



COSPACES EDU



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WALKING THROUGH THE MEMORY WITH IMMERSIVE
TECHNOLOGIES

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CEIP PONTE DOS BROZOS- ARTEIXO



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COSPACES EDU

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COSPACES EDU



[COSPACES EDU](#) is a virtual reality platform of German origin launched in 2016 by the Munich-based company Delightex. Over time it has undergone several updates and versions. It has since its inception a free, limited version and a paid version that offers multiple features. It currently offers CoSpaces Edu Basic (free) and CoSpaces Edu PRO. It is possible to work from Web 2.0 as well as from the respective apps developed for Chromebook, tablets and/or smartphones IOS and Android.

Levels:

Like other design and coding applications (Scratch or Tinkercad) CoSpaces Edu is flexible enough to be adaptable to almost any age.

Subject/s:

It integrates perfectly in any area.

What prior knowledge is required?

CoSpaces Edu is perfectly suited to the level and aptitude of the students as it is very easy to start creating 3D stories and experiences using the typical "click, drag and drop" at the beginning and then increases the learning curve by using coding; specifically, the options for block-based programming (CoBlocks) and syntax-based programming (TypeScript). Even using the CoSpaces block coding language, students have the option to select "Beginner CoBlocks" or "Advanced CoBlocks" to change the number and type of code blocks they have access to.

This can prevent beginner students from being overwhelmed by advanced programming concepts.

It also has a physics engine that caters for more experienced learners, allowing them to create physics simulations, experiment with collisions, velocities, masses...

Finally, not only can CoSpaces be used to create almost any kind of virtual experience, but our students can also create their own 3D models in a tool such as Tinkercad or SketchUp, record their own audio tracks, add pre-recorded videos and much more.



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Objectives:

From the proposal of creating immersive spaces, our students can formulate, represent and solve problems using augmented reality, virtual reality and programming. The idea is to promote computational thinking to solve problems and to teach a new way of thinking, based on the computer model that shows how to deal with large problems by breaking them down into a sequence of smaller, more manageable problems.

The integration of immersive or semi-immersive experiences has the potential to transform learning. The role of the students is active as their function is to "do, create, interact", which will allow for deep, tailor-made learning, as well as enhancing autonomy and the development of other skills such as creativity, problem solving, communication, collaboration, etc.

Other advantages offered by the platform are:

- Accessible learning materials: anytime, anywhere. We work in the cloud so learning materials are portable and less expensive. Education becomes more accessible and mobile.
- Increased learner engagement and interest. Interactive learning has a significant positive impact on learners. It keeps them engaged throughout the session and makes learning fun and effortless.
- Ability to collaborate allowing for group projects.

What skills do learners develop that cannot be obtained in more traditional ways?

Using the CoSpaces Edu platform gives students the opportunity to explore objects or places, travel in space, travel in time, hold a hologram in their hand... experiences that traditional tools such as textbooks and videos cannot provide. It is a personalised way of learning and serves to further engage students by helping to drive their learning and exploration.

On the other hand, not only do we offer students the possibility of interacting with objects, characters, places..., but we offer them something much more beneficial and that is that students go from being simple consumers to being the creators.

Learning to create with these different tools and, in some cases, being able to collaborate with their peers on projects, will help students develop digital literacy and 21st century learning skills. They will develop their ability to problem solve, think critically and enhance their creativity in the learning process.

What is the resource?



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Thanks to the Cospaces Edu platform, it is easy to create and code animations, stories, games and a variety of other experiences that can be viewed in augmented reality (AR), virtual reality (VR), or as a 360° experience in the browser window.

It has two additional functionalities:

- It allows you to not only easily create immersive spaces but also immerse yourself in them in 360° on any screen or in VR mode on your mobile device.
- It offers the ability to code in JavaScript or CoBlocks, which means that we can animate objects, give them interactivity so that they can move, emit sounds, display messages and a host of other commands. With CoBlocks we have the possibility of programming from a computer or tablet.

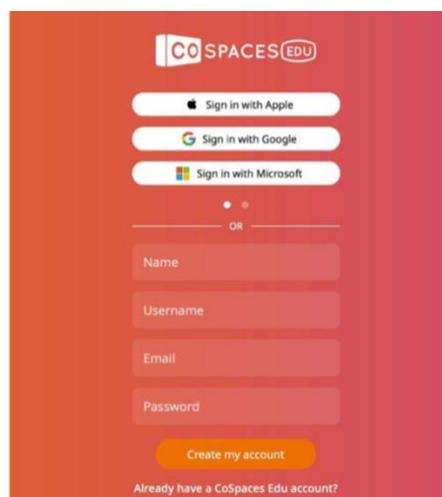
How do I use it?

