



INTRO TO GAME DESIGN

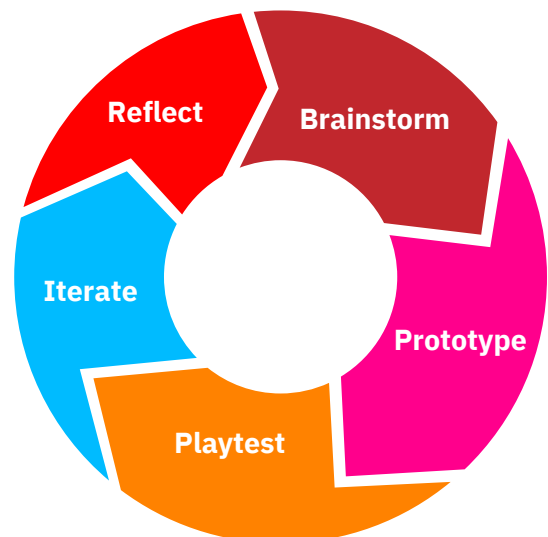
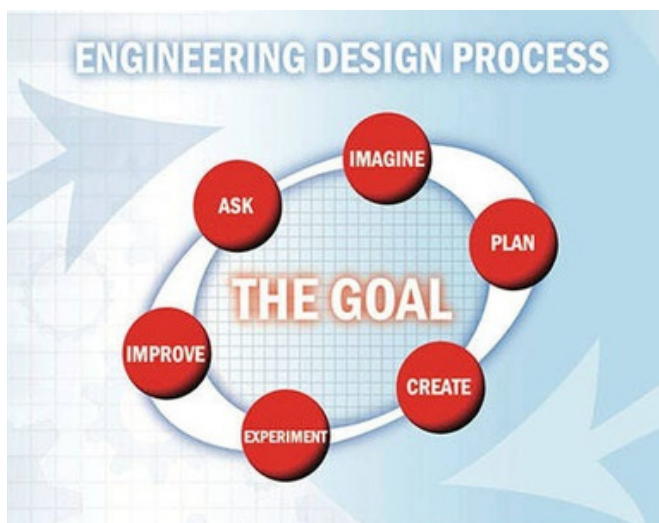
Computer
Programming
and Game
Design with
Delightex Edu

By Michael Fricano II



What is Computer Programming?

Computer programming is the process of writing instructions to be carried out by a computer. Your computer and all of the websites you visit, your phone and all the apps you use, and any video games you play are all made possible by computer programming. Computer programming is also the driving force behind many of the world's current technological advancements, including artificial intelligence, autonomous vehicles, and virtual reality. Just like a game designer, computer programmers constantly move through a cycle of prototyping, testing, and tinkering with their programs. This is often called the **engineering design process**. This process is used throughout engineering, science, and design-related fields and exists in several different versions. Here are a version from NASA as well as the Game Design Cycle you used in earlier:



What do these steps mean as a computer programmer?

Ask: What is the problem that you are solving? Are you creating something brand new or improving on an existing product? Who will be using your product and what will matter most to them?

Imagine: Think about what you want your Project to look like. Look at what similar things already exist and take note of what you like and dislike about them. Brainstorm what features your product will have.

Plan: Make a plan for achieving your goal. Research different tools that may be able to help you and decide what you will use. Break your problem down into smaller parts and think about all of the specific tasks that will need to be accomplished. For programmers this can include ***psuedocoding***, which is the process of writing down what you want your program to do in a non-computer language.

Create: Start writing your program according to your plan!

Experiment: Test your Project. Does it do what you want? Are there bugs or unexpected behaviors? Let other people test it too. Do they understand how to use it without you explaining it to them? Is it easy to use?

Improve: Take feedback from your testing and use it to improve your product. Many digital products are constantly updated and improved throughout their existence as new problems arise and as the world around the product changes.





MAKE VR IN THE CLASSROOM

What is Delightex Edu?

Delightex Edu is a creation tool that allows teachers and students to create augmented and virtual reality experiences. Delightex Edu is a versatile tool because it is accessible across practically every modern device: mobile, tablet, laptop, Chromebook, desktop computer, and certain VR headsets.

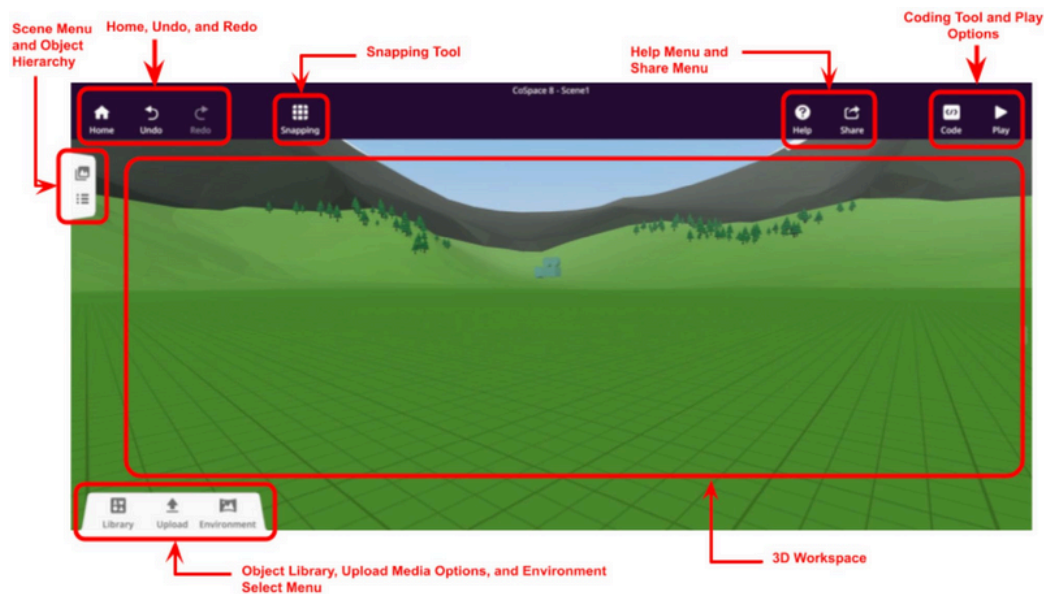
Students can easily build in 3D with child-friendly drag-and-drop creation tools. They can add movement and interactions to their Projects with block-based programming, advanced scripting, and python. Creations can then be explored in virtual reality, augmented reality, and with a Merge Cube. For teachers, Delightex Edu offers student accounts and class management tools. Teachers can also set up Delightex Edu assignments for students to work on individually or in groups to foster collaboration.

Delightex Edu is adaptable to almost any subject and grade and offers a gallery of user-made Projects, lesson plans, and getting started resources.



The Delightex Edu Project Editor

The Delightex Edu Project Editor is where all the creating and coding takes place. The Project you are working on is referred to as a "Project". The Project is automatically saved as work is conducted. There is no need to save manually, therefore there is no save button on the screen.



Home - Exits you out of your Projects. You will be taken back to your account dashboard.

Undo - Takes away the last change you made in the Project.

Redo - Puts back the last change you made in the Project.

Scene Menu - Shows you a list of the scenes in your Project. Create new scenes, rename scenes, and rearrange the scenes.

Object Hierarchy - Provides a list of all the objects in your Project. You can select an object from the list, hide an object, and open an objects edit menu.

Snapping Tool - Turn snapping on and off and reduce or increase the size of the snapping grid in the 3D workspace.

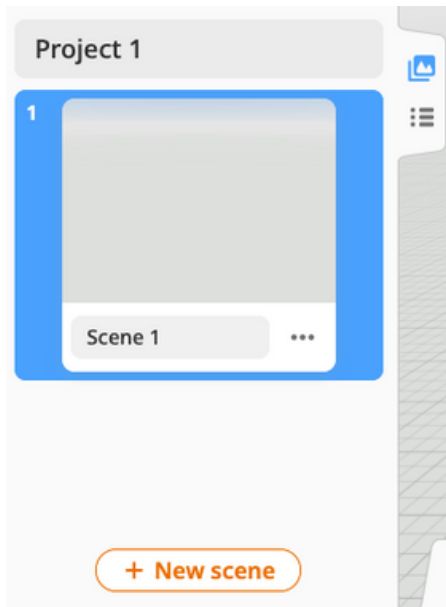
Help Menu - Provides access to tutorials, the Delightex Edu forum, and other resources.

Share - Allows you to share your Project with others. For student accounts, sharing needs to be turned on. Once a Project is shared, this menu will allow you to update your shared Projects, edit your sharing details, view your Projects, access sharing options, and stop sharing.

Code - Opens the built-in coding tool which offers access to CoBlocks, Scripting, and Python.

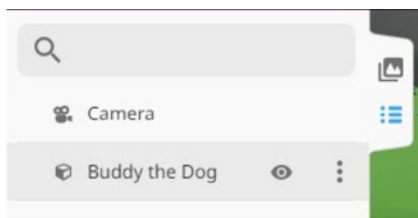
Play - Will take you into play mode to explore your Project. Depending on the mobile device you are using you may also have the options to view in virtual or augmented reality.





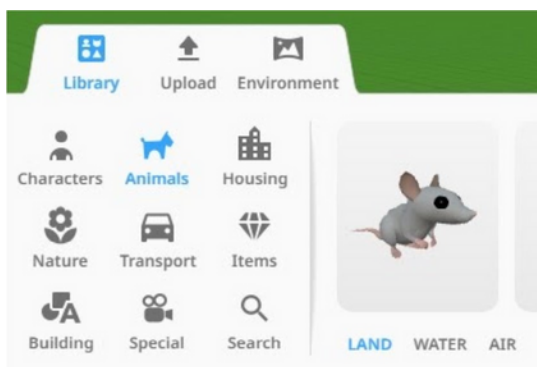
Scene Menu

A Project can have multiple scenes. You can rename each scene and rearrange the scenes by clicking and dragging them up and down. You can also add a new scene by clicking the orange button at the bottom of the menu.



Object Hierarchy

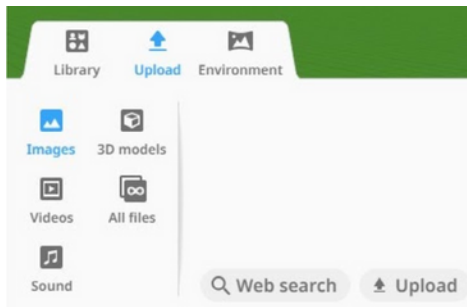
Provides a list of all the objects in your Project. You can select an object from the list by clicking on it; this will reveal its location in the 3D workspace. You can hide or reveal the object by clicking on the eye icon. You can open the object's edit menu by clicking on the "3 dots".



Object Library

This is where you will find all the pre-made 3D objects by the Delightex Edu Team. The object library is organized into categories. Each category also has its own sub-categories. For example, the "Animal" category has the sub-categories: land, water, and air. To add an object to your 3D workspace, simply click and drag it up.



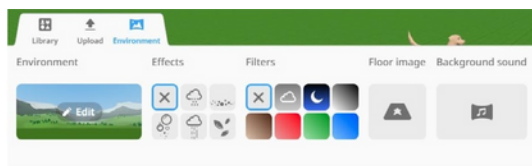


Upload Library

The upload library allows you to upload your own media files. You can upload your own images or use the built-in web search. You can upload your own 3D models, video files, and sound files. You can also use the built-in audio recorder.

Allowed File Types

Images = .jpg, .png, .gif, .svg, .bmp
 Videos = .mp4 3D models = .obj +
 .mtl, .fbx, .zip Sound = .mp3, .wav,
 .aac, .m4a



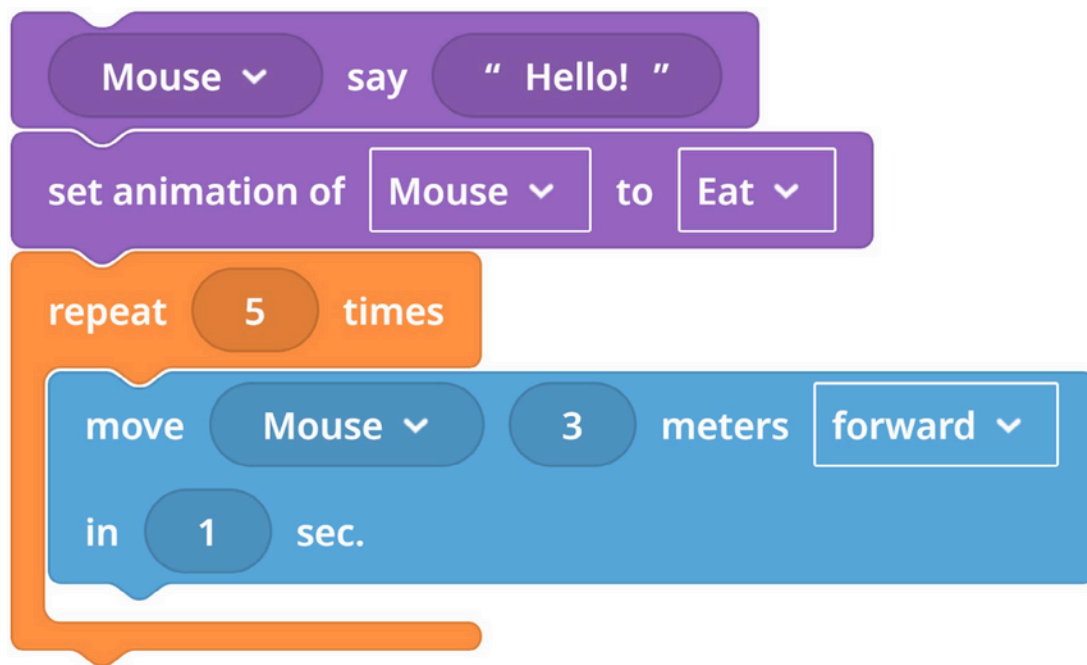
Environment Options

You can add certain environmental effects to your Project scene. There are “effects” such as rain and bubbles. There are filters such as day and night. You can upload a “floor image” that will be placed on the floor grid in the 3D workspace. You can upload a sound file to play as your background sound for the scene.

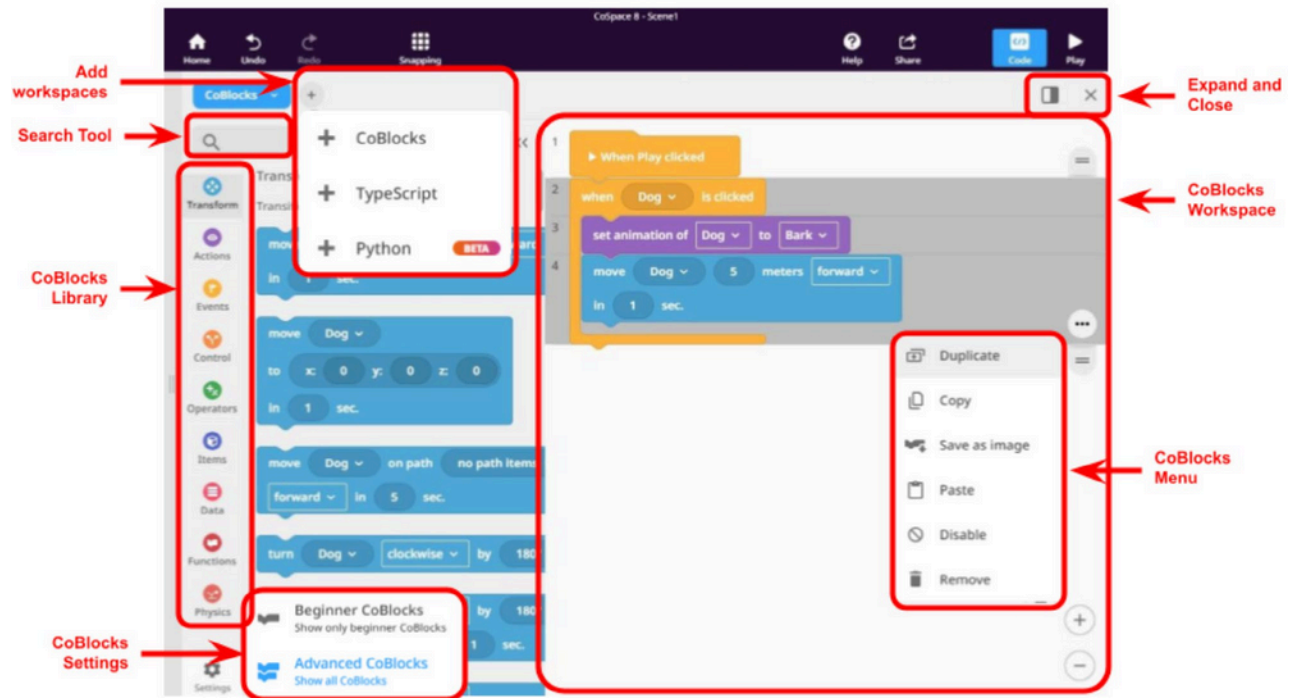


What are CoBlocks?

CoBlocks are a visual, block-based, drag-and-drop programming tool built directly into Delightex Edu. CoBlocks are similar to Scratch and Code.org, which also use block-based programming. CoBlocks adds a greater level of fun and engagement for creators because it allows them to program movement and interactive elements into their creations.



Working with CoBlocks



Add workspaces - Add more CoBlocks workspaces to help organize your programs.

Search Tool - Find a specific CoBlock by using keywords.

CoBlocks Library - CoBlocks are organized into categories by type and color.

CoBlocks Settings - Beginner and Advanced determines how many CoBlocks you have access to in the library.

Expand and Close - Expand the CoBlocks tool to fullscreen or half screen. Use the X to close the CoBlocks tool.

CoBlocks Workspace - Drag a CoBlock from the library into this space and "snap" it to another CoBlock to create your program.

CoBlocks Menu - Click on the "3 dots" button to access a CoBlock's menu. You can also highlight more than one CoBlock together. The menu includes:

Duplicate = copies and pastes the selected CoBlocks.

Copy = saves a copy of the selected CoBlock to your clipboard.

Save as Image = download an image file of the selected CoBlocks.

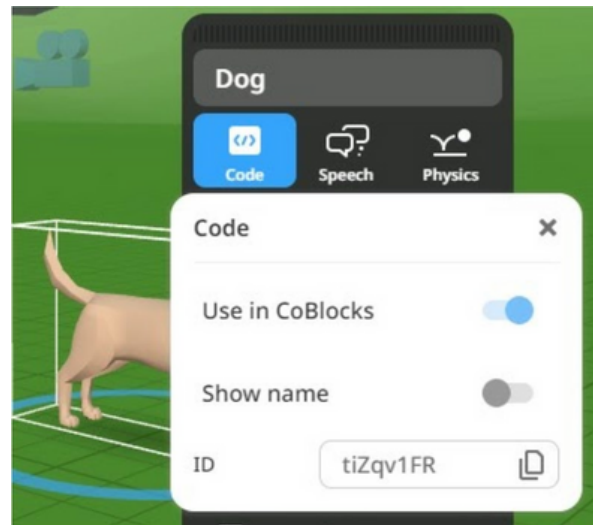
Disable = turns off the CoBlocks without removing them.

