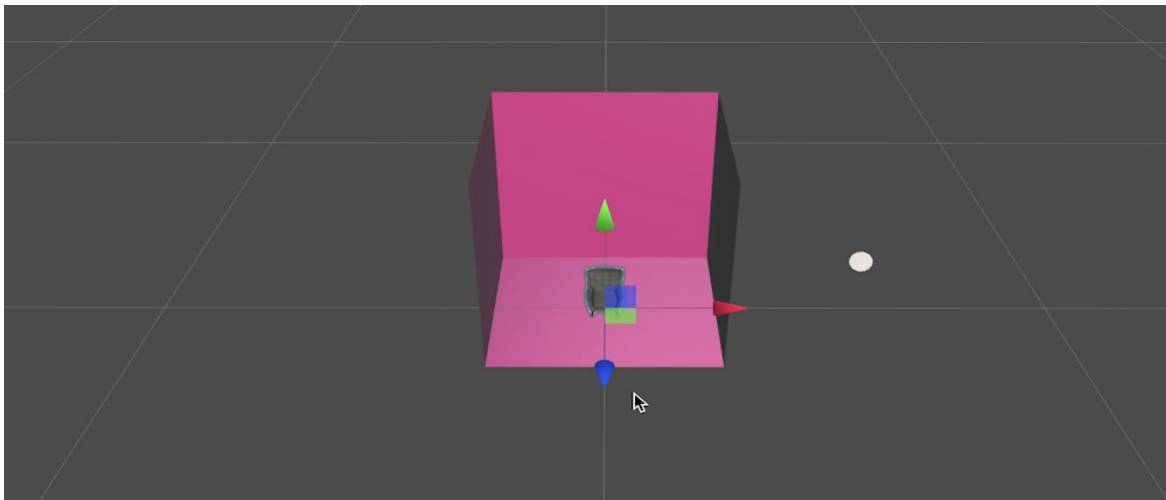
37 Underneath the image of the chair, change the name to Chair.



- 38 Now look back at the **Assets** section.
- Expand the asset pack contents and find the asset type (it ends with .obj); it has a hexagon icon next to it.
- Drag the asset onto the canvas.



- 39 See? Now the chair appears in your scene. You can move the chair by using the green, red, and blue handles. Place the chair anywhere in the room.



- 40 To practice adding more objects to your scene, try adding the following:

- Table
- Lamp
- Rug

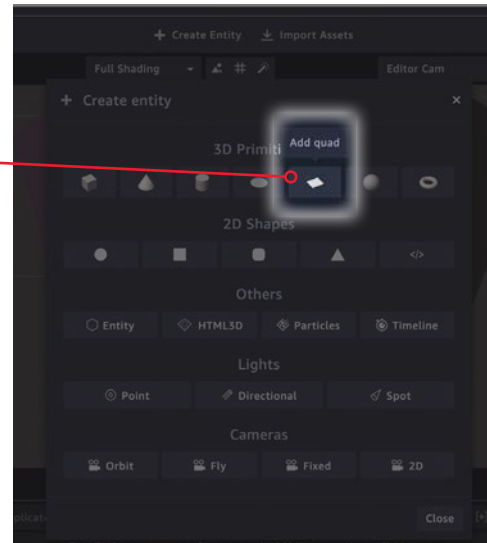
When you are finished, your scene should look something like this.

Way to go!

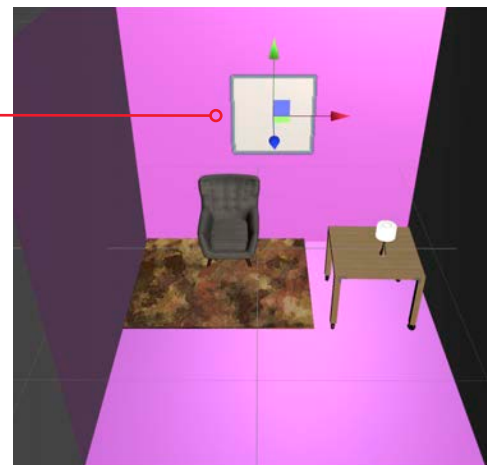


41 If you want to keep decorating your space, you can place a custom picture on the wall by using a **Quad** entity and then adding a custom image as the texture.

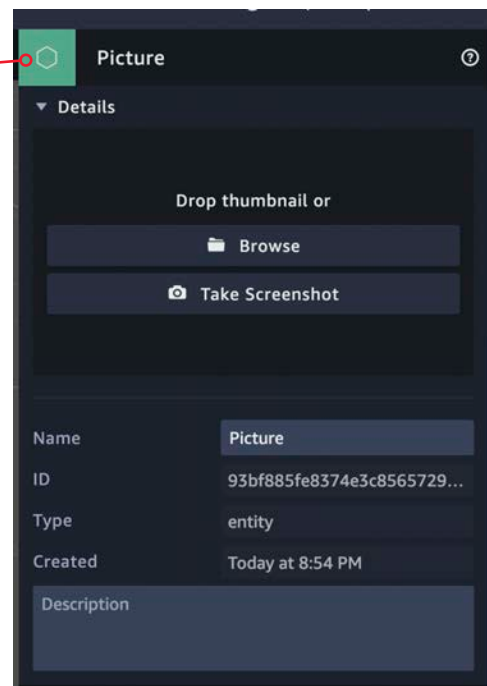
From the Create Entity menu, add a Quad by clicking on it. It is found under “3D Primitives”.