In this section we will see how:

- Create a class and a task
- Start editing a space
- Program basic actions
- Didactic possibilities

CREATING A CLASS/ASSIGNMENT

To start working with students in CoSpaces Edu, you will first need to create a teacher account at this [link](#).

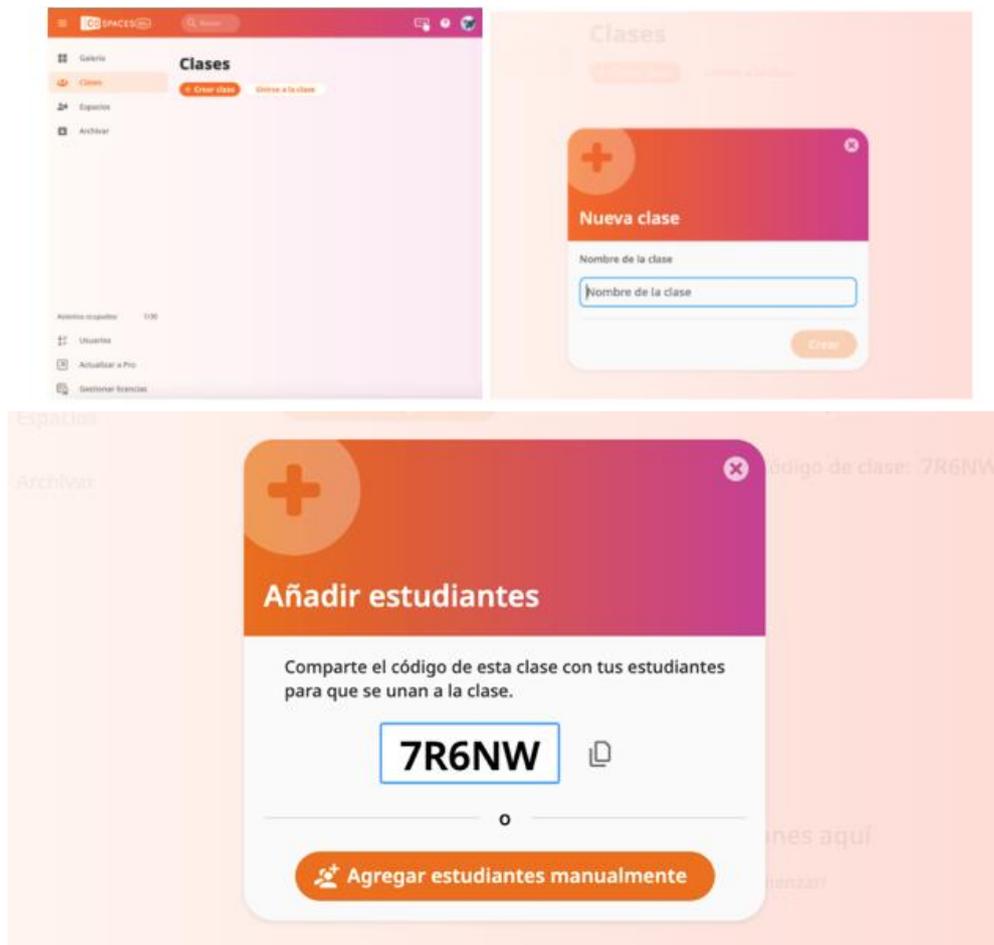


Once logged in, click on Classes in the sidebar, then click on + Create class. Choose a name for your class, click create, and you will be provided with a 5-character class code that your students will enter when they create student accounts.



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At the time of writing, CoSpaces requires each student to have their own account. These are most easily created using Microsoft, Google or Apple login. However, they also offer the option of creating accounts with a name, username and password. Students who already have a CoSpaces account can simply click on Classes in the sidebar, and then click on Join Class where they will enter their unique class code.

Once the CoSpaces class is up and running, it's time to add tasks. If you are using the free version of CoSpaces there is a limit of one assignment. As a teacher, you can view (and edit) your students' work in real time, providing valuable opportunities for formative assessment and problem solving.



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You may want to assign tasks in groups or individually. In CoSpaces you can organise work groups and re-manage them whenever you want.