Remove = delete the CoBlocks from the workspace.



“Use in CoBlocks” Setting

The most important thing to remember about CoBlocks is the “**Use in CoBlocks**” setting. This setting can be found by double clicking an object to access its menu and then choosing “**Code**”. In order to be able to program an object in CoBlocks, you must first turn on this setting for the object.



If you are trying to select an object in the CoBlocks item menu and it is not available, it is most likely due to the fact that you forgot to turn on the object’s “**Use in CoBlocks**” setting.



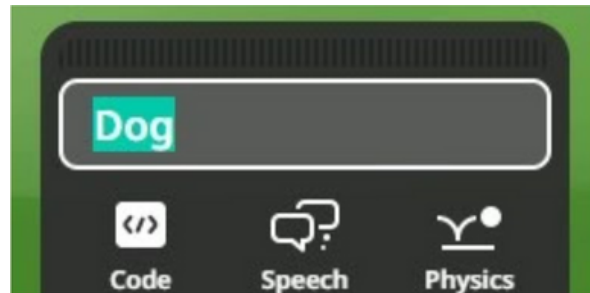
The object will appear in the CoBlocks item menu after the “**Use in CoBlocks**” setting is turned on.



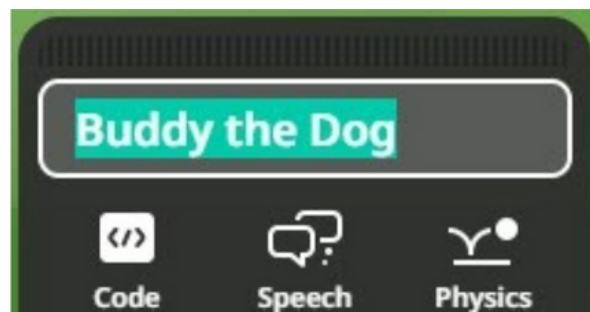
Naming Objects

It is also very important to name your objects appropriately when you are programming them in CoBlocks. This is a strategy that programmers use to help stay organized.

Every object in a Project has a default name. You can double click the object in your 3D workspace to access it's object menu. The top of the menu contains a text box where you can view and edit the object's name.

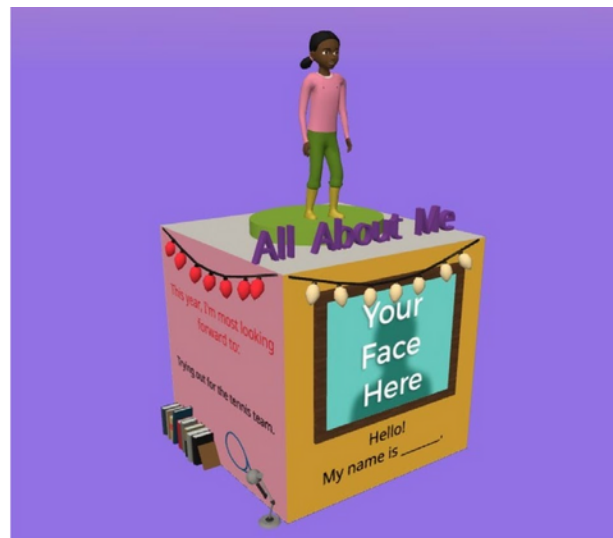


It might be even more helpful to give an object a specific name. Especially if you plan to program multiple similar objects.



Project #1: All About Me Merge Cube

For our first Project, we will create an augmented reality “All About Me” experience using Delightex Edu and the MERGE Cube.



New CoBlocks Used

Character ▾ say " Hello! My n... " for 5 seconds

From Actions

Causes the object to have a visible speech bubble that shows a message for a specific amount of time, then the speech bubble disappears.

set animation of Character ▾ to Wave ▾

From Actions

Causes the object to perform a specific animation. The animation will continue to play the entire time.

when Animal Panel ▾ is clicked

From Events

When the object is clicked (computer) or tapped (mobile) the blocks within it will run.

set text of Animal Panel ▾ to " Sloth "

From Actions

This will change the visible text of a text box, text panel, or 3D text to the text typed into this CoBlock.



Phase 1: Setup and access the Delightex Edu Assignment

In this first phase we will begin by having the teacher remix a template and setting up the copy as a Delightex Edu assignment. Then we will show students how to access their Delightex Edu assignment.

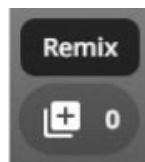
(Teacher) New Class Assignment. Use the template to create a new Delightex Edu class assignment.

Click on the **Share Code button** and enter the share code you see on the right side.



= SHARE CODE BUTTON

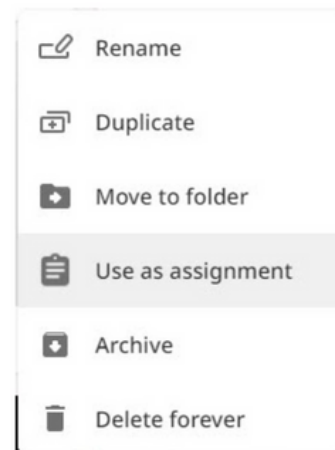
Click on the **Remix button** to make your own copy of the Project template.



= REMIX BUTTON

Go to your **Projects** dashboard, locate your remixed Project, and click on the "3 dots" menu. Choose **Use as Assignment** to set up the template as an assignment for your class.

SHARE CODE: W E Z J E E

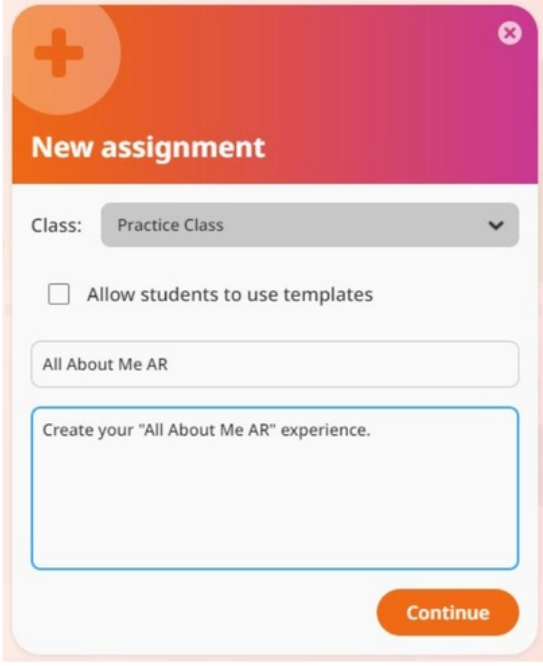


Set up the new assignment by selecting the class, giving the assignment a title, and including instructions. Then click **Continue**.



Project #1: ALL ABOUT ME MERGE CUBE

Choose Individual students so that each student receives their own copy of the Project template.

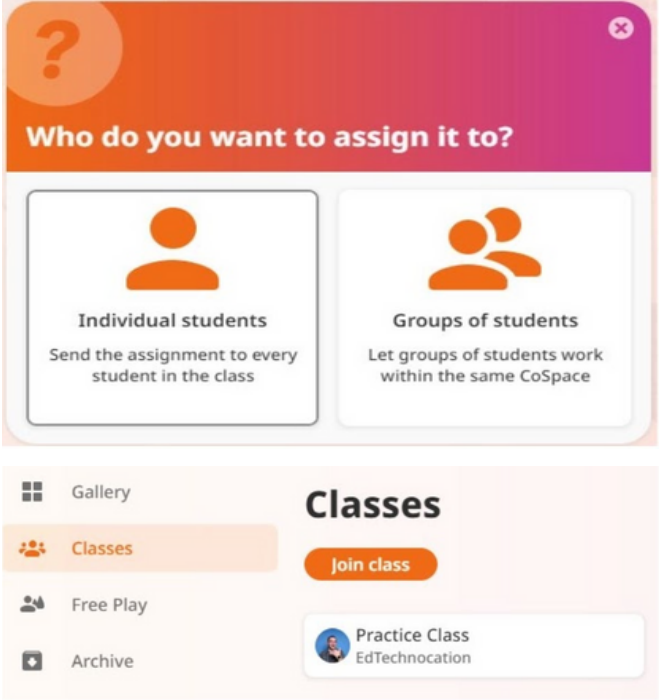


The screenshot shows a 'New assignment' form with a red header bar containing a plus icon and a close button. The title 'New assignment' is in white. Below the header, there is a 'Class:' dropdown menu set to 'Practice Class'. A checkbox labeled 'Allow students to use templates' is unchecked. Below this is a text input field containing 'All About Me AR'. A larger text area below the input field contains the text 'Create your "All About Me AR" experience.' At the bottom right of the form is an orange 'Continue' button.

(Students) Access your assignment.

Go to your **Classes** dashboard in your Delightex Edu account. Click on your class to open it up.

Click on your assignment Project to open it up.



The screenshot shows a 'Who do you want to assign it to?' screen with a red header bar containing a question mark icon and a close button. Below the header, there are two large buttons: 'Individual students' with a single person icon and the text 'Send the assignment to every student in the class', and 'Groups of students' with a group of people icon and the text 'Let groups of students work within the same CoSpace'. At the bottom, there is a 'Classes' section with a 'Join class' button and a list of classes, including 'Practice Class' by 'EdTechnocation'.

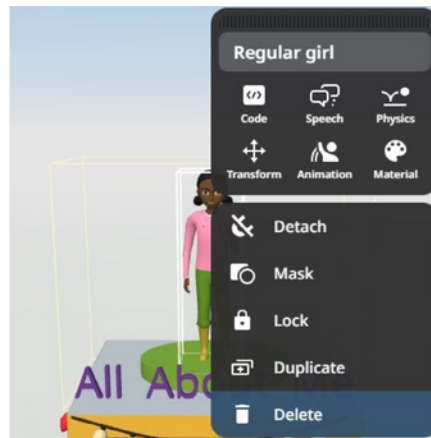


Phase 2: Choosing a Character

In the second phase, students will begin their Project by replacing the character in the template with one that more closely resembles themselves. They will customize the character to change its skin tone, eyes, and clothing colors. They will also create their first CoBlocks program to animate their character.

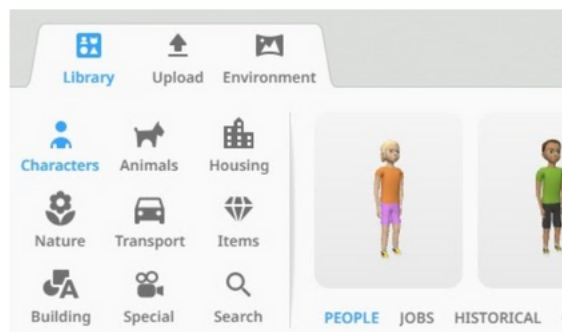
Choose a Character.

First, double click on the girl character and choose delete to remove it from the space.

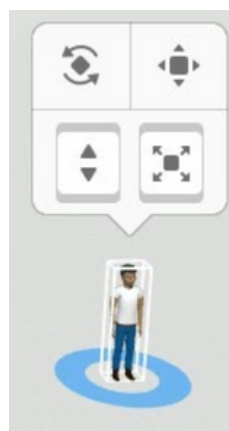


Go to the **Library** and open the **Characters** sub-menu. Look for a character that closely resembles you. Drag a character object into the 3D workspace.

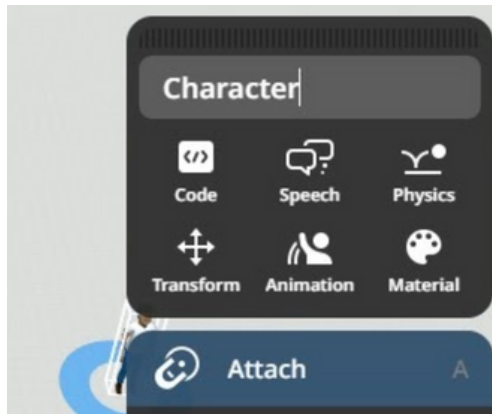
You will be able to change the color of the shirt, pants/skirt/dress, skin, eyes, and hair later on.



Click once on the character object to open its manipulation menu. Click and drag up on the bottom right option to scale your character up (make it bigger).



Project #1: ALL ABOUT ME MERGE CUBE



Double click on the character object to open it's edit menu. First, rename the object to "Character". Then click on the **Attach** option.



When you click **Attach** the workspace will reveal small blue dots. These are attach points for the character object. Click on the blue attach point in the center of the green platform.



The character will automatically move to that attach point and will become grouped with the green platform.

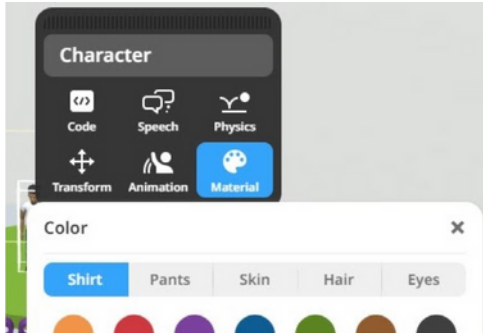


Double click on the character and choose the **Code** option. Turn on the switch for **Use in CoBlocks**.

This will allow us to program the character to animate a little later.



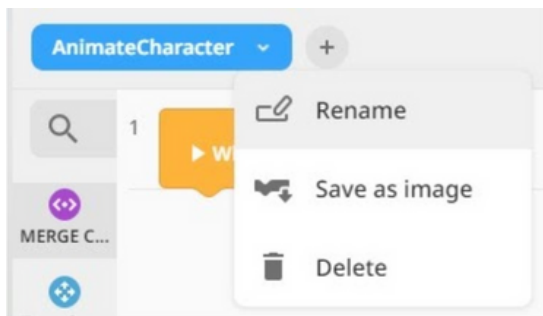
Project #1: ALL ABOUT ME MERGE CUBE



Stay in the character object's edit menu and choose the **Material** option. Choose your different color options to customize your character so that it more closely resembles you.



Click on the **Code** button in the top right corner of the screen.



Click on the drop down arrow inside the box that says "CoBlocks". Choose **Rename** to change the name of the CoBlocks workspace to "**AnimateCharacter**".

CoBlocks Tip: Renaming your CoBlocks workspace helps you to stay organized and to remember the purpose of that program.

Find the **Say** block and the **Set animation** block in the **Actions** CoBlocks menu. Drag them in underneath the yellow **When Play clicked** block.



First set up the **Say** block. Choose Character from the first drop down menu inside the block. Then type the message you want your character to say in the second space. Last, choose the amount of seconds you want the message to appear for.

Then set up the **Set animation** block. Choose **Character** from the first drop down menu inside the block. Then choose an animation from the second drop down menu.

TEST IT OUT! Click on the **Play** button in the top right corner of the screen. Check for the following:

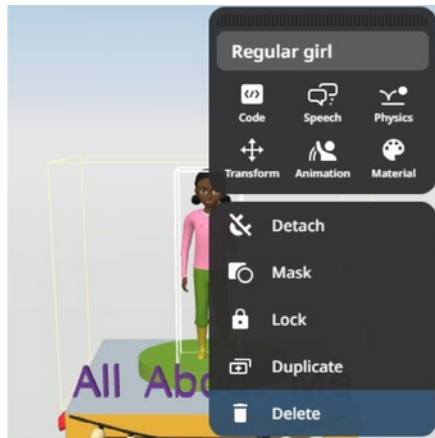
1. Does your character say your message?
2. Does the message disappear after the desired number of seconds?
3. Does the character play and repeat it's animation?

CoBlocks Tips: Programmers constantly test their program to make sure things work the way they expect them to. You can do this by playing your Project often and observing what happens.



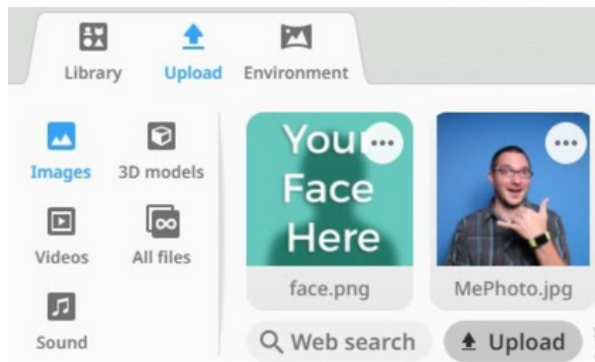
Phase 3: Side 1: Photo and Text

In this phase students are making changes to side 1, which includes a photo of themselves and a text box with a message and their name. They will learn how to insert a photo into their 3D workspace and edit a text box.



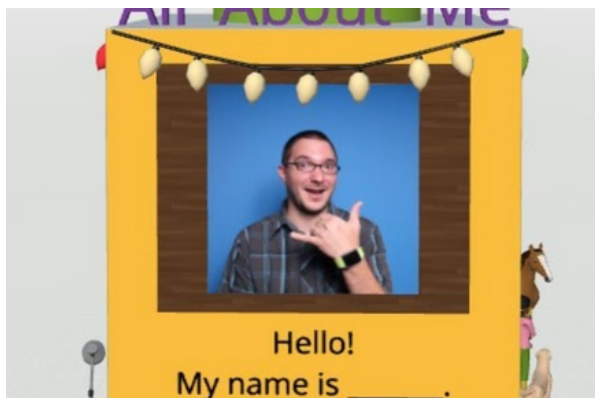
Double click on the **Your Face Here** image on the front side of the cube.

Delete the image.



Have a selfie photo ready to use on your device for the next step!

Open the **Upload** menu and choose **Images**. Click on the Upload button to choose a photo of yourself from your device.



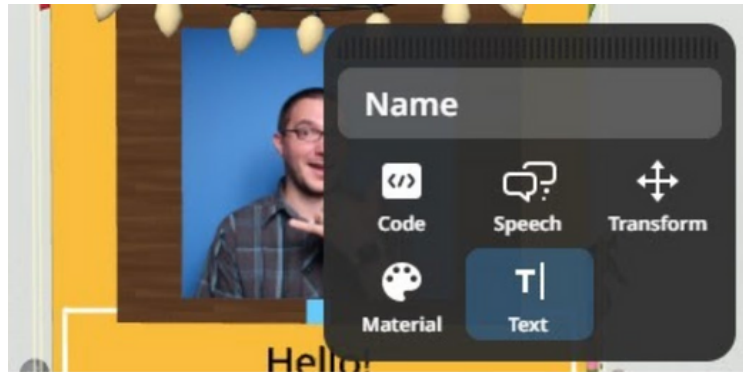
Once the photo has finished uploading, drag it into your 3D workspace. Then use the **Attach** option to attach the photo to the wooden panel and **resize** the image to fill the wooden panel.