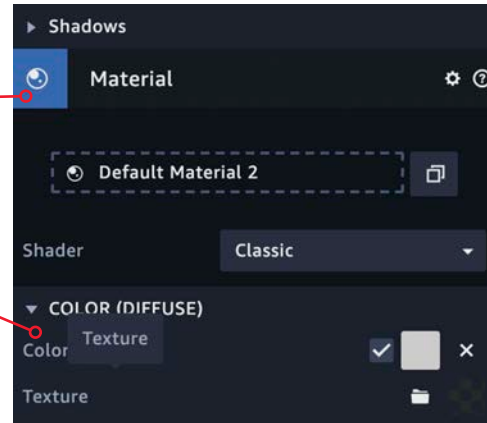
42 Move the Quad so that it appears on the wall.



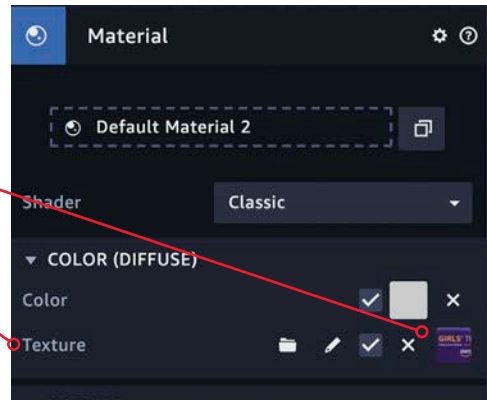
43 On the right-hand side, scroll to the “Details” section and rename the Quad “Picture”.



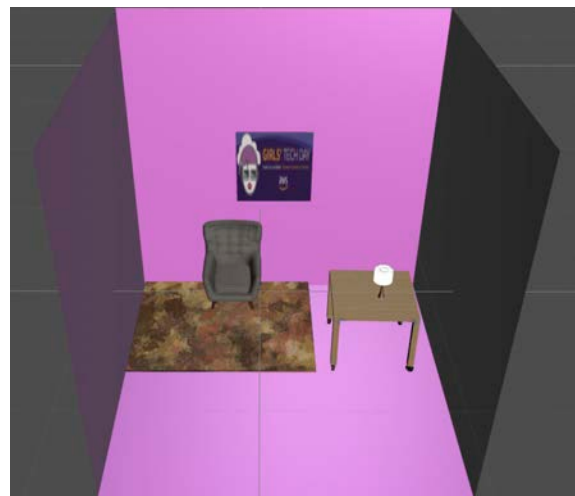
- 44 With the Picture entity selected, expand the **Material** component and then expand the **Color (Diffuse)** property.



- 45 Either upload your own image by clicking on **Texture** or drag and drop your own image on the Texture drop input. Here is a picture of the Girls' Tech Day logo. Use any image that you have uploaded to your computer.

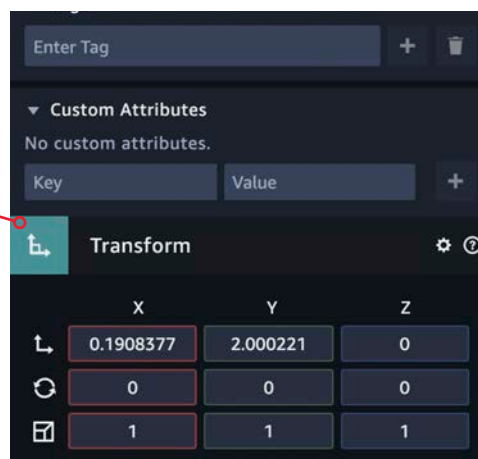
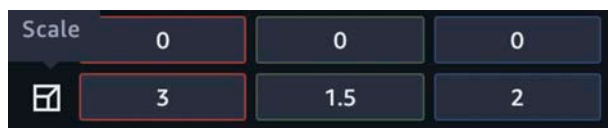


- 46 The scene will look something like this.



47 To make the image bigger, on the right-hand side, scroll up to **Transform**.

Change the scale value to what's shown.



48 The canvas appears as shown.

You can enlarge the pink room, by selecting **Room** in the entities section or by selecting the room in the canvas.

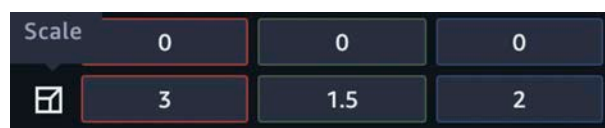
When the canvas is selected, it will be highlighted green.



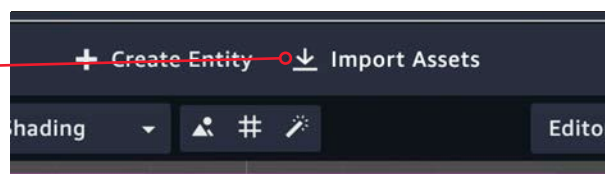
49 Once selected, navigate to the **Transform** component on the right-hand side, and change the scale to the values shown.