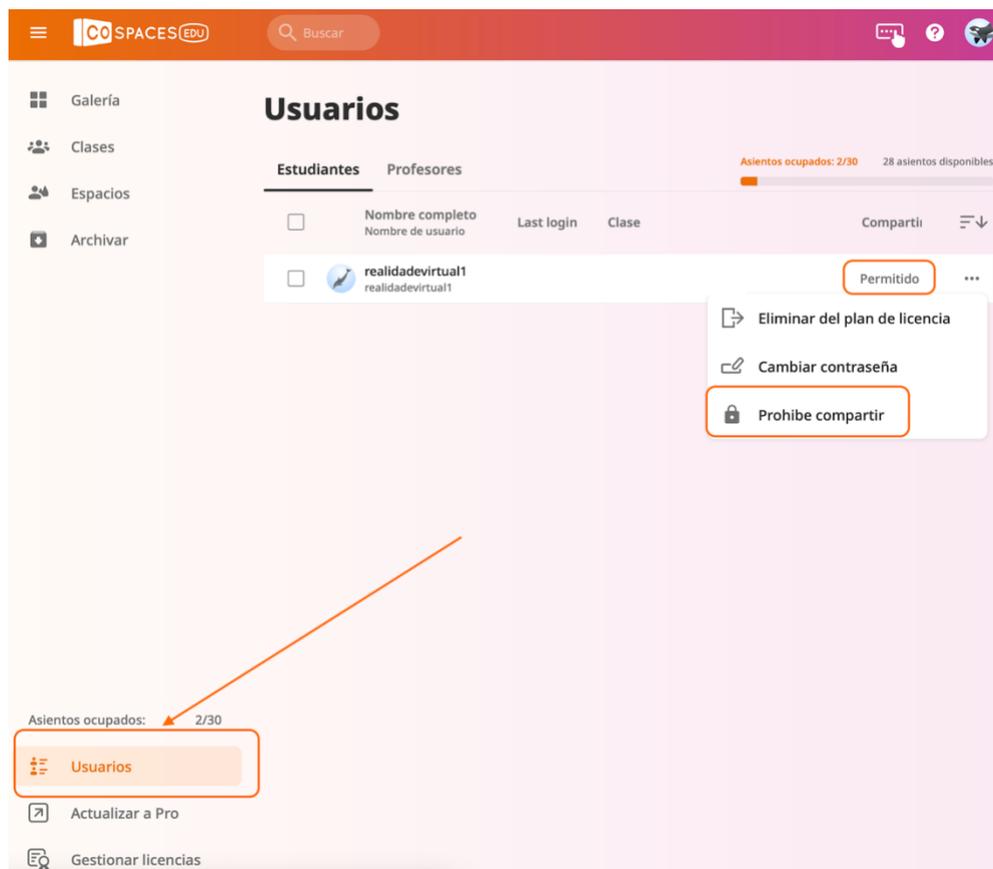


You can also manage permissions on your students' accounts. This way, you can have them share their work (note that students' names will appear with their shared CoSpaces) or to maintain their privacy you can copy the work to your CoSpaces account and generate a sharing link from there, adding as much student information to the project as appropriate.



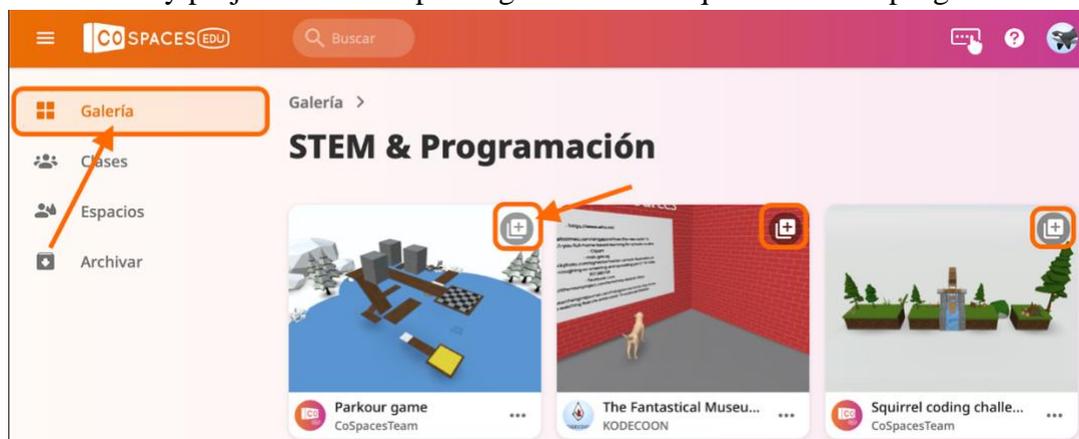
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Another valuable resource for teachers is the Gallery. These publicly shared CoSpaces can not only be a source of inspiration for projects that we can assign, but many Gallery projects can be remixed. To do this:

Click on a Gallery project that has a plus sign inside two squares in the top right corner.