Revisit Phase 1 to review how to resize and attach objects.

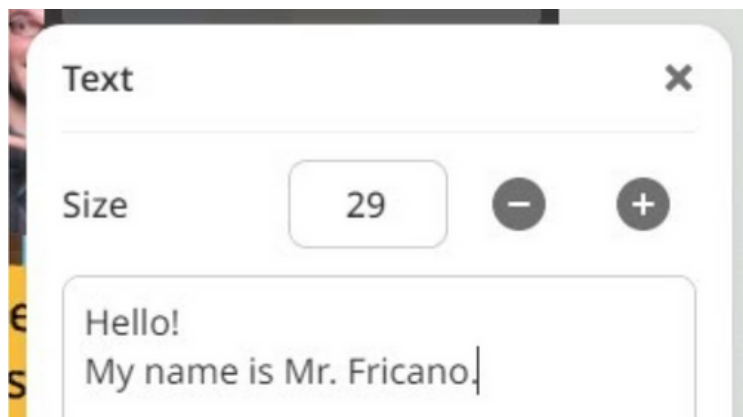


Project #1: ALL ABOUT ME MERGE CUBE

Double click on the **Hello!** text below your photo to open it's edit menu. This is a text box that you can edit! Click on the **Text** option in the menu.



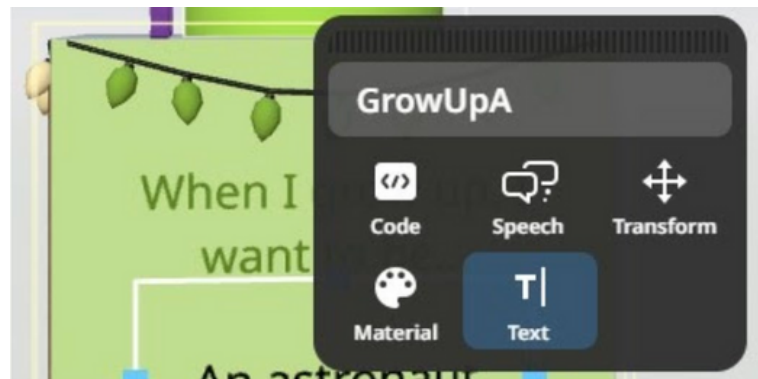
Then edit the text by changing the _____ to your name.



Phase 4: Side 2: When I grow up...

In this phase students will make changes to side 2 which focuses on their desired future career. They will edit the text box on side 2 and add objects to match the career.

Double click on the A vet text box to open it's edit menu. Choose the Text option and change the text to a career of your choice.



Use the object Library to replace the objects along the bottom of this side of the cube to match your desired career.

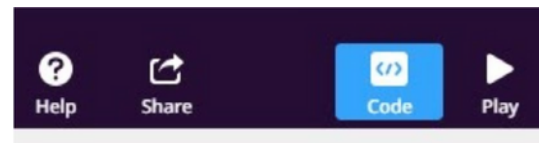


Phase 5: Side 3: My favorites

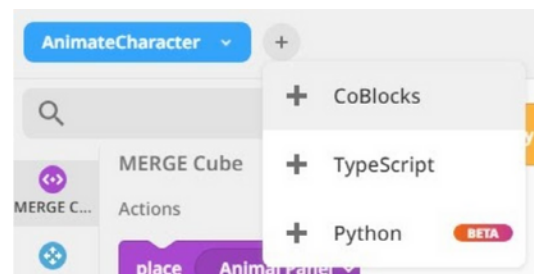
In this phase students will make changes to side 3 which reveals three of their favorite things. They will create a CoBlocks program that will reveal the hidden answer for each favorite category. They will also learn how they can use the image search feature to find images that relate to their favorite things.

For this side of the cube we will create a program so that when the viewer clicks/taps on the “???” of each favorite category the answer will be revealed!

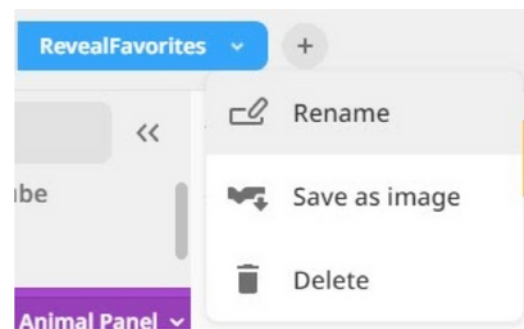
Click on the **Code** button in the top right corner of the screen.



Click on the + next to your **AnimateCharacter** box to create a new CoBlocks workspace.

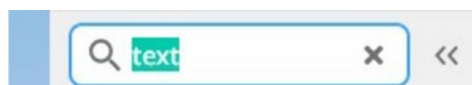
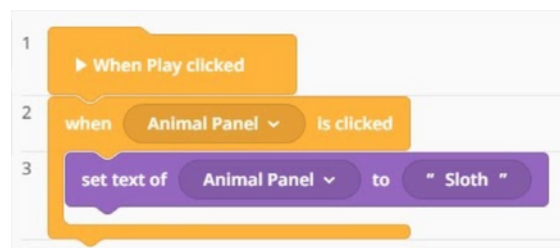


Rename the new CoBlocks workspace to **“RevealFavorites”**.



Create the CoBlocks program by using the **Events** block **“When (object) is clicked”** and the **Action** block **“set text of”**.

CoBlocks Tip: Use the CoBlocks search box to quickly find a block. Type in a keyword to search for a block.



Project #1: ALL ABOUT ME MERGE CUBE

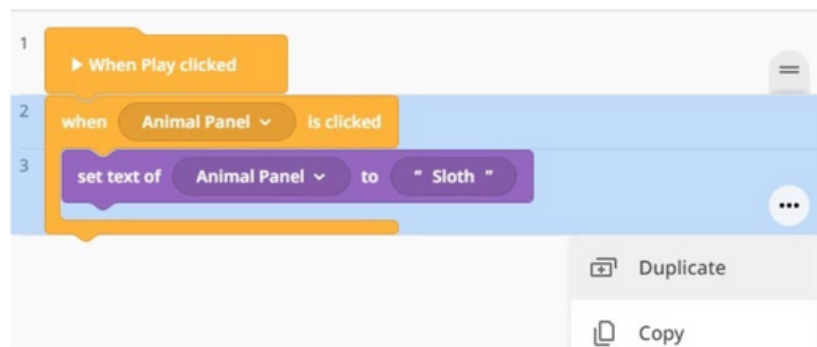
Choose **Animal Panel** from the drop down menu in the “**When (object) is clicked**” block.

For the “**set text of**” block choose **Animal Panel** from the drop down menu and type in your favorite animal into the text space.

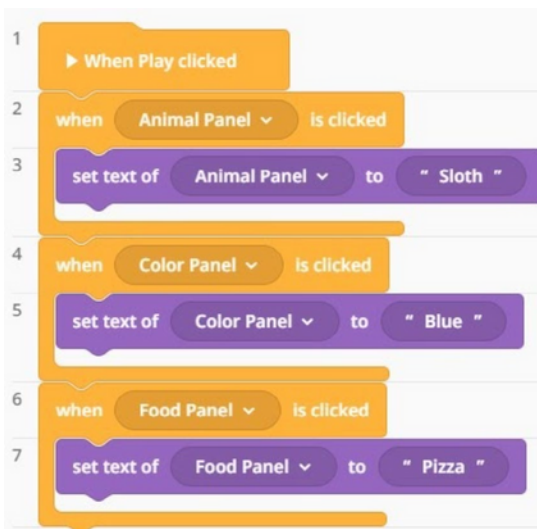
If you plan on using the same types of CoBlocks, you can easily **duplicate** the ones you already created.

Click on the open white space next to the “**When (object) is clicked**” block. This will highlight both blocks in blue.

Then click on the “3 dots” button and choose the **Duplicate** option. Do this twice to create two more sets of CoBlocks.



Then edit the new CoBlocks for the **Color Panel** and your color answer and the **Food Panel** and your food answer.



TEST IT OUT!

Click on the **Play** button in the top right corner of the screen. Check for the following:

When you tap on each “???” does it change to the desired answer?

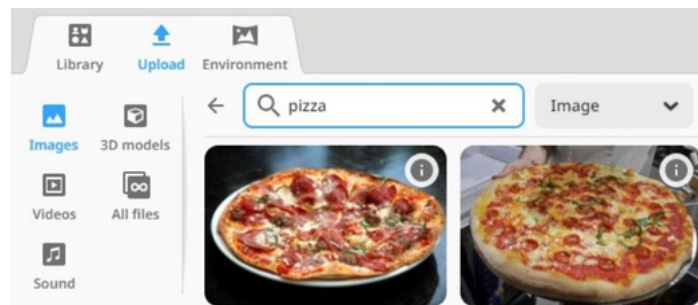


Project #1: ALL ABOUT ME MERGE CUBE

If you can find objects in the **Library** that match your favorite choices then you can search for images instead!

Open the **Upload** menu and choose **Images**. Then use the search box to find an appropriate picture (or gif!).

Drag the selected image into the 3D workspace to use it in your Project.



TEST IT OUT! Click on the **Play** button in the top right corner of the screen. Check for the following: Are the placements of the objects and images to your liking? Do they block the view of anything else in the Project?



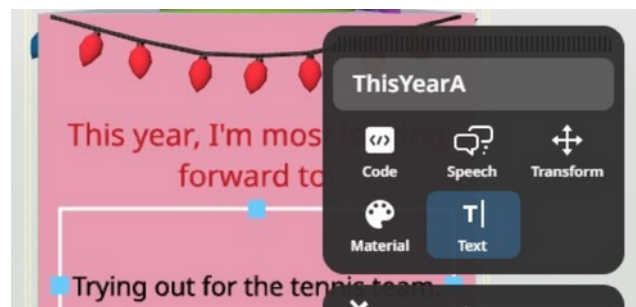
Phase 6: Side 4: I'm most looking forward to...

For this phase, students will make changes to side 4 which focuses on something they are looking forward to in the near future. They will edit the text and use objects from the library that relate to their answer.

Double click the text box that currently says ***"Trying out for the tennis team."*** This will open the edit menu.

Choose the **Text** option in the menu.

Change the text to what you are most looking forward to this year.



Use objects from the **Library** or **Upload** images to decorate this side of the cube.

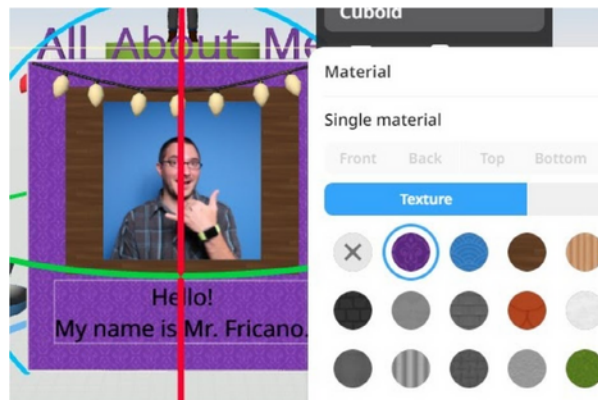


Phase 7: Decorate your cube and extension activities

In this phase students will further decorate their Project by learning how to change the colors of the walls on each side and adding other objects around the cube. There are also some suggestions for extension activities for students that finish early or need a challenge.

Decorate your cube by making changes to the walls on each side of the cube.

Double click on the large wall object on one side of the cube. Open its **Material** option and choose a color or texture.



Further decorate your Project by adding other objects around the cube.

You can add objects like hats and glasses to your character from the **Library > Items** sub-menu. (Use **Attach** to quickly add the item to your character!)

Find other objects to add to your Project from other Library sub-menus.



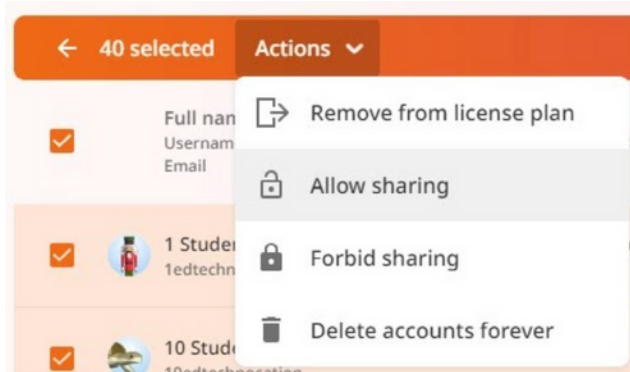
Extension activities for students:

1. Create more CoBlocks programs to animate other objects in the 3D workspace (some objects don't have animations).
2. Create CoBlocks programs to reveal the hidden answer for the other sides of the cube.



Phase 8: Share your Project

In this phase, the teacher will learn how to allow student accounts to share in Delightex Edu. Students will learn how to share their Project with others. They will also learn how they can view their peers' Projects either on a computer or on a mobile device with a Merge Cube.



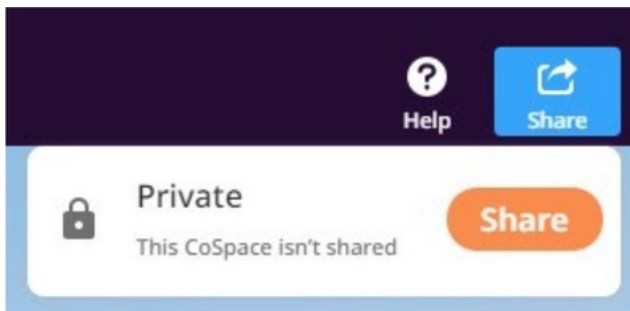
Teachers: before doing this next phase with your students you might need to allow the student accounts to have share permission in Delightex Edu.

In your Delightex Edu teacher account, go to your **Users** screen.

Click on the first checkbox to select all of your students.

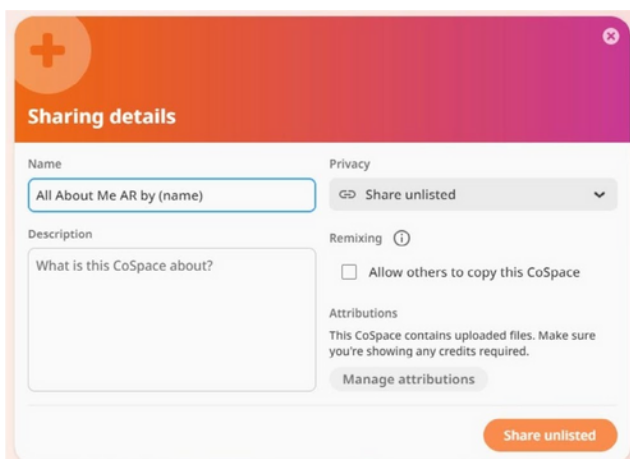
In the Actions drop-down menu, choose **Allow sharing**.

When this setting is turned on, students are only allowed to share their Project as unlisted Projects. They are not able to share to the public Gallery. Only the teacher can share Projects to the public Gallery.



Students:

Click on the **Share** button in the top right corner of the screen. Your Project is set to **Private** by default.



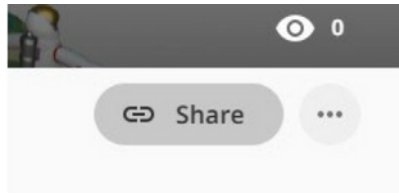
Rename your Project title to **"All About Me AR by (name)"**.

Teachers: an optional setting is to have students check the box for **Remixing**. This will allow you to make a copy of a student's Project if necessary.

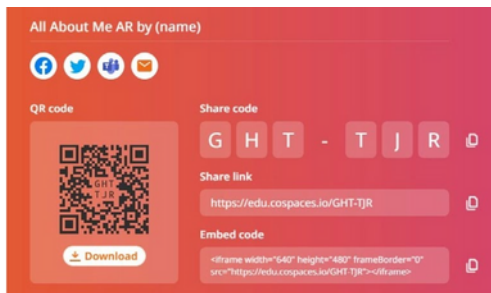
Click on the **Share unlisted** button at the bottom of the box.



Phase 8: Program the seek-and-find objects

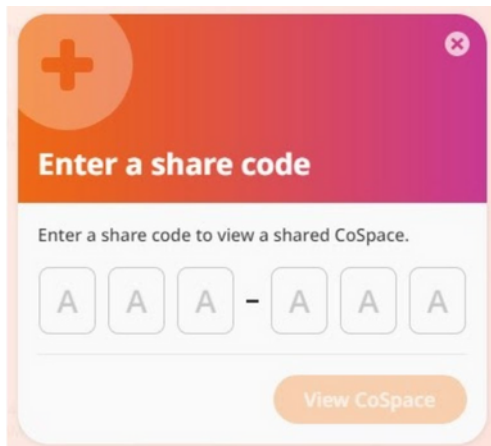


Click on the gray **Share** button on the next screen.



This screen shows you the various options for sharing your Project with others.

Teachers: Decide how you would like to collect student Projects and how you plan to share the student Projects with others. If students are sharing with each other in class, the best way is to collect all of the students' Share Codes on one document, then display all of the students' Share Codes on the board.



There are two ways to view their Projects:

On a computer: Students can use the Share Code or the Share link on their computer to visit another student's Project.

On their Delightex Edu dashboard, they can click on this icon to open the *Share Code* screen.



= SHARE CODE BUTTON



Mobile device and Merge Cube: Students can use the Delightex Edu app on a mobile device and a Merge Cube to view the Project in augmented reality. The Project will display itself on the Merge Cube while the student holds the Merge Cube in their hand! This is the best way to experience this Project!

You can either use a real Merge Cube, which can be purchased online.

Or your students can create a paper merge cube with this free printable version!



Project #2: VR roller coaster

For the second Project, we will create a virtual roller coaster experience. Students will learn how to program the camera to follow a path in the workspace. They will also learn how to manipulate the path to create a twisty, rolling, curvy roller coaster track!

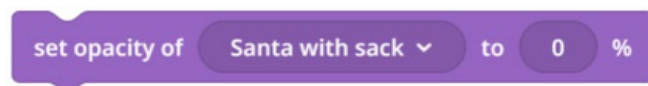


New CoBlocks Used



From Transform

Cause an object to move on a path object. You can set the direction (forward or backward) and the amount of time it will take to complete the path. The amount of time selected and the length of the path will determine the speed at which the object moves.



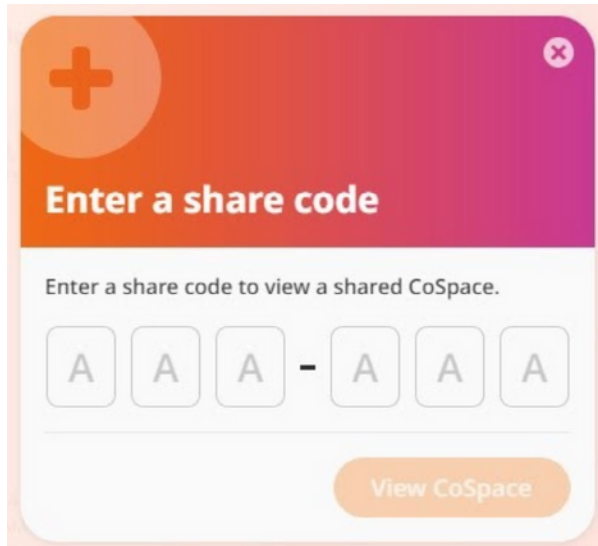
From Actions

Opacity refers to how visible the object is. 100% means the object is completely solid. 0% means the object is completely invisible.