The room appears as shown.

Now you can add a person (called a host) to the scene.

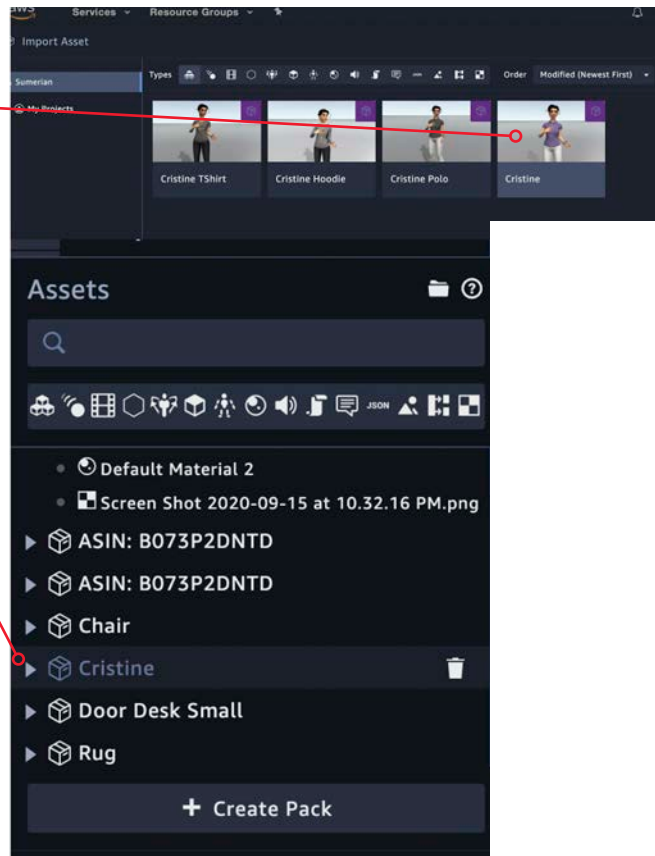


50 Click on the **Import Assets**



- 51 Find Cristine (with the purple shirt) and select her and click **Add**.

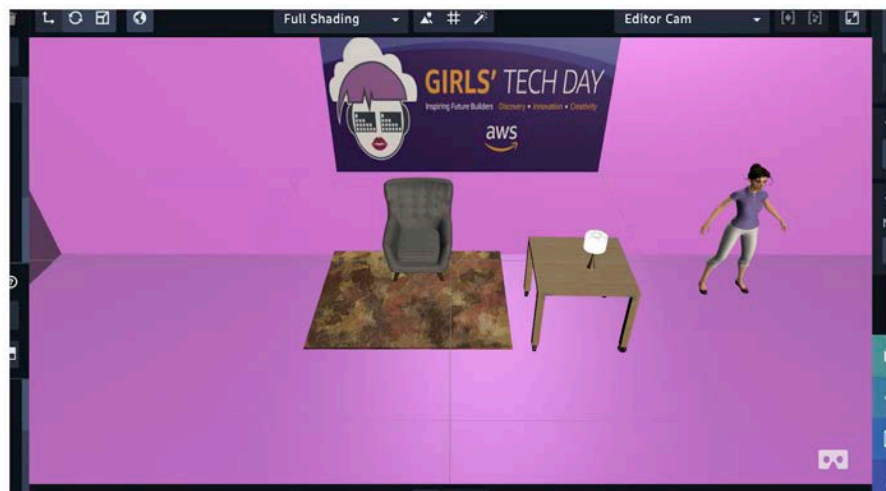
Cristine will appear under Assets.



- 52 Select **Cristine** and move it to the scene.



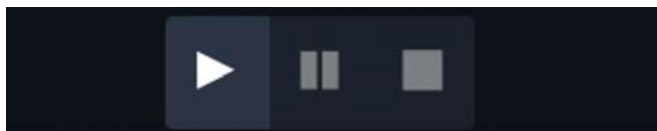
- 53 Cristine appears in the scene. Move her to where you want her in the scene.



- 54 Cristine appears in the scene.
Move her to where you want her
in the scene.



- 55 You can run the scene by clicking the
run button.



Keep experimenting with all the tools to make as many spaces as you can!

Extension Activities

To learn more about virtual reality, explore these activities and ideas:

- Use Sumerian to create a new 3D scene. Explore the Assets Library to find more ways to customize your virtual environment.
- Learn about how VR is used in the workplace by looking at fields like architecture, addiction treatment, and more. Think about ways VR can benefit other career fields.
- Design your own VR environment through art. Draw or sketch the VR environment of your dreams.

Parent Tips

Your child is learning about virtual reality. VR offers a simulated vision to create an immersive 3D environment. VR gives users the chance to experience, or even interact, with a new environment. Support your child by asking her to share her project with you, and try one or more of the ideas below:

- Ask your child to tell you examples of where VR is used every day.
- Look around your environment and discuss how you would turn your space into a virtual environment.
- Explore careers where people design VR experiences for others, or careers where you might experience VR training.