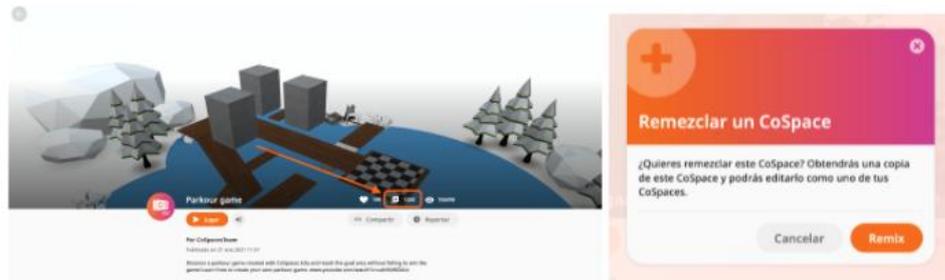


On the project page, click on that symbol and then click Remix, which will add an editable copy of the project to your own Spaces (PRO Feature).

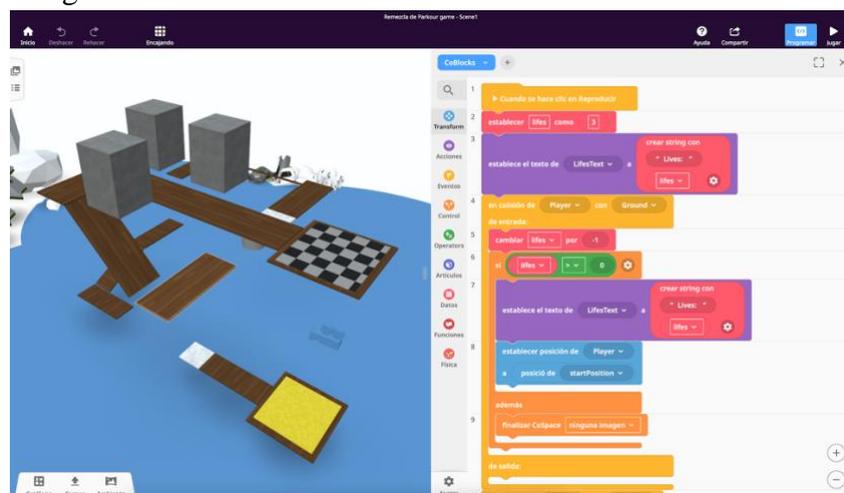


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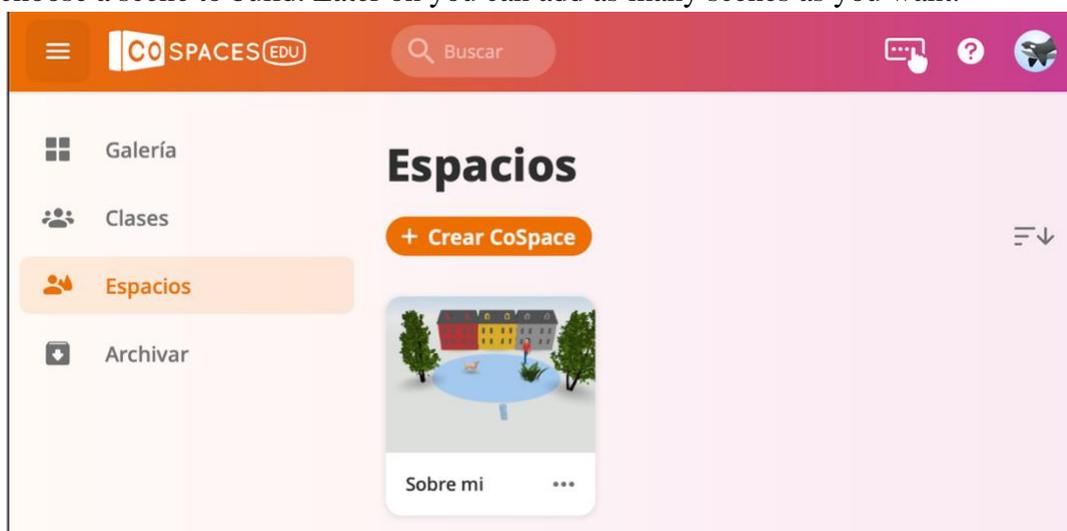


Exit the Public Gallery and click on Spaces in the left sidebar. You should now see the project you made a copy of and have it available to edit whenever you want or even to send to your students as an assignment.



START EDITING A SPACE

To start creating, go to Spaces. This is where all your creations will be stored. Your first step is to choose a scene to build. Later on you can add as many scenes as you want.