Phase 1: Explore a sample roller coaster

In the first phase, let's explore a sample of a completed rollercoaster Project so that we get a better understanding of what we are trying to accomplish in this Project.



Click on the Share Code button in the top right corner of your Delightex Edu dashboard.



= SHARE CODE BUTTON

Enter the following Share Code to load a sample Roller Coaster Project.

SHARE CODE = **C B V V E F**

Play the virtual roller coaster experience. Notice the following things as you play:

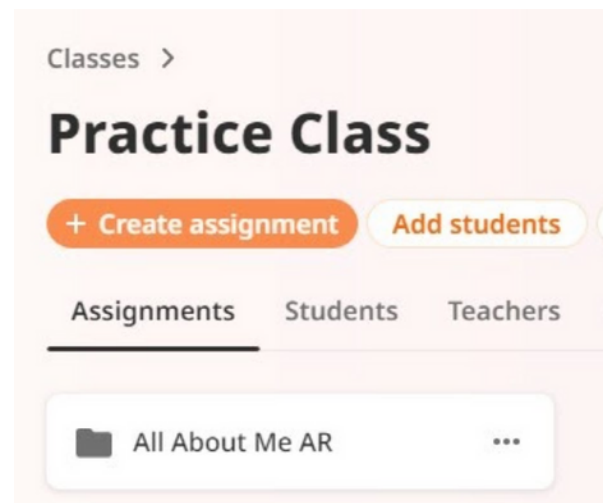
1. How did you start the roller coaster ride?
2. What is the objective of the ride?
3. What happens when you click on a seek-and-find object?
4. What is the setting of the experience?

Phase 2: Create a New Delightex Edu Assignment

In the second phase the teacher will create a new Delightex Edu assignment for students.

(Teacher) Create the Assignment.

Go to the Classes screen in your Delightex Edu account. Click on the class to open it. Then click on the + Create assignment button.



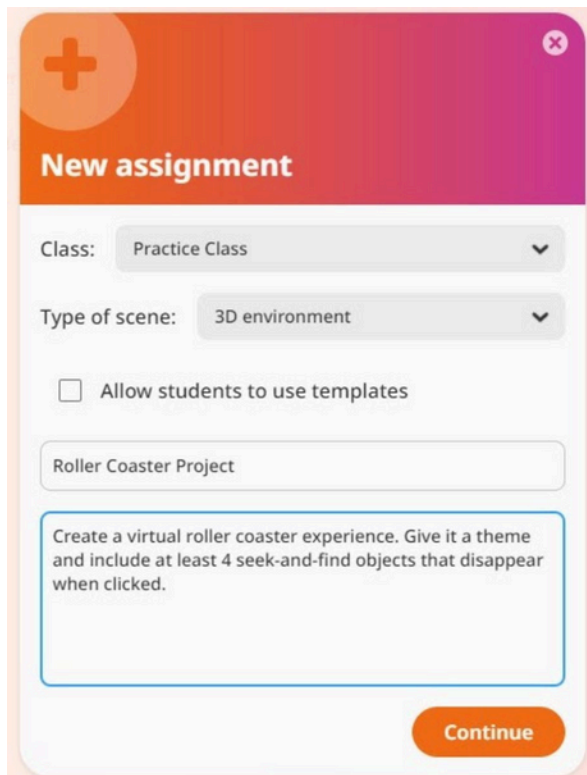
Project #2: VR ROLLER COASTER

Change the **Type of scene** option to “3D environment”.

Give the assignment a title like **“Roller Coaster Project”**.

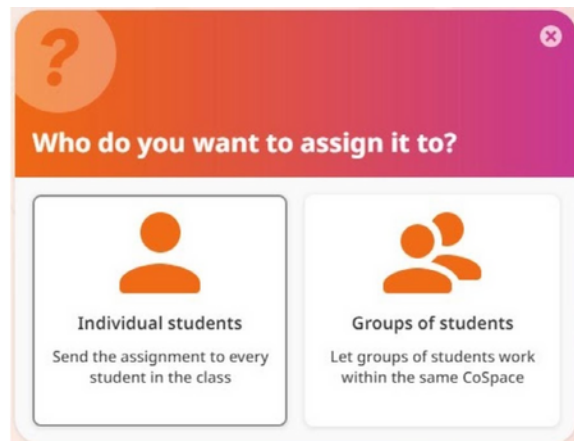
Include some simple instructions and requirements in the large text box.

Click on the **Continue** button when finished.



The screenshot shows the 'New assignment' form. At the top, there's a header with a plus icon and a close button. Below it, the title 'New assignment' is displayed. The form includes a 'Class' dropdown menu set to 'Practice Class', a 'Type of scene' dropdown menu set to '3D environment', and a checkbox for 'Allow students to use templates' which is unchecked. A text input field contains the title 'Roller Coaster Project'. Below this is a large text area with the instruction: 'Create a virtual roller coaster experience. Give it a theme and include at least 4 seek-and-find objects that disappear when clicked.' At the bottom right, there is an orange 'Continue' button.

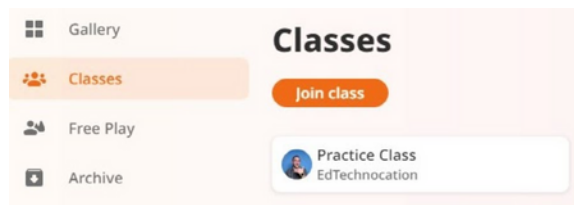
Choose **Individual students**. This will create a copy of the Project assignment for each student.



The screenshot shows a dialog titled 'Who do you want to assign it to?'. It has two options: 'Individual students' with a single person icon and the description 'Send the assignment to every student in the class', and 'Groups of students' with a group of three people icon and the description 'Let groups of students work within the same CoSpace'.

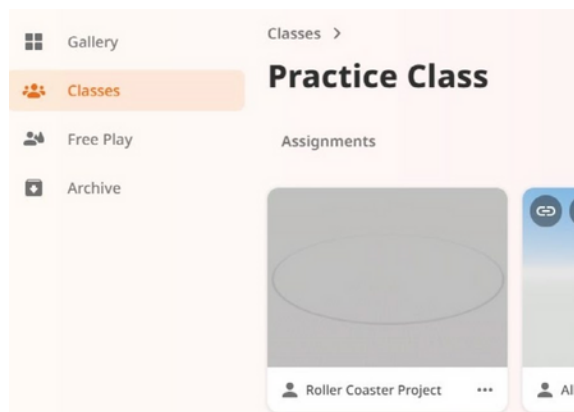
(Students) Access your assignment.

Go to your **Classes** dashboard in your Delightex Edu account. Click on your class to open it up.



The screenshot shows the 'Classes' dashboard. On the left, there's a sidebar with 'Gallery', 'Classes' (selected), 'Free Play', and 'Archive'. The main area shows a 'Join class' button and a card for 'Practice Class' by 'EdTechnocation'.

Click on your Project assignment to open it up.



The screenshot shows the 'Practice Class' dashboard. The sidebar is the same as the previous screenshot. The main area shows the 'Assignments' section with a card for 'Roller Coaster Project' and an 'All' button.



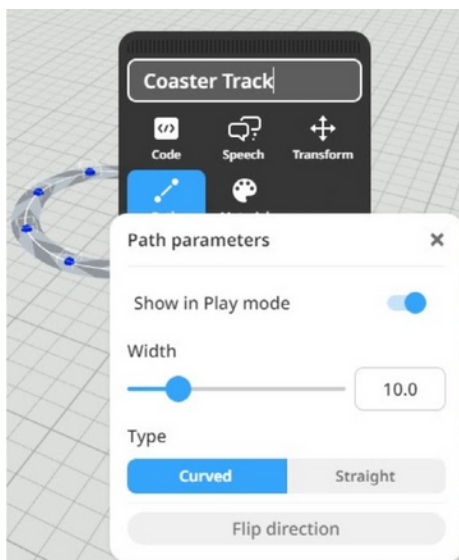
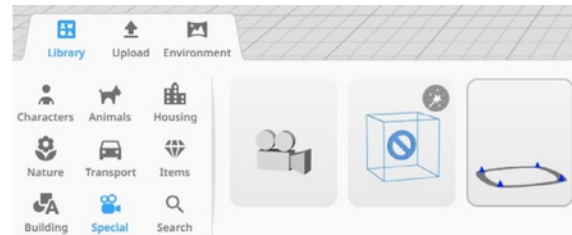
Phase 3: Create a Path

In the third phase you will learn how to create a path object. You will also learn how to manipulate the path object to turn it into a roller coaster track.

Go to the **Library**.

Open the **Special** sub-menu.

Drag in a round path object to your 3D workspace.



Double click on the gray portion of the round path.

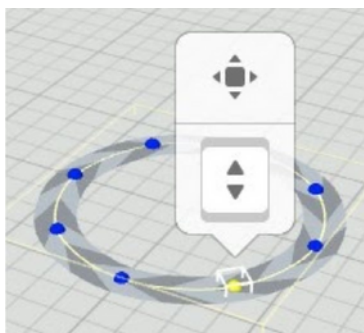
Change the name of the object to **"Coaster Track"**.

Click on the **Path** option in the object menu.

Turn on the switch for **Show in play mode** (this will show the path while the Project is played).

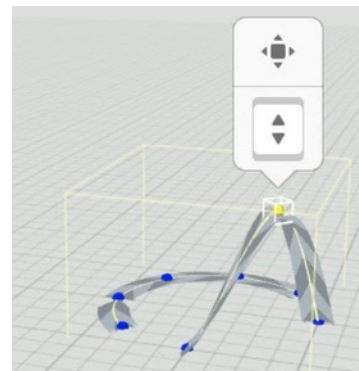
Change the **Width** to "10". You can click inside the text box to manually type in the number.

CoBlocks Tip: Normally when we want to program an object we have to turn on its "Use in CoBlocks" switch. However, a path is automatically turned on when you bring it into your 3D workspace.



A path contains small blue dots called **Path Nodes**. These path nodes can be individually manipulated to reshape the path.

Choose one of the blue nodes on your path. Click the node once to select it.

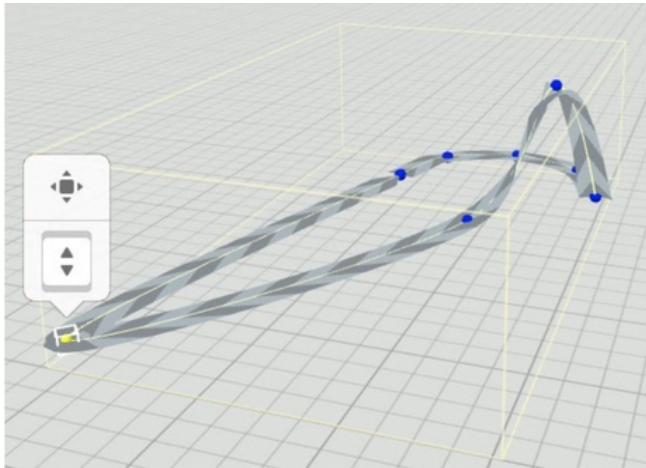


Use the **Elevation Tool** (the up/ down button) to raise and lower the node.

This is how you can create **hills** or **dips** in your roller coaster track!



Project #2: VR ROLLER COASTER

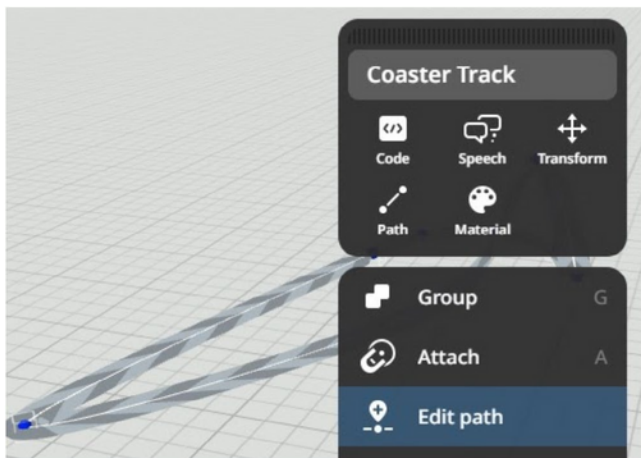


Choose another blue node on your path. Click the node once to select it.

Drag the node away in a different direction to expand your path.

This is how you can create a longer roller coaster track!

Try this with more than one blue path node!



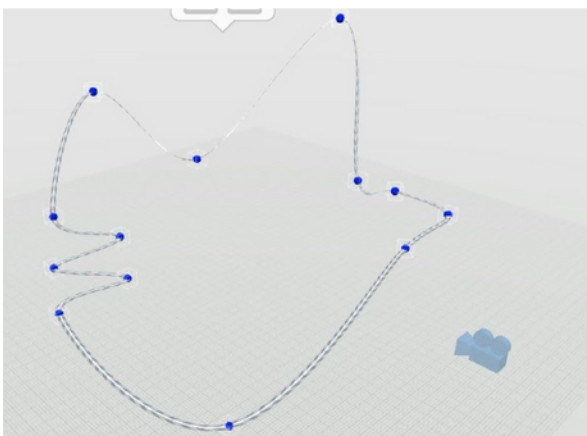
Double click on the gray area of your path to open the path object menu.

Click on the **Edit path** option.

Hover your mouse over your gray path. You will notice a bright blue dot appear on the path. Click on this bright blue dot will add a new blue node to your path.

This is how you can add more nodes to reshape your path even more!

Add a few more nodes to your path. Then manipulate those nodes to either create more hills/dips or stretch your path to make it longer.

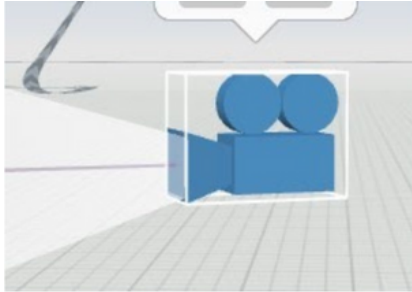


Now that you've learned how a path can be created, design your own so that it becomes your roller coaster track!



Phase 4: Attach Camera to object

In the third phase you will learn how to attach the camera to another object. This will create the illusion that you are riding in a roller coaster cart.

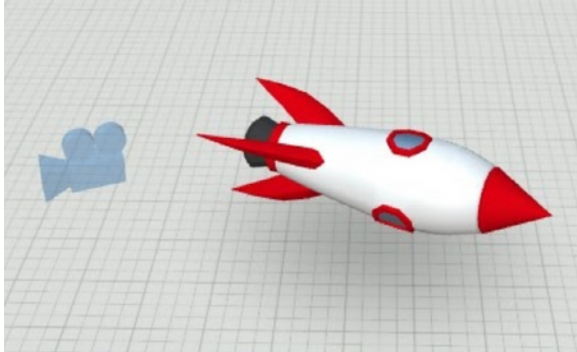


The **Camera** object in Delightex Edu is very important! The camera represents what the player sees when they play your Project. Essentially, the player becomes the camera!

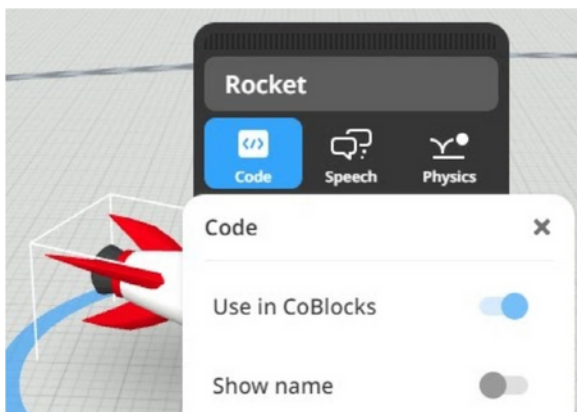


First, choose an object from the **Library** that you would like the player to ride on during the roller coaster experience. The object can be anything you like that fits with your theme!

In the sample Project from Phase 1 you were riding on Santa's sleigh!



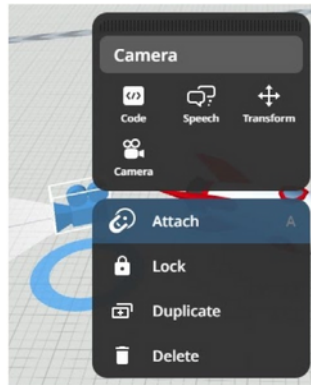
Drag the object from the library into the 3D workspace and position it next to the camera object. We will refer to this object as the **"coaster object"** moving forward.



Double click on your coaster object, go to the **Code** option and turn on the **"Use in CoBlocks"** switch.

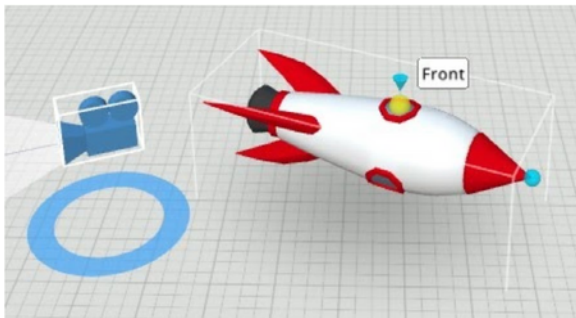


Project #2: VR ROLLER COASTER

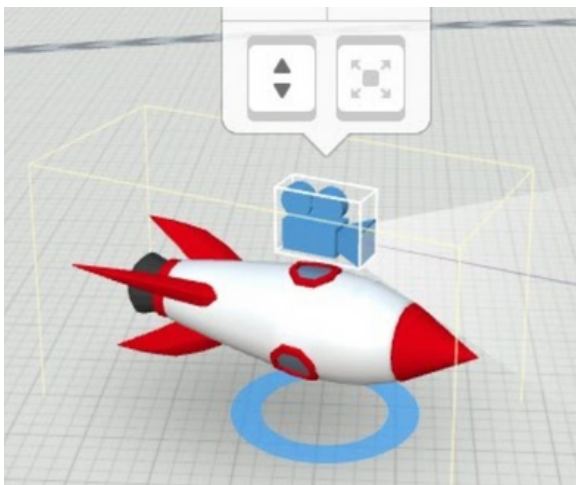


Now we are going to **Attach** the camera to your coaster object.

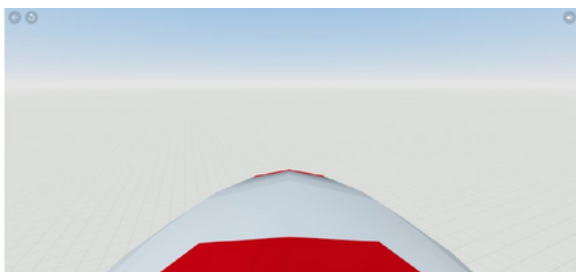
Double click on the **Camera** object and choose the **Attach** option from the object menu.



Choose an appropriate attach point on your coaster object.



You DO NOT want the camera to be inside of the coaster object. If the camera appears to be partially inside of the coaster object use the **elevation tool** (up/down button) to raise the camera out of the coaster object so that it rests just above it.



TEST IT OUT! Press the **Play** button in the top right corner of the screen. Use your mouse to look around in the virtual environment. Check for this:

→ Does it look like you are riding on top of the coaster object?



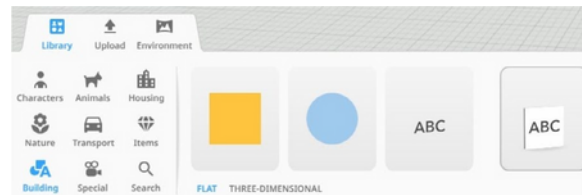
Phase 5: “Start” button

In the fifth phase, you will create a “start” button that will appear on the screen at the beginning of the roller coaster experience.

Open up the **Library**.

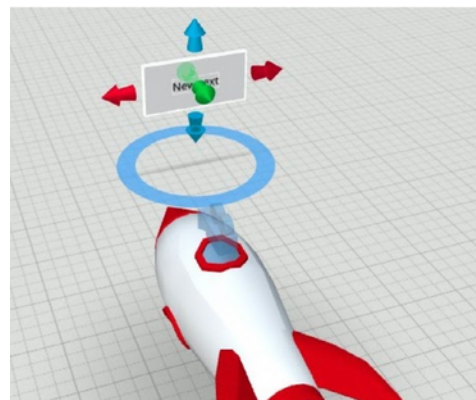
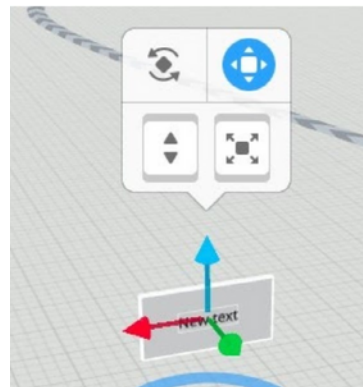
Click on the **Building** sub-menu.

Drag a **Text Panel** object into the 3D workspace.



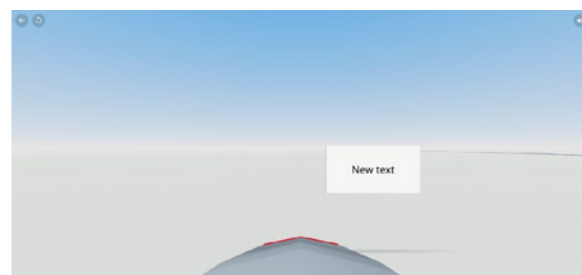
Position the **Text Panel** so that it is in front of the coaster object and the camera.

To make it easier to move the **Text Panel** into position, turn on the **Omni-directional tool**. Then drag the red, green, and blue arrows in both directions to accurately position the text panel in front of the camera.



TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

→ Can you clearly see the play button in front of you as soon as you play the Project?



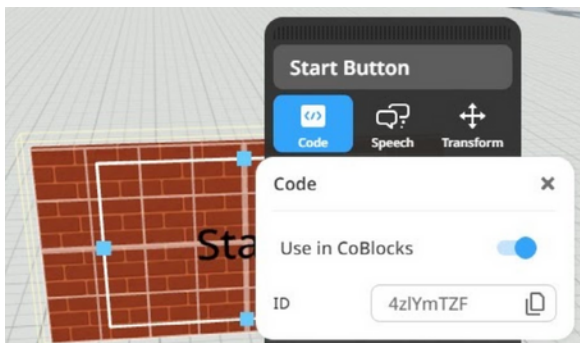
Project #2: VR ROLLER COASTER



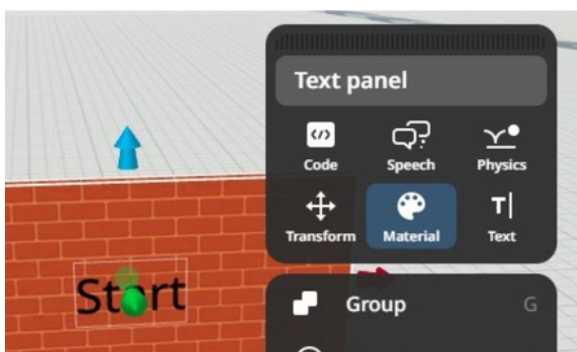
Double click on the **Text** inside the **Text Panel**. Be careful to select the text box and not the white panel!

Change the name of the text box from “New text” to **“Start Button”**.

Click on the **Text** option in the object menu. Change the text to say **“Start”**.



Choose the **Code** option in the object menu for the text box. Turn on the **“Use in CoBlocks”** switch.



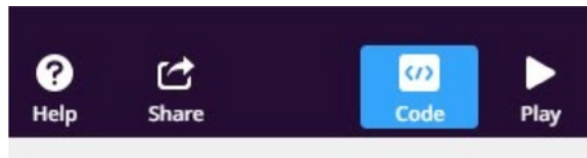
Double click on the white portion of the **Text Panel**.

Choose **Material** from the object menu. Choose a color or texture.



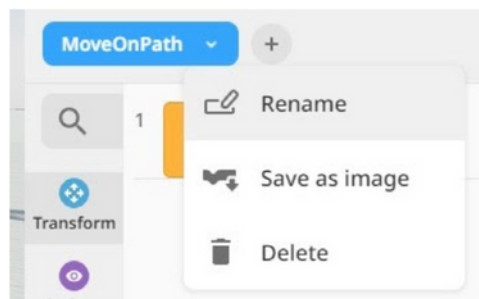
Phase 6: Move object on Path

In phase six you will learn how to create a program that will begin your roller coaster ride when the start button is clicked/tapped.



Click on the **Code** button in the top right corner of the screen.

Choose **CoBlocks** from the menu.



Click on the drop down arrow next to the **"CoBlocks"** box. Rename the CoBlocks workspace to **"MoveOnPath"**.



Find the **"When (object) is clicked"** block from the **Action** CoBlocks menu. Drag it underneath the **"When Play clicked"** block.

Change the object in the drop down menu to "Start Button".

Find the **"Move (object) on path"** block from the **Transform** CoBlocks menu. Drag it inside of the **"When (object) is clicked"** block.

Change the object in the drop down menu to your coaster object and choose **"Coaster Track"** in the second drop down menu box.

Set the amount of seconds to your desired time on the track.

CoBlocks Tip: The speed of your roller is determined by both the amount of seconds in the move CoBlock and how big your path is.

TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

1. Can you click on the Start button?
2. Does the roller coaster begin when you click on the start button?
3. Can you look around while you are riding the roller coaster?
4. Is the roller coaster too slow or too fast?



Phase 7: Seek-and-find objects

In the seventh phase you will choose at least 4 seek-and-find objects to hide along the roller coaster path.

Open the **Library**.

Choose at least 4 different objects from the library and position them somewhere along the roller coaster path.

Make sure to resize each object and raise or lower them so that they are visible during the roller coaster ride.

TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

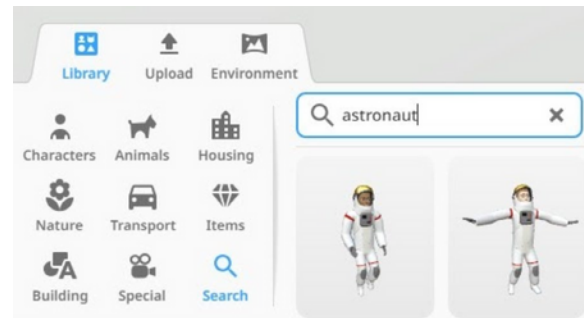
→ Can you see the seek-and-find objects while you are riding on the roller coaster?

Double click on the seek-and-find object to open its object menu.

Give the object an appropriate name.

Click on the **Code** option and turn on the “**Use in CoBlocks**” switch.

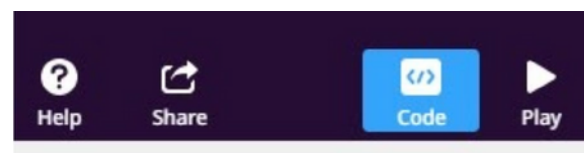
Do this for each seek-and-find object.



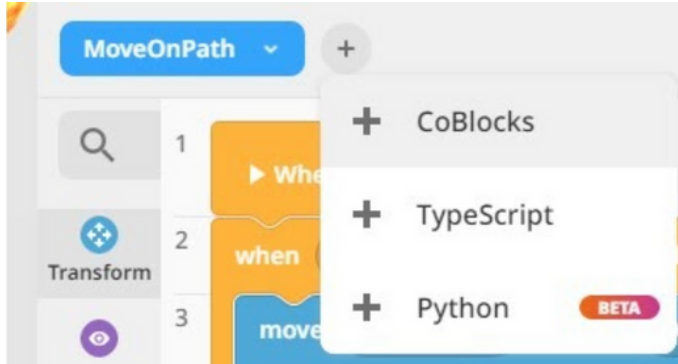
Phase 8: Program the seek-and-find objects

In the eighth phase you will learn how to create a program that will cause each seek-and-find object to disappear when it is found and clicked on during the roller coaster experience.

Click on the **Code** button in the top right corner of the screen.



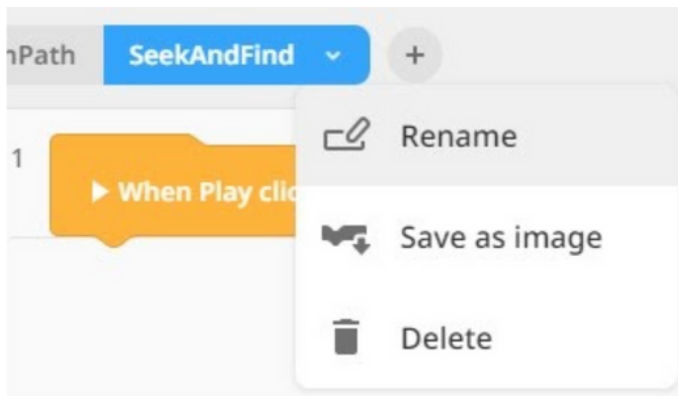
Project #2: VR ROLLER COASTER



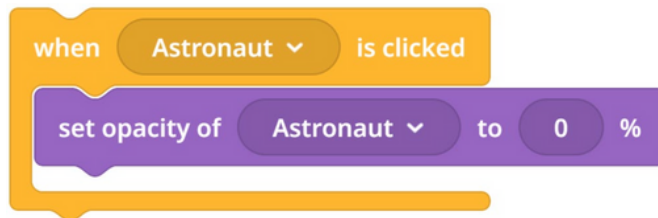
Click on the **Code** button in the top right corner of the screen.

Click on the **+** at the top of the CoBlocks screen.

Choose **+ CoBlocks** from the dropdown menu to add a new CoBlocks workspace.



Click on the dropdown arrow in the new CoBlocks box. Rename the **CoBlocks** workspace to **"SeekAndFind"**.



Find a **"When (object) is clicked"** CoBlock from the **Events** CoBlocks menu. Drag it into the workspace under the **"When Play clicked"** block.

Change the object in the dropdown menu to your first seek-and-find object.

Find a **"set opacity of (object)"** CoBlock from the **Actions** CoBlocks menu. Drag it inside of the **"When (object) is clicked"** CoBlock.

Change the object in the dropdown menu to the same object as in the **"When (object) is clicked"** CoBlock.

Change the number in the percentage box to 0 (zero).

Zero percent means that the object will be completely invisible when it is clicked.



Project #2: VR ROLLER COASTER

Click in the open white space next to the “**When (object) is clicked**” CoBlock. This will highlight both blocks in blue.

Click on the “3 dots” button on the right side of the CoBlocks.

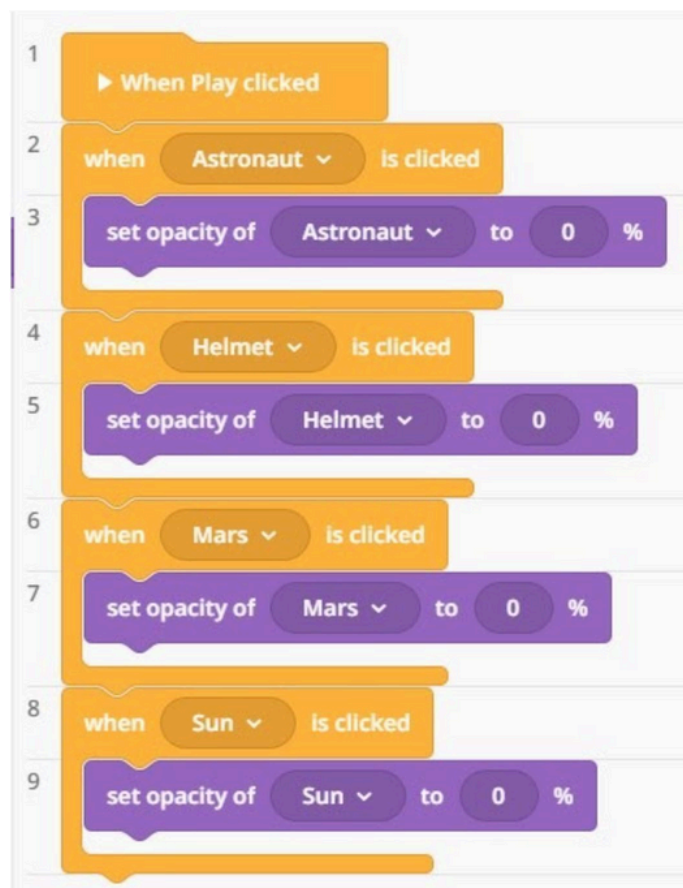
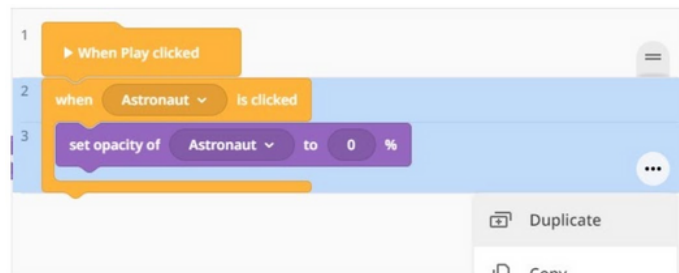
Choose **Duplicate** from the drop down menu.

This will create a new set of the same two blocks. Do this 2 more times so that you have a total of 4 sets of the same blocks.

Change the objects in each set of blocks to match your four different seek-and-find objects.

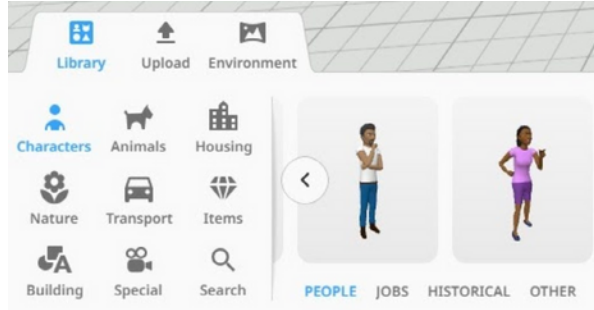
TEST IT OUT! Press the **Play** button in the top right corner of the screen. Then press the **Start** button to begin your roller coaster ride. Check for this:

1. Can you click on each seek-and-find object as you ride past it?
2. Does the seek-and-find object disappear when you click on it?



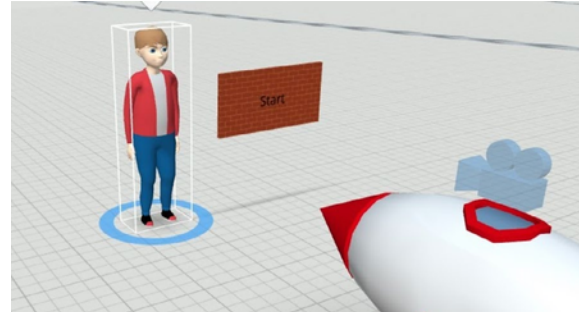
Phase 9: Create a talking character

In the ninth phase you will create a character to introduce the player to the roller coaster. You will also give that character a speech bubble to present a message and a list of seek-and-find objects.



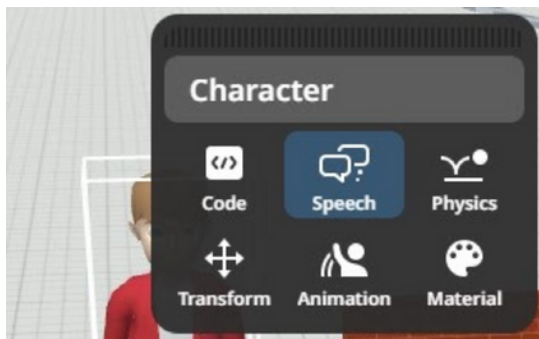
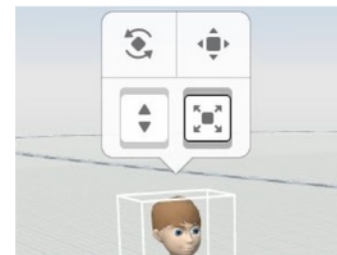
Open the **Library**.

Click on the **Characters** sub-menu.



Choose a character and drag it into the 3D workspace. Position it next to the Start button.

You may need to scale the character object to be bigger. Use the **Resize Tool** to make the character bigger or smaller.



Change the name of the character object to **"Character"**.

Click on the **Speech** option in the object menu.

Type a message in the text box and include instructions on what to do with the seek-and-find objects.

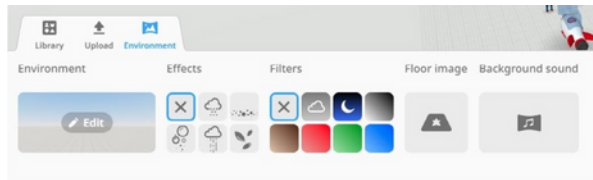
TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

1. Can you clearly see the speech bubble at the start of the experience?
2. Does the speech bubble cover up anything else like the Start button?