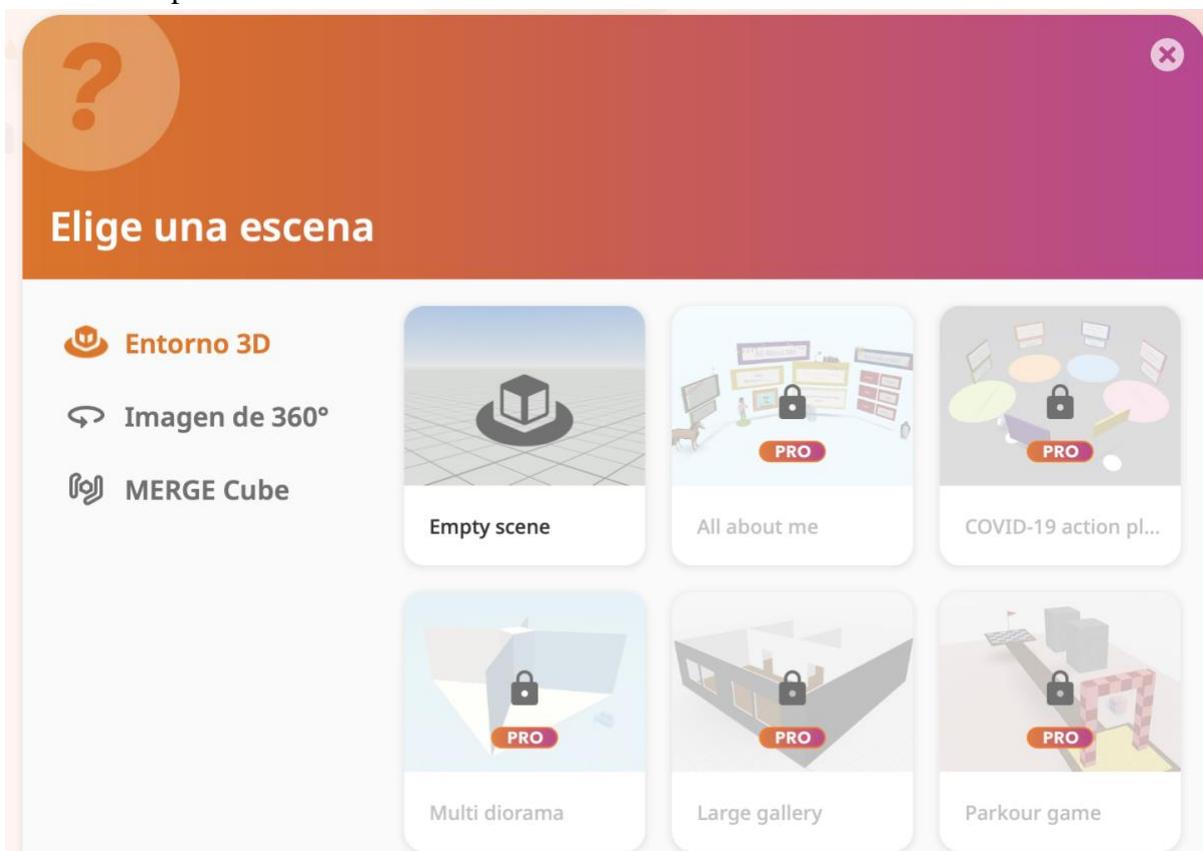




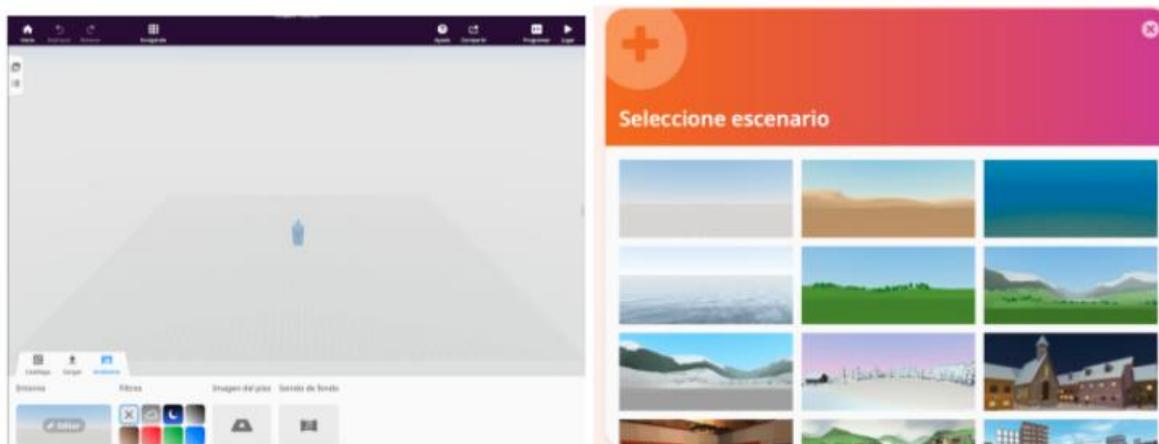
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In the free version you can build in a 3D environment from an empty scene. These scenes can be viewed in Virtual Reality or Augmented Reality. In the PRO version you can start from different templates and edit them.