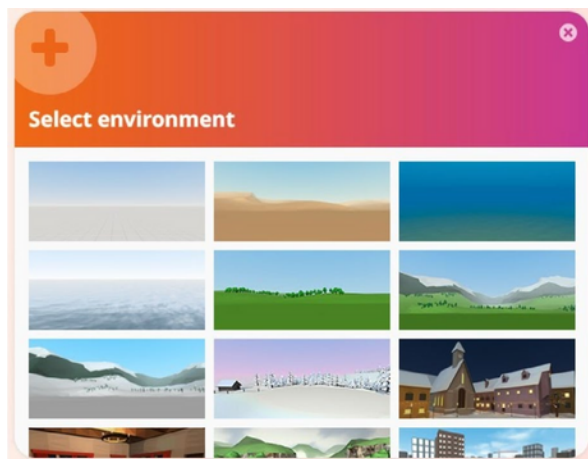


Phase 10: Decorate the Scene

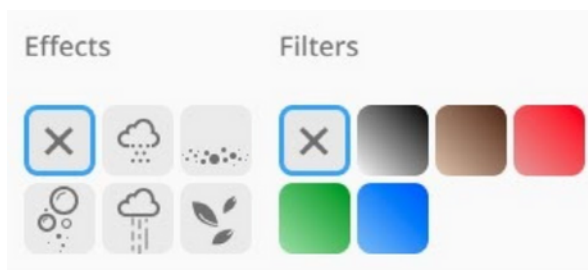
In phase ten you will finish your Project by decorating it with other objects and selecting an environment.



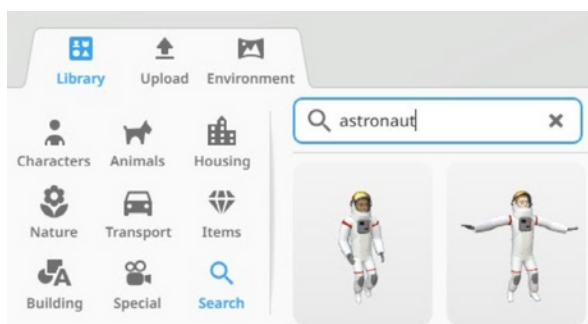
Open the **Environment** menu.



Click on the **Edit** button in the first box. Choose a background environment that matches the theme of your roller coaster.



You can also choose an **Effect** and/or a **Filter**.



Use the **Library** to find other objects to decorate your Project.

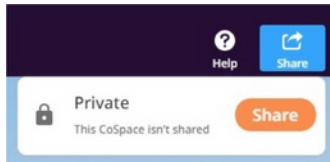
TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

1. Do any objects obstruct the roller coaster path?
2. Do any objects obstruct your seek-and-find objects?

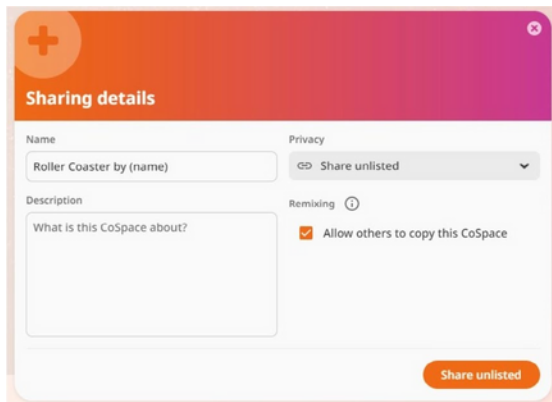


Phase 11: Share your roller coaster

In the eleventh phase students will learn how to share their Project with others. Students will also learn how they can view their peers' Project.



Click on the **Share** button in the top right corner of the screen. Your Project is set to **Private** by default.



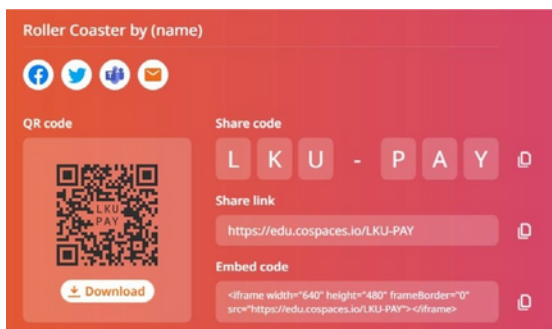
Rename your Project title to **"Roller Coaster by (name)"**.

Teachers: an optional setting is to have students check the box for **Remixing**. This will allow you to make a copy of a student's Project if necessary.

Click on the **Share unlisted** button at the bottom of the box.

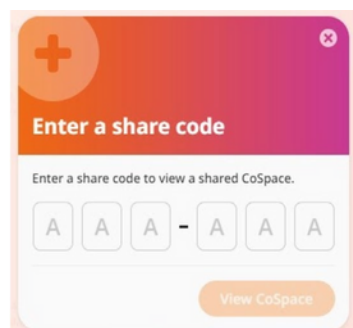


Click on the gray Share button on the next screen.



This screen shows you the various options for sharing your Project with others.

Teachers: Decide how you would like to collect student Projects and how you plan to share the student Projects with others. If students are sharing with each other in class, the best way is to collect all of the students' Share Codes on one document, then display all of the students' Share Codes on the board.



On their Delightex Edu dashboard they can click on this icon to open the Share Code screen.



SHARE CODE BUTTON

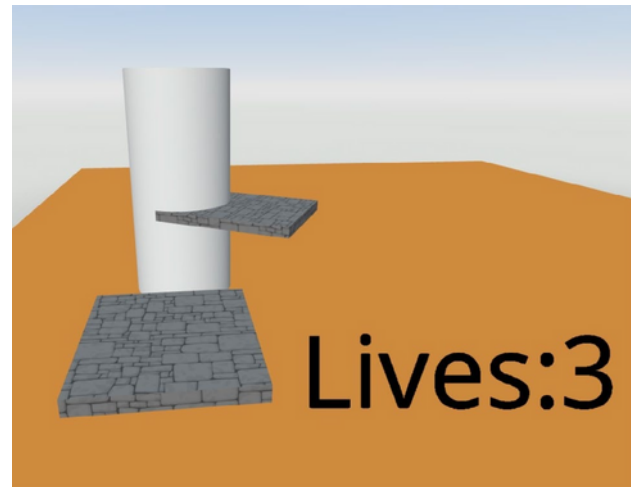
Type in the Share Code of a peer's Project and click on the **View Project** button.

Press the **Play** button to play the roller coaster experience.

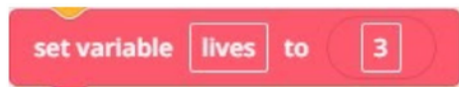


Project #3: Floor is Lava game

In Project three you will learn how to create a “Floor is Lava” game. The game requires the player to leap from one platform to another. If they fall in the “lava” they will lose a life and will be reset back to the beginning of the game.

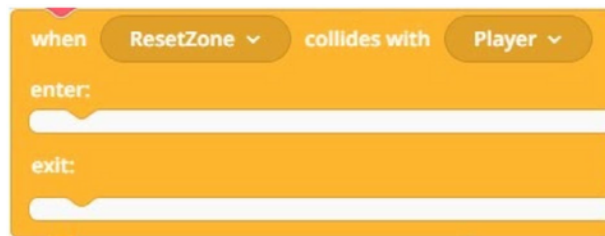


New CoBlocks Used



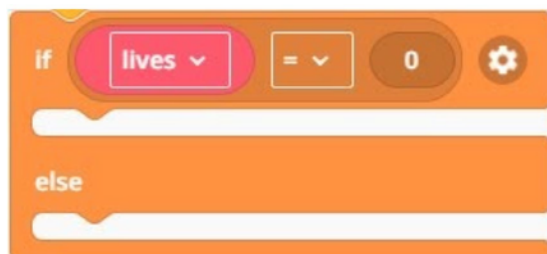
From Data

Creates a variable with a name and assigns it a value.



From Events

When two objects collide (touch) each other the CoBlocks within the enter space will activate. CoBlocks in the exit space will activate when they stop colliding with each other.



From Control

Creates an *If Else* statement so that, in this Project, if the variable “lives” equals zero then the CoBlocks in the first space will activate. If the variable “lives” does not equal zero then the CoBlocks in the else space will activate.

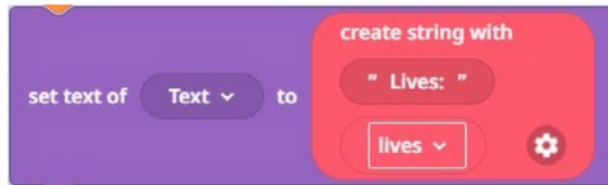


From Control

The Project will end and the player will be sent back to the initial play screen.



New CoBlocks Used

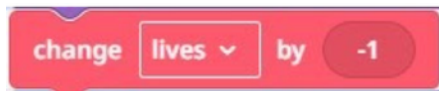


(set text) From Actions

Will change the text of a text object (text box, text panel, or 3D text).

(create string) From Data

Creates a string of text that includes the word "Lives:" and the variable "lives" which will display the total number of lives remaining for the player.



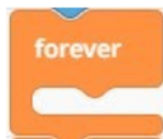
From Data

Changes a variable by the number designated in the second box. The number in the second box can be a positive or negative number, which would add or subtract that amount from the variable.



From Transform

Will move the position of an object in the first box to a different position in relation to another object.



From Control

This is a loop CoBlock that will cause whatever CoBlocks are within it to run continuously until the Project has ended.



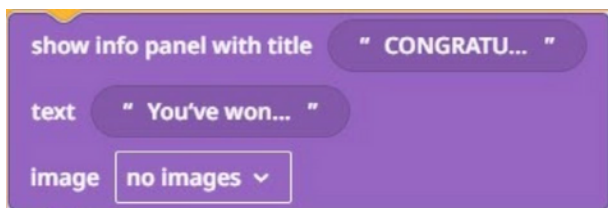
From Transform

Move an object a certain number of meters in a specified direction for a certain number of seconds.



From Control

Will cause the CoBlock program to pause for a desired number of seconds.



From Actions

Displays a pop-up message box with a title and text. Optional to add an image to the pop-up message as well.



Phase 1: Explore sample Projects

In the first phase you will explore a set of sample Projects that are all very similar. Some are “Floor is Lava” games and others are “Parkour” games. But they all have similar game mechanics in common such as losing a life or restarting the game when you fall to the ground.

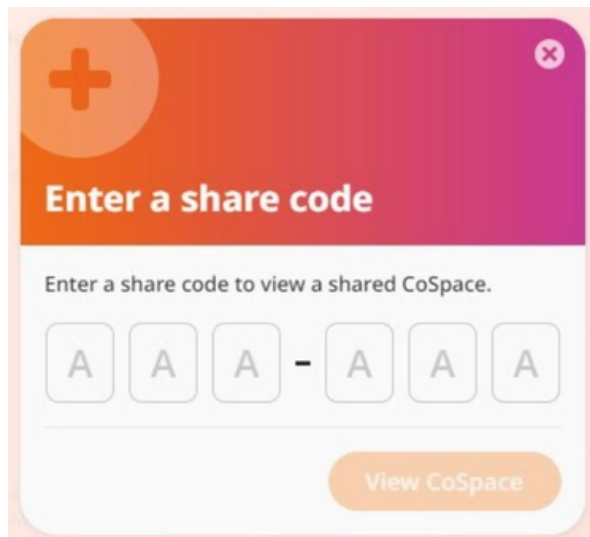
Click on the Share Code button in the top right corner of your Delightex Edu dashboard.

**SHARE CODE
BUTTON =**



Enter the following Share Code to load a sample Roller Coaster Project.

Parkour Game = **YYQ-DFN**
 Parkour, by Olive = **AYU-KAP**
 Dschungel-Parkour = **XUP-DXQ**
 Parkour Game = **ABK-ZQW**
 The Floor is Lava = **KPH-DKF**
 House Parkour = **LBX-XES**
 Parkour Game 1 = **VPD-KGC**
 Floor is Lava!!! Extreme Difficulty = **RYV-DWM**
 Sky Parkour 2 = **PHB-KDE**
 Create a Game (Floor is Lava) = **LTW-FEC**



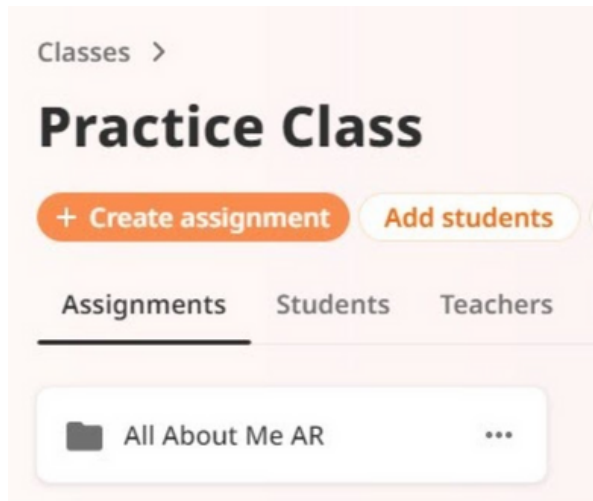
After students have had 15-20 minutes to explore these sample Projects, discuss the following question:

1. How is the game played?
2. What makes each game challenging?
3. What happens if your fall/lose?
4. What happens if you win?
5. What things did you like about each game?
6. What did you not like about each game?



Phase 2: Create a New Delightex Edu Assignment

In the second phase the teacher will create a new assignment for the Delightex Edu class. The students will access their assigned Project.



(Teacher) Create the Assignment.

Go to the Classes screen in your Delightex Edu account. Click on the class to open it. Then click on the + Create assignment button.

Change the **Type of scene** option to “**3D environment**”.

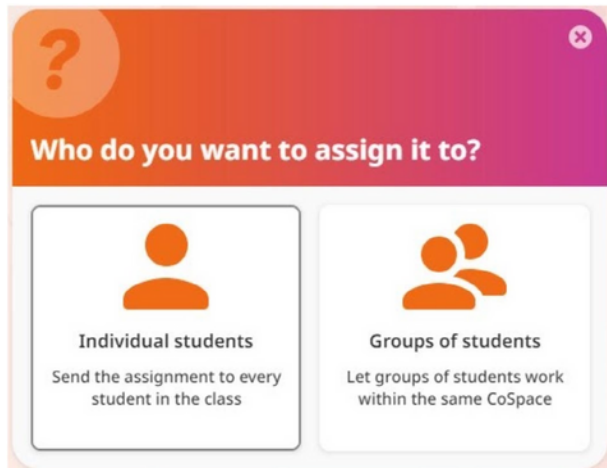
Give the assignment a title like “**Floor is Lava Game**”.

Include some simple instructions and requirements in the large text box.

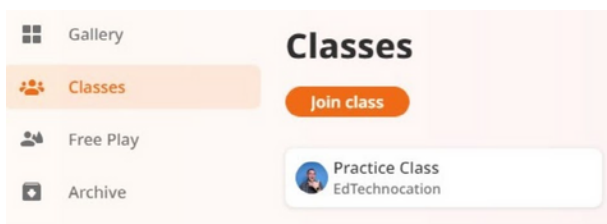
Click on the **Continue** button when finished.



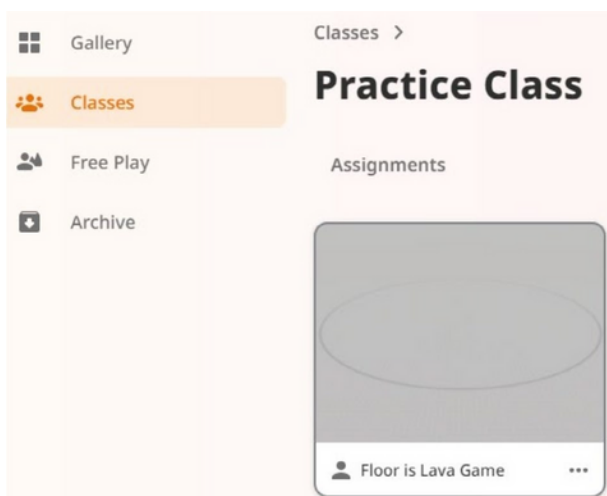
Project #3: FLOOR IS LAVA GAME



Choose **Individual students**. This will create a copy of the Project assignment for each student.



(Students) Access your assignment. Go to your **Classes** dashboard in your Delightex Edu account. Click on your class to open it up.

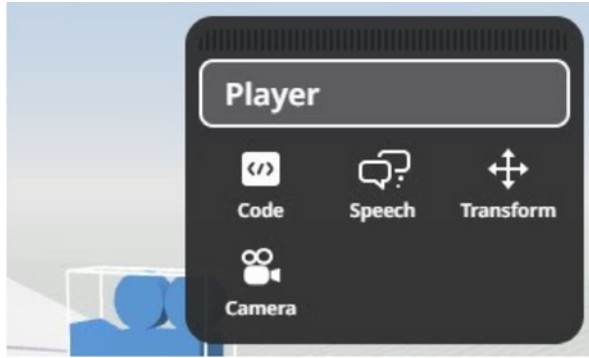


Click on your Project assignment to open it up.

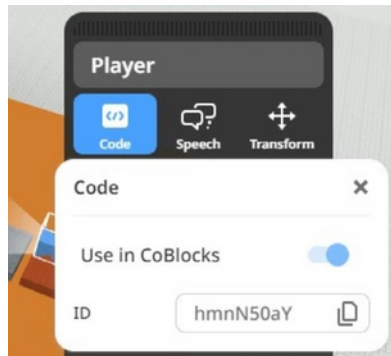


Phase 3: Create Platforms

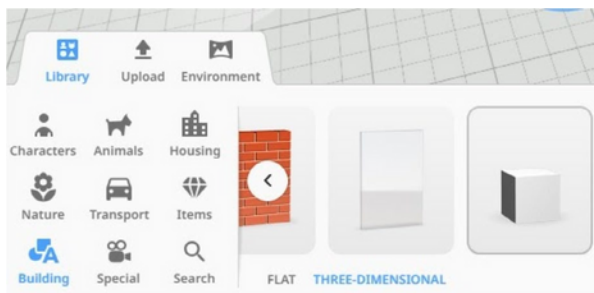
In the third phase you will learn how to create and program a moving platform that will make your game more challenging for the player.



Double click on the camera object and change the name to **Player**.



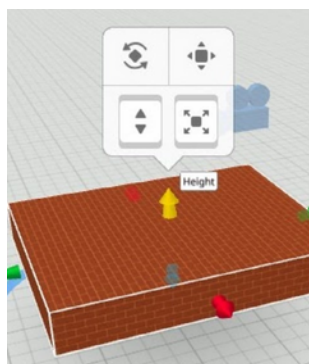
Open the **Code** option for the camera object and turn on the “**Use in CoBlocks**” switch.



Open the **Library**.

Open the **Building** sub-menu.

Drag a cuboid object into your 3D workspace.

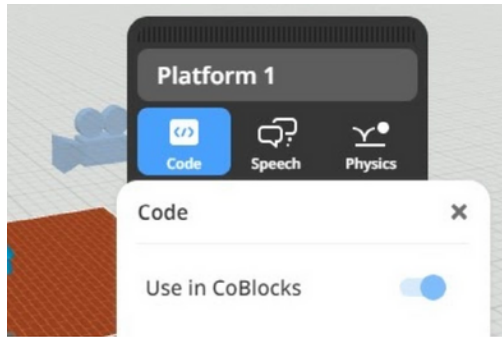


Position the Cuboid under the camera.

Use the red, blue, and green arrows to reshape the cuboid into a thinner square platform.



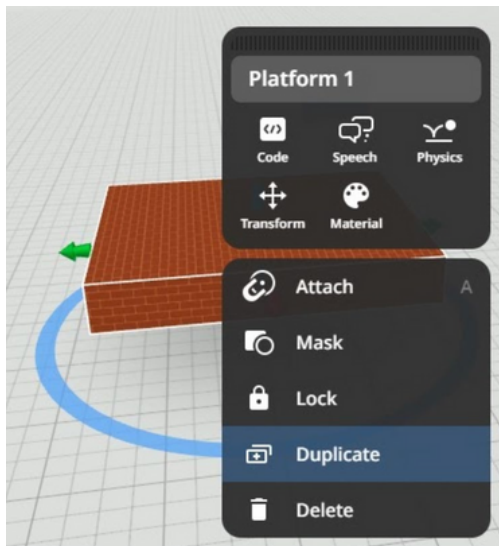
Project #3: FLOOR IS LAVA GAME



Double click on the cuboid and rename it to **"Platform 1"**.

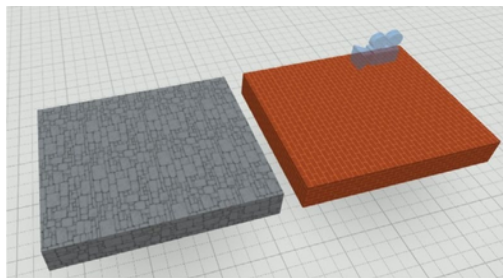
Open the cuboid object's **Code** option and turn on the **"Use in CoBlocks"** switch.

Open the cuboid object's **Material** option and choose a color or texture for the platform.

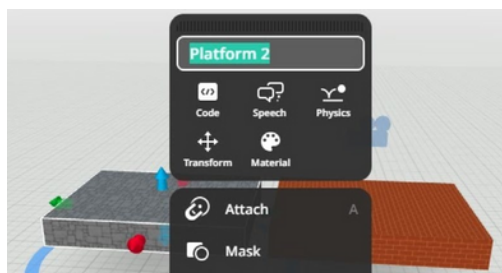


Double click on the cuboid to open its edit menu again.

Choose the **Duplicate** option to create a copy of it.



Move the second platform in front of the first platform and the camera.



Double click the second platform and rename it **"Platform 2"**.

Optional: change the **Material** of the second platform.



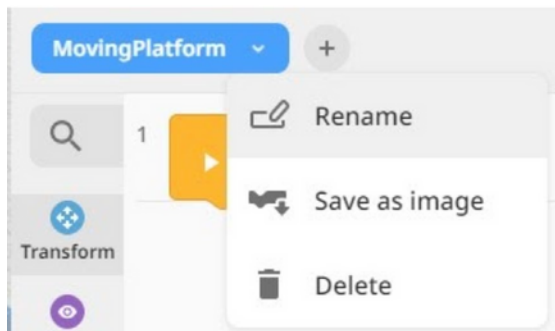
Phase 4: Create an Obstacle (Moving Platform)

In the fourth phase you will learn how to program Platform 2 into a moving obstacle.

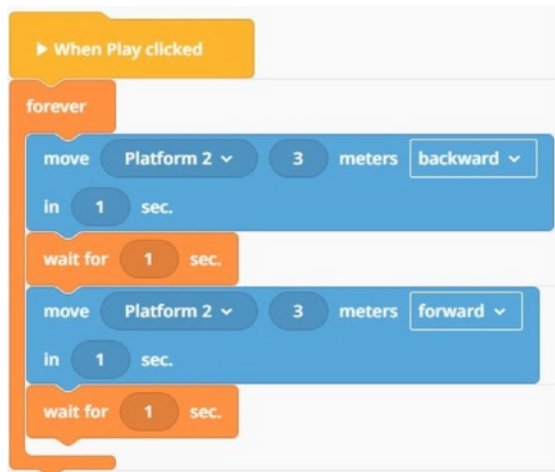


Click on the **Code** button in the top right corner of the screen.

Choose **CoBlocks** from the menu.



Click on the drop down arrow next to the **"CoBlocks"** box. Rename the CoBlocks workspace to **"MovingPlatform"**.



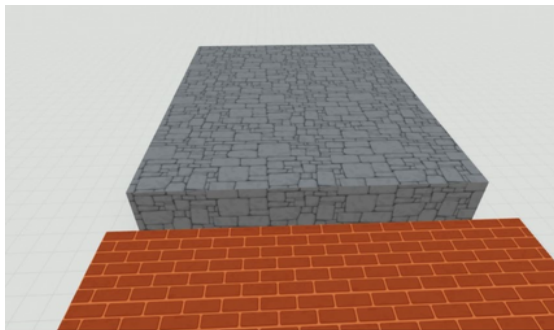
Find the **Forever** CoBlock from the **Control** CoBlocks menu. Drag it in underneath the **"When Play clicked"** CoBlock.

Find the **"Move (object) meters"** CoBlock from the **Transform** CoBlocks menu. Drag it inside of the **Forever** CoBlock.

Change the **meters** number to 3.

Find the **Wait** CoBlock from the **Control** CoBlocks menu. Drag it in underneath the **"Move (object) meters"** CoBlock.

Duplicate the **"Move (object) meters"** and the Wait CoBlocks to make a second set.



CoBlocks Tip: If Platform 2 is moving into Platform 1 then reverse the directions of both move CoBlocks.

CoBlocks Tip: The speed of the moving platform is determined by the amount of meters and seconds in the move CoBlock.

TEST IT OUT! Press the Play button in the top right corner of the screen. Check for this:

1. Does Platform 2 move back and forth?
2. Use the arrows keys on your keyboard to move yourself forward and backwards on platform 1.
3. Use the spacebar on your keyboard to jump.
4. Can you move forward and jump onto the moving platform without falling off too easily?





Now that you know how to create one moving platform, create more moving platforms to make your game more challenging!

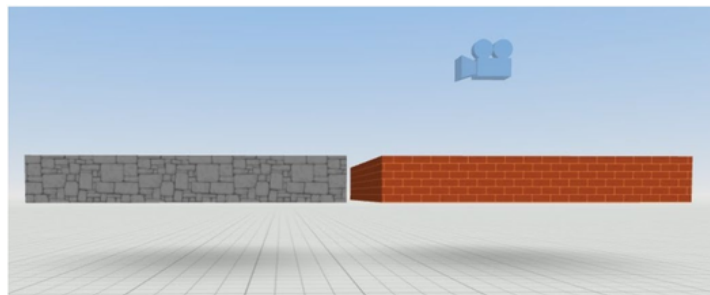
Other things to try with moving platforms:

- Try moving a platform in two other directions (i.e. left/right or up/down).
- Change the meters and seconds in the move CoBlocks to create faster or slower platforms.

Phase 5: Reset Zone (Lava!)

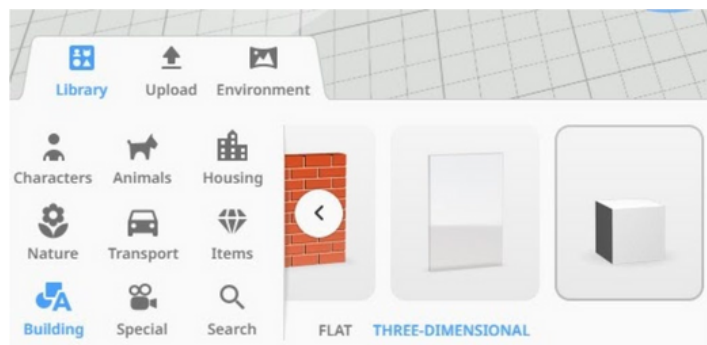
In the fifth phase you will learn how to create a reset zone below your platforms (on the ground) that will cause the player to go back to the beginning of the course if they fall off of a platform. This reset zone is the lava in your game!

Before creating the reset zone, make sure that all of your platforms are raised off of the ground.

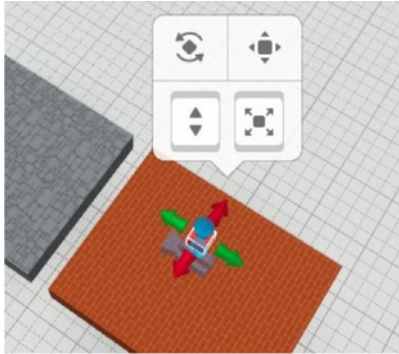


Open the **Library**.

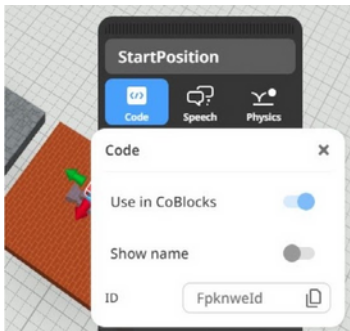
Open the **Building** sub-menu.



Project #3: FLOOR IS LAVA GAME



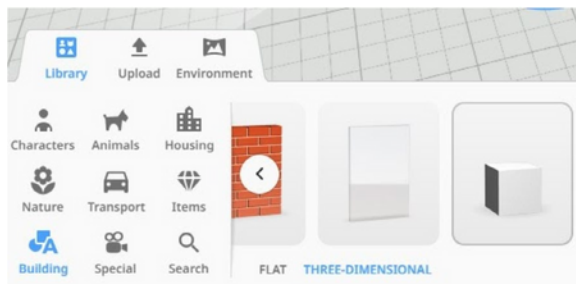
Drag in a **cuboid** object and position it directly above the camera object.



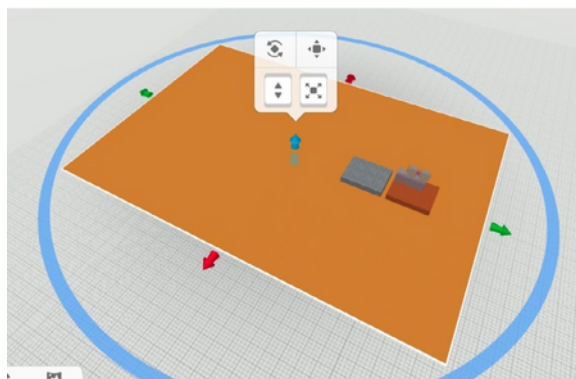
Double click on the cuboid object and rename it to **"StartPosition"**.

Open the cuboid's **Code** option and turn on the **"Use in CoBlocks"** switch.

Open the cuboid's **Material** option and choose a color or texture.



Drag in another cuboid object into the 3D workspace and position it on the ground and behind the camera and Platform 1.

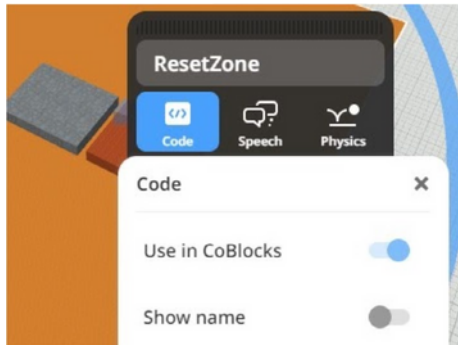


Resize the new cuboid by using the blue, green, and red arrows so that it covers all of your platforms from below.

Make sure the new cuboid is lowered all the way to the ground and all of the platforms are raised above it.



Project #3: FLOOR IS LAVA GAME

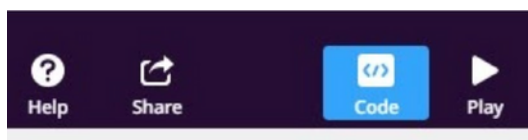


Double click on the cuboid and rename it to ***ResetZone***.

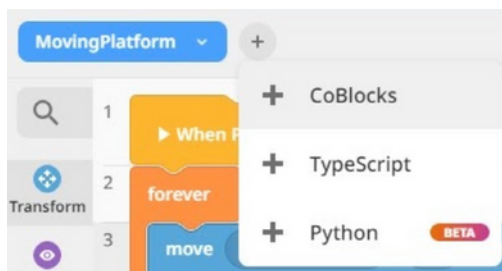
Open the cuboid's **Code** option and turn on the ***Use in CoBlocks*** switch.

Open the cuboid's **Material** option and choose a color or texture.

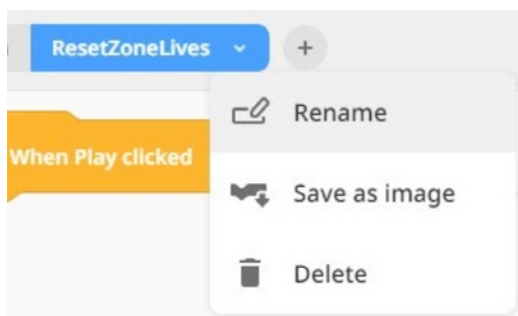
The ResetZone will become the lava in your game!



Open the **Code** tool in the top right corner of the screen.



Click on the **+** at the top of the CoBlocks screen. Choose ***+ CoBlocks*** to add a new CoBlocks workspace.



Click on the drop down arrow next to the ***CoBlocks*** box. Rename the CoBlocks workspace to ***ResetZoneLives***.



Drag in a ***When (object) collides with (object)*** CoBlock from the **Events** CoBlocks menu.

Change the first object drop-down menu to ***ResetZone***.

Change the second object drop-down menu to ***Player***.



Project #3: FLOOR IS LAVA GAME



Drag in a “**Set position of (object)**” CoBlock from the **Transform** CoBlocks menu and place it inside the **enter** space.

Change the object drop-down menu to **Player**.



Drag in a “**Position of (object)**” CoBlock (shaped like a bubble) and replace the “X Y Z” space inside of the “**Set position of (object)**” CoBlock.

Change the object drop-down menu to “**StartPosition**”.



This program will cause the player to move back to the beginning of the game by moving the camera back to the StartPosition cuboid when the touch the ResetZone cuboid.

TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

1. Are you able to move yourself off of the platform so that you fall to the ground?
2. When you touch the ground does it take you back to the first platform?

CoBlocks Tip:

→ If you seem to be hitting something when you move around it is likely due to the camera and the StartPosition cuboid being too close to each other. Try raising the StartPosition cuboid higher above the camera.



Phase 6: Lives counter and Game Over

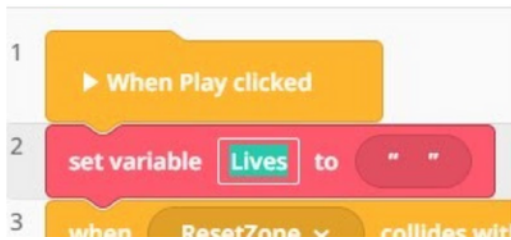
In the sixth phase you will create a lives counter that will be displayed on the player's screen while they play the game. The lives counter will keep track of the player's remaining lives if they fall into the lava below. If they run out of lives, then the Project will end!



Open the Code tool in the top right corner of the screen.

Make sure you are in the RestZoneLives CoBlocks workspace.

Drag in a "set variable to" CoBlock from the Data CoBlocks menu.

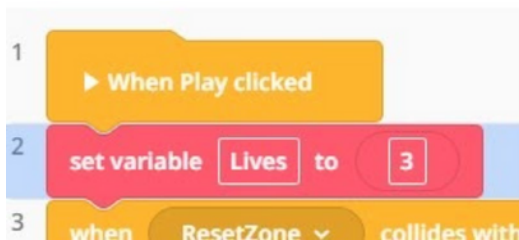


Change the name of the variable in the "set variable to" CoBlock to "Lives".



Find the **Values** category in the **Data** CoBlocks menu.

Drag in the number value CoBlock and place it in the second space in the "**set variable to**" CoBlock.



Change the number in the "**set variable to**" CoBlock to "**3**". This will be the number of lives that a player will begin the game with.



Project #3: FLOOR IS LAVA GAME

Drag in a “**change (variable) by (number)**” CoBlock and place it inside of the “**when collide**” CoBlock and above the “**set position of**” CoBlock.

The variable position in the CoBlock should be set to “**Lives**”.

Change the number value to -1 (minus one).

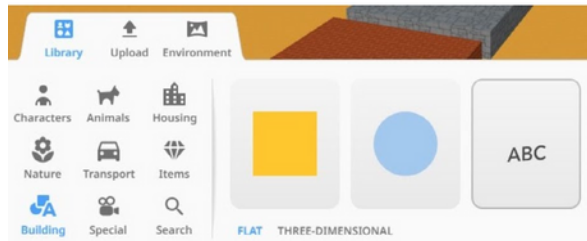


Close the **Code** tool.

Open the **Library**.

Open the **Building** sub-menu.

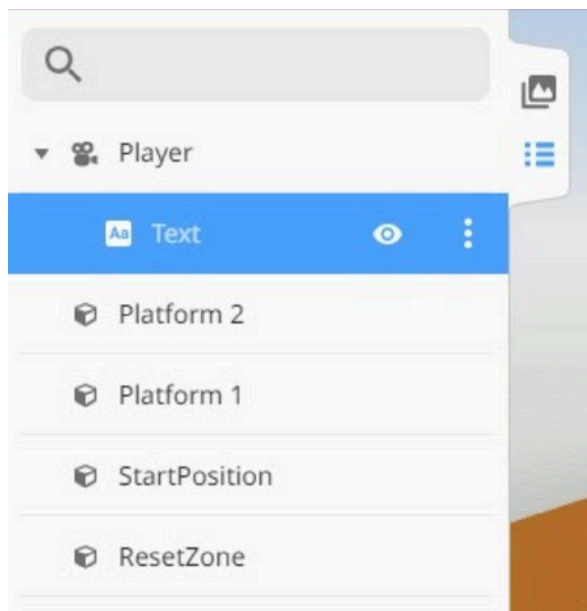
Drag in a **Text Box** object into the 3D workspace.



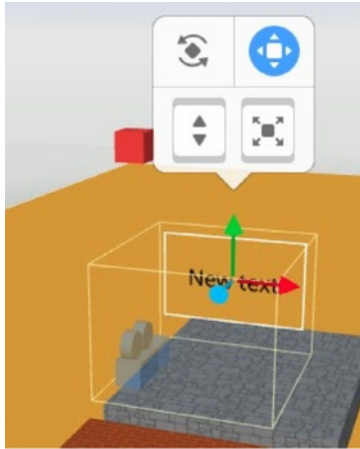
Open the **Object Hierarchy** in the top left corner of the screen.

In the object list, click and drag the **Text** item and place it inside of the **Player** (camera) item.

This will cause the **Text Box** to become attached to the **Player camera**.