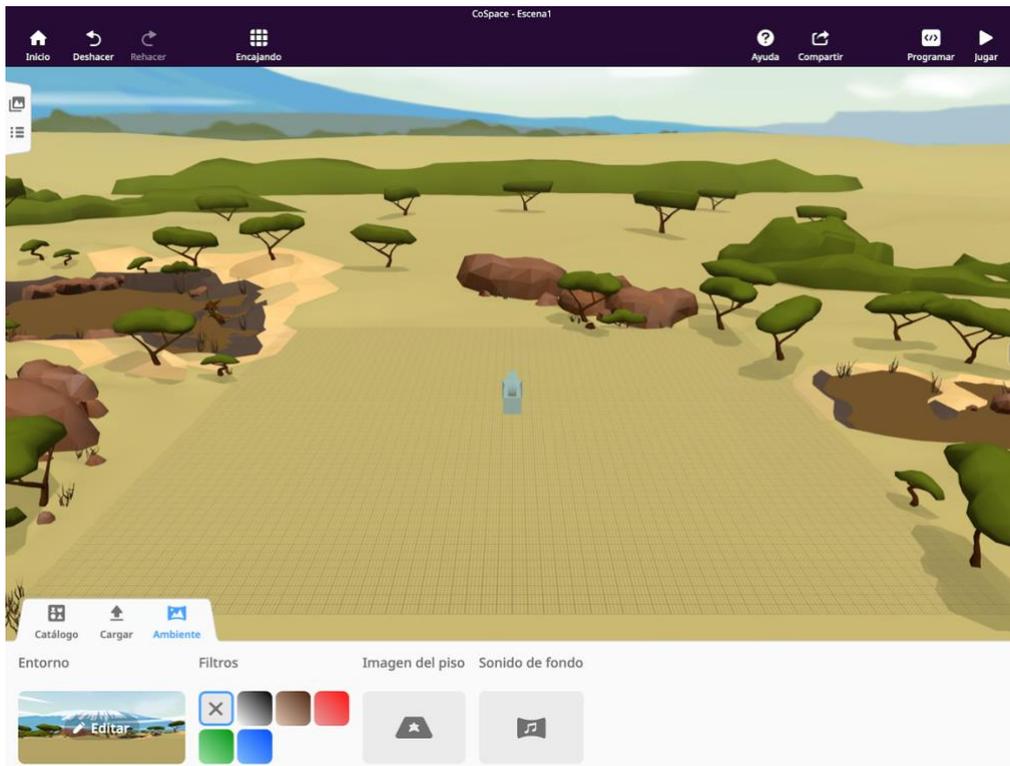
To create your first scene, start by selecting the 3D environment by clicking on Environment at the bottom left. Click on Edit and choose one of the predefined environments. You can then further customise your scene using the filters.





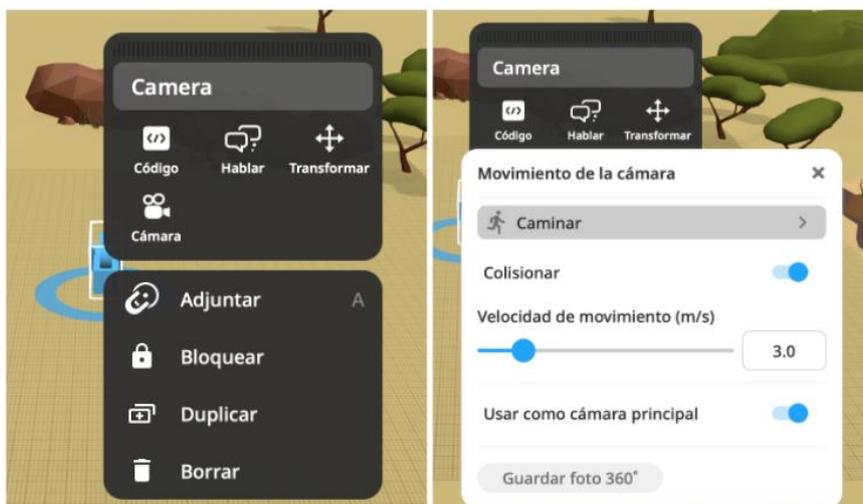
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The 3D camera in the centre of the scene allows you to define the perspective from which you can explore the scene. If you need it, you can find the 3D camera object in the special category of the Catalogue.