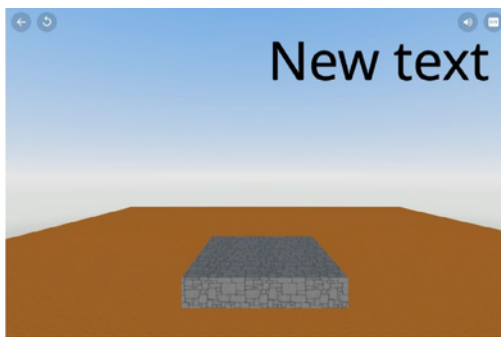


Project #3: FLOOR IS LAVA GAME

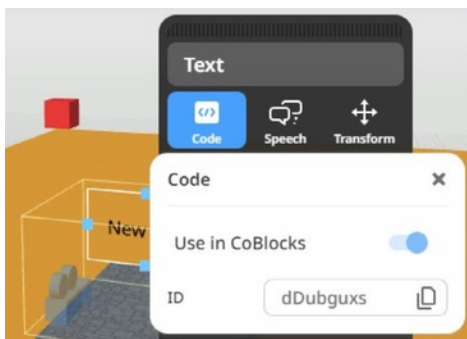


Position the **Text Box** in front of the **Camera** so that the text is visible to the player while they play the game.

Use the **Omni-directional tool** for the **Text Box** in order to more accurately move it in place.



Switch between pressing **Play** and moving the text box to see if the text is clearly visible to the player.



Double click on the **Text Box**, open the **Code** option, and turn on the “**Use in CoBlocks**” switch.

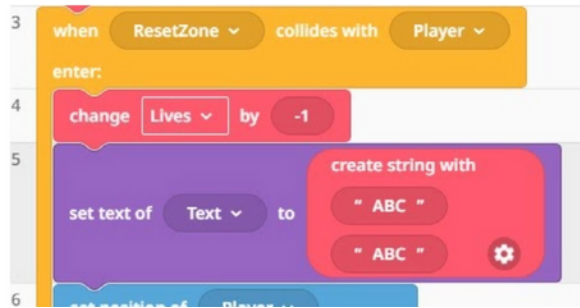


Drag in a “**set text of**” CoBlock from the **Actions** CoBlocks menu.

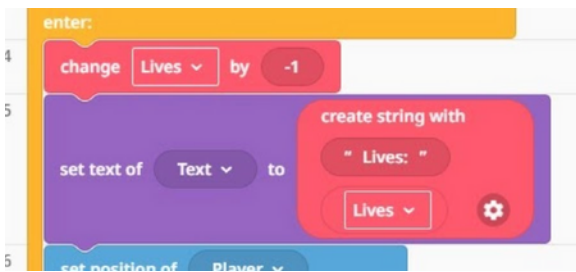
Change the object drop-down menu to “**Text**”.



Project #3: FLOOR IS LAVA GAME



Drag in a **“create string with”** CoBlock from the **Values** category of the **Data** CoBlocks menu and place it inside of the second space in the **“set text of”** CoBlock.



In the text space of the **“create string with”** type the text **“Lives:”**.

Drag in the **“Lives”** variable CoBlock from the **Data** CoBlocks menu and place it inside the second space of the **“create string with”** CoBlock.

Test it out! Press the **Play** button in the top right corner of the screen. Check for this:

Does the text on the screen show “Lives:2” when you fall into the lava for the first time?
Does the text on the screen subtract a life every time you fall into the lava?

CoBlocks Tips:

→ The text will show as “New text” at the beginning of the game because we have only programmed the text to change if the player falls in the lava.

→ The lives counter will continue to subtract into negative numbers because we haven’t told the game when to stop yet.



Open the **Code** tool. Make sure you are still in the **“ResetZoneLives”** CoBlocks workspace.

Drag in a **“If Else”** CoBlock from the **Control** CoBlocks menu. Place it inside the **“when collide”** CoBlock and above the **“change (variable) by”** CoBlock.



Project #3: FLOOR IS LAVA GAME



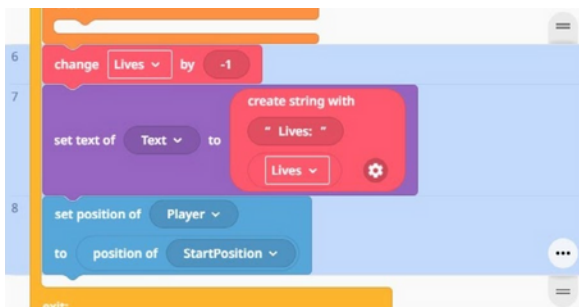
Drag in the Lives variable CoBlock from the **Data** CoBlocks menu and place into the 1 position of the **If Else** CoBlock.

Change the middle symbol to an = (**equal**).

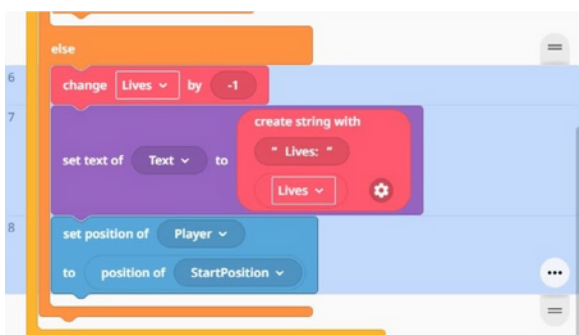
Change the second number to a **0 (zero)**.



Drag in a **"End Project"** CoBlock from the **Control** CoBlocks menu and place it inside the first space below the If section of the CoBlock.

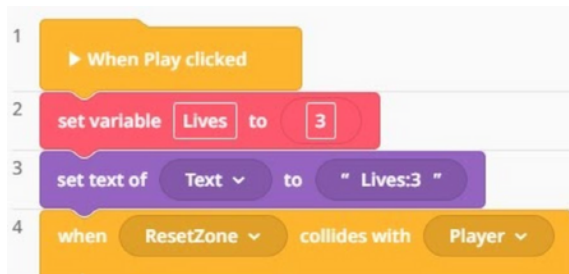


Click once on the **"change Lives by -1"** CoBlock. It will highlight itself in blue. Use the bottom gray handle bar and drag it down to also highlight the **"set text of"** and the **"set position of"** CoBlocks.



Click and drag the highlighted string of CoBlocks up into the **Else** space.





Drag in another “**set text of**” CoBlock from the **Actions** CoBlocks menu and place it below the “**set variable**” CoBlock.

Choose **Text** from the object drop-down menu.

Type “**Lives:3**” into the text space.

TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

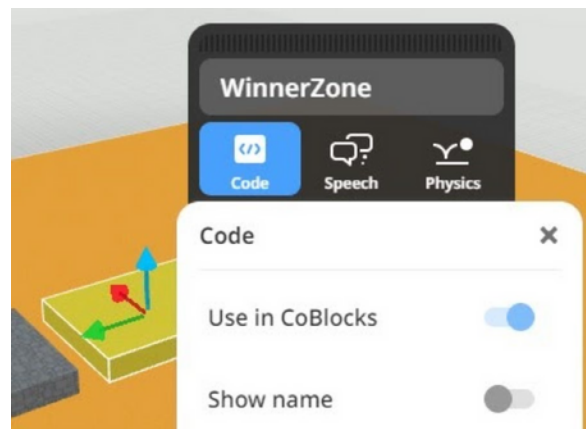
1. Does the text show as “Lives:3” at the beginning of the game?
2. Does the lives counter subtract a life when you fall into the lava for the first time?
3. What happens when you lose all of your lives?
4. Does the game end by kicking you out of the Project when you lose all of your lives?

Phase 7: Winner zone

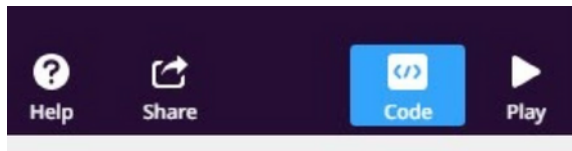
In the seventh phase you will create a winner zone. When the player reaches the final platform in the game they will be presented with a congratulatory message letting them know that they have finished the game and have won!

Create a new platform. You can create a new one from the library or duplicate another platform from your 3D workspace.

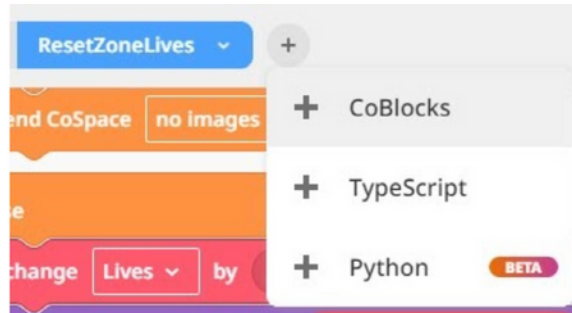
Double click on this new platform and rename it to **WinnerZone**. Make sure that the “**Use in CoBlocks**” switch is turned on.



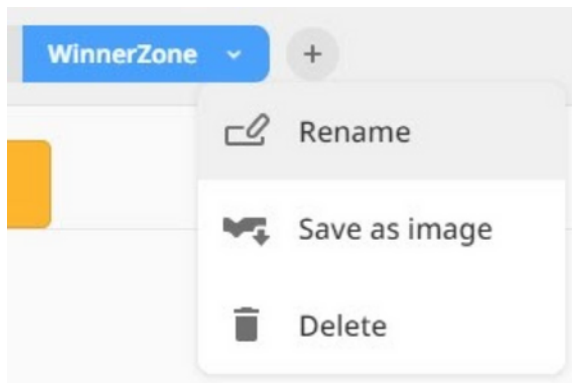
Project #3: FLOOR IS LAVA GAME



Open the **Code** tool in the top right corner of the screen.



Click on the + at the top of the CoBlocks screen. Choose **+ CoBlocks** to add a new CoBlocks workspace.



Click on the drop down arrow next to the **"CoBlocks"** box. Rename the CoBlocks workspace to **"WinnerZone"**.



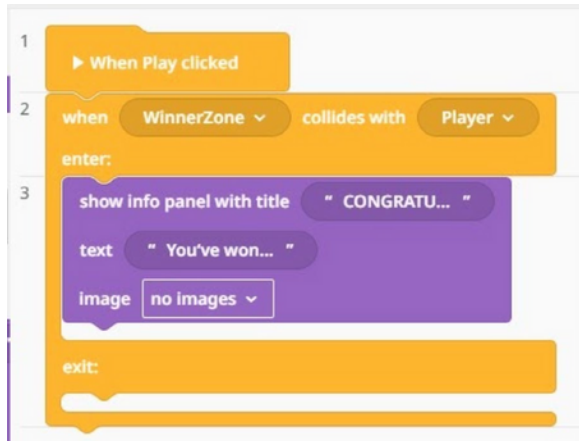
Drag in a **"When (object) collides (object)"** CoBlock from the **Events** CoBlocks menu and add it under the **"When Play clicked"** CoBlock.

Change the first object drop-down menu to **WinnerZone**.

Change the second object drop-down menu to **Player**.

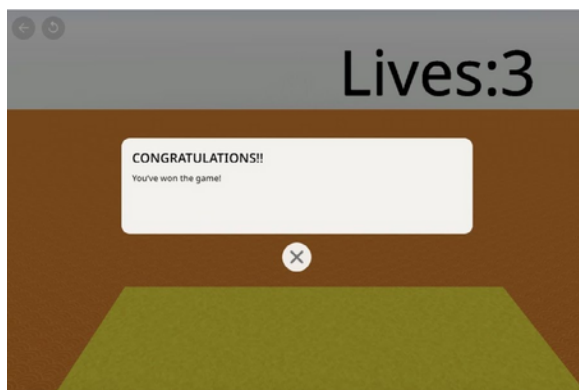


Project #3: FLOOR IS LAVA GAME



Drag in a “**show info panel**” CoBlock from the **Actions** CoBlocks menu and place it inside the enter space.

Change the **title** and **text** boxes with a congratulatory message for the player. This is what they will see if they reach the end of your game!



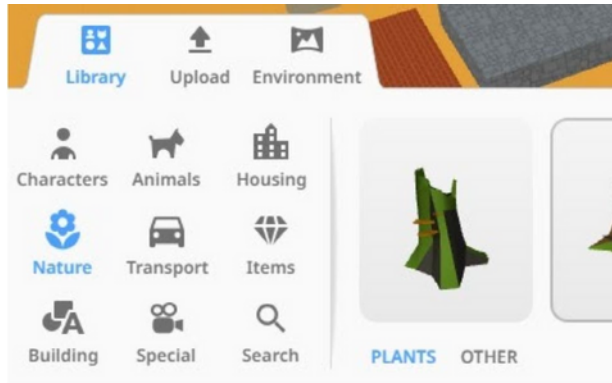
TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

1. Can you win your game?
2. Is your game too hard or too easy?
3. When you land on the final platform (winner zone) do you get the pop-up message box?



Phase 8: Customize your Floor is Lava game

In the eighth phase you will further build and customize your game by adding more obstacles and customize it with a theme.



Use other objects from the **Library** to further customize and add a theme to your game.

You can also place objects on your platforms to create more obstacles for the player.



Consider adding a character that resembles you at the start of the game to give your player some instructions.

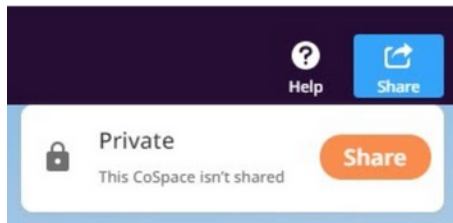
TEST IT OUT! Press the **Play** button in the top right corner of the screen. Check for this:

1. Do any of the added objects interfere with the game?
2. Do any of the obstacles make the game too difficult to play?
3. Is it still possible to win your game?

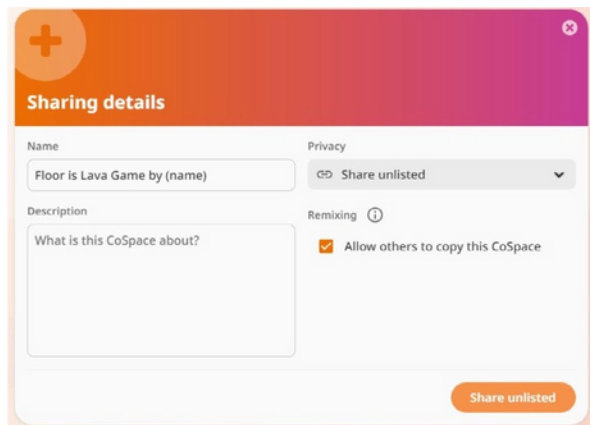


Phase 9: Share your Floor is Lava game!

In the eighth phase students will learn how to share their Project with others. Students will also learn how they can view their peers' Project.



Click on the **Share** button in the top right corner of the screen. Your Project is set to **Private** by default.



Rename your Project title to **"Floor is Lava by (name)"**.

Teachers: an optional setting is to have students check the box for Remixing. This will allow you to make a copy of a student's Project if necessary.

Click on the **Share unlisted** button at the bottom of the box.

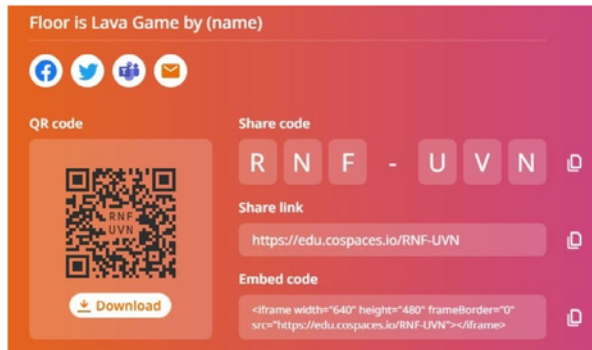


Click on the gray **Share** button on the next screen.



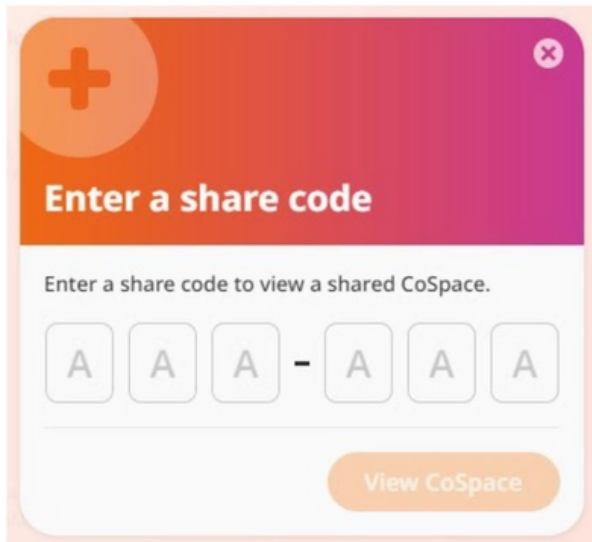
Project #3: FLOOR IS LAVA GAME

In the eighth phase students will learn how to share their Project with others. Students will also learn how they can view their peers' Project.



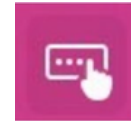
This screen shows you the various options for sharing your Project with others.

Teachers: Decide how you would like to collect student Projects and how you plan to share the student Projects with others. If students are sharing with each other in class, the best way is to collect all of the students' Share Codes on one document, then display all of the students' Share Codes on the board.



On their Delightex Edu dashboard they can click on this icon to open the Share Code screen.

**SHARE CODE
BUTTON =**



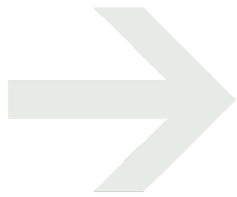
Type in the Share Code of a peer's Project and click on the **View Project** button.

Press the **Play** button to play the roller coaster experience.



Final Project: Build your own *Impact Game*

Now that you've built three different types of virtual and augmented experiences in Delightex Edu, it's time to use your new skills to build a game for impact.



What is an Impact Game?

Impact games are games that deal with real issues and encourage players to learn and take action on important issues in the real world! These can be issues big and small.

Steps:

1. Choose your issue: What is the real world issue or challenge that you will tackle with your impact game? It can be something relating to your local community, or something that affects the whole world.
2. Dive into your issue: Who is impacted by your issue? What causes it to occur? Where and when does it happen? What are possible solutions to the issue? What information should the public know about this issue and it's possible solutions?
3. Brainstorm your game: Can you think of a connection between your chosen issue and any games you've played or made? Decide what type of impact game you're going to make. Your game can be built off of one of the games we've already made, something you create from scratch, or a remix of an existing Project (explore the Project Gallery).
4. Plan your game: What 3D objects are you going to need? What will your Project environment look like? What will the player's experience be like? Make a plan for making your Project before you start programming.
5. Make your game: Get into Delightex Edu and build your game!
6. Playtesting: Let someone else play your game and get them to give you feedback. Look for bugs or unexpected behaviors in the game.
7. Improve: Put your playtesting feedback into action by fixing bugs and improving your game.