You can also choose between various camera movements (walking, flying, orbiting or fixed position) to change the way you experience your creation. To change the camera movement, click on Camera.

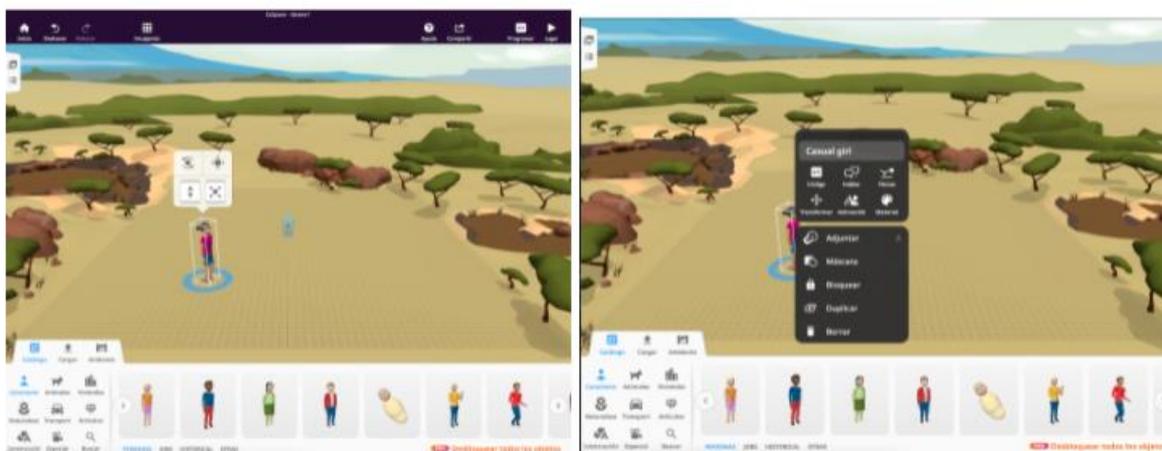




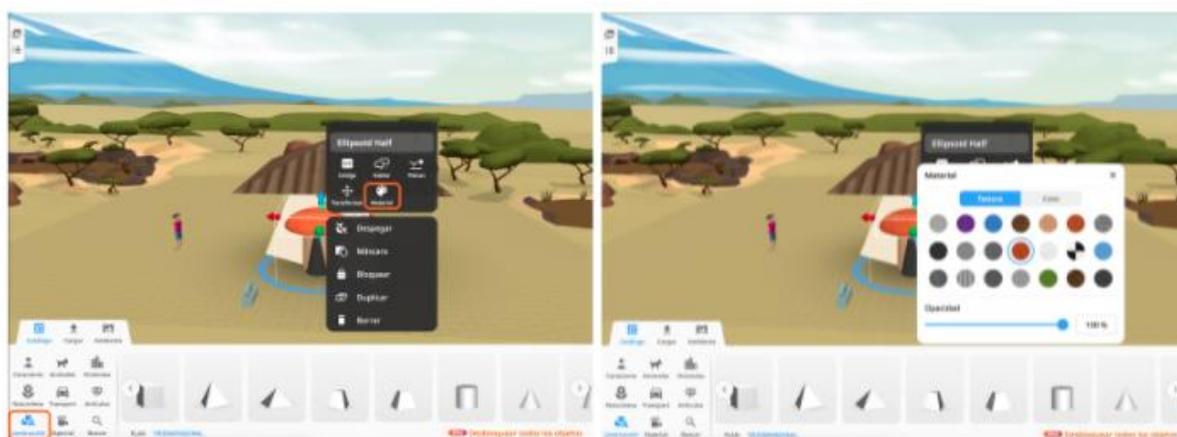
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To start creating, search the Catalogue and you'll find plenty of 3D objects. Simply drag and drop them onto the stage. Objects in the Catalogue can be moved, rotated, rotated, made smaller, made bigger, made to appear in mid-air, changed in colour and ...programmed!



Characters can be given animations. By clicking on the Animation button we can adjust gestures, postures or actions. Later we can program them to change that animation. Building blocks are available in the Construction category. With them we can easily mould or build whatever we want in 3D. Different textures are available for the blocks.



CoSpaces_Edu offers a search engine to search for files in different formats. To upload an external file, click on Upload. You can upload::

- images, including GIFs and 360° images.
- videos

3D models (.obj, .stl, .fbx)

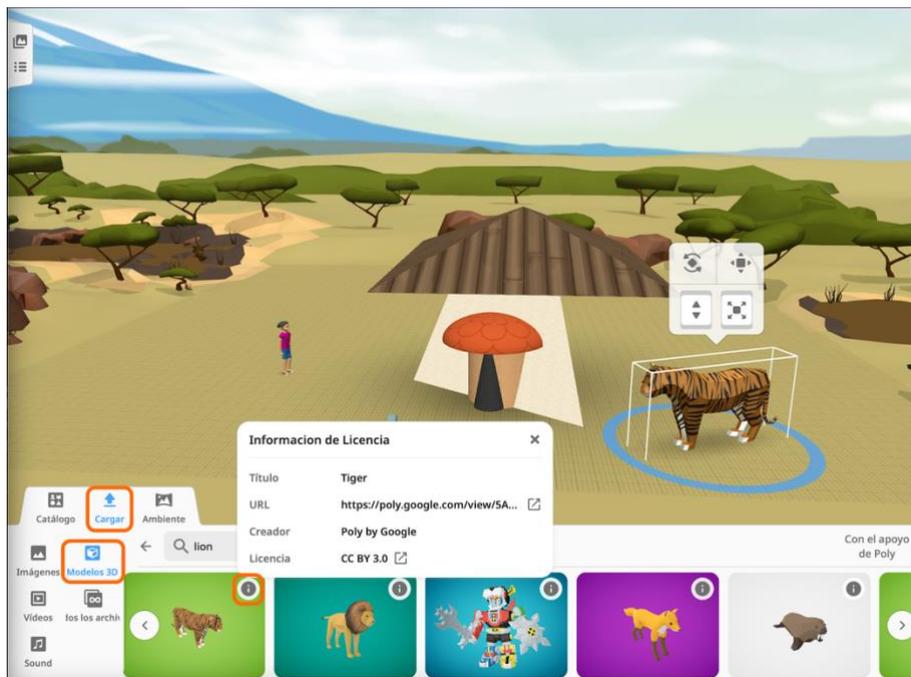
- sound files

CoSpaces Edu Basic is limited to 10 uploaded files. These files may be credited for attribution.



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PROGRAMMING BASIC ACTIONS

CoBlocks is a visual programming language that allows you to simply drag and drop CoBlocks (blocks of code) to program your CoSpace.

A CoBlock represents a piece of code that tells CoSpaces Edu to do something like, for example, have a character or object initiate a specific action in the scene. To start programming, we need to activate the Code button on each of the characters/objects we want to make interactive.

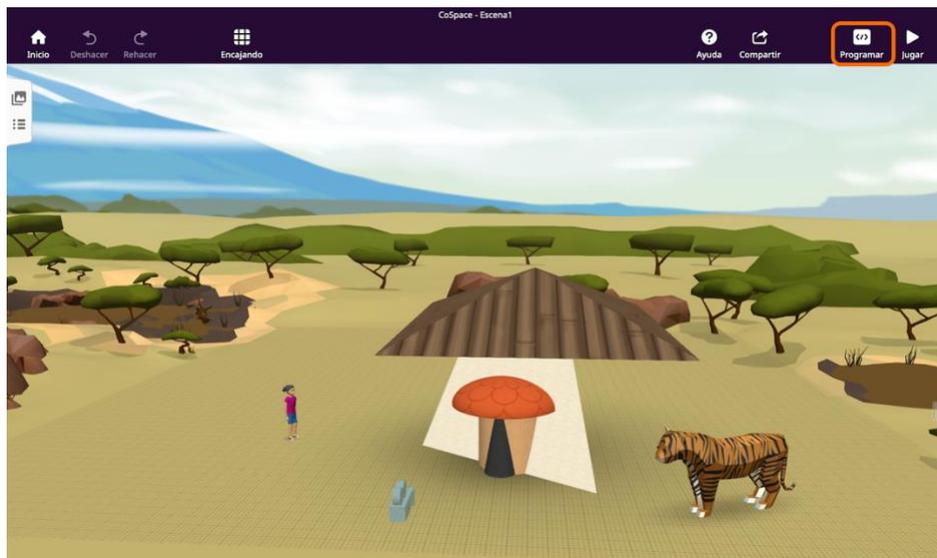


Then, we can find the Program icon in the top right toolbar.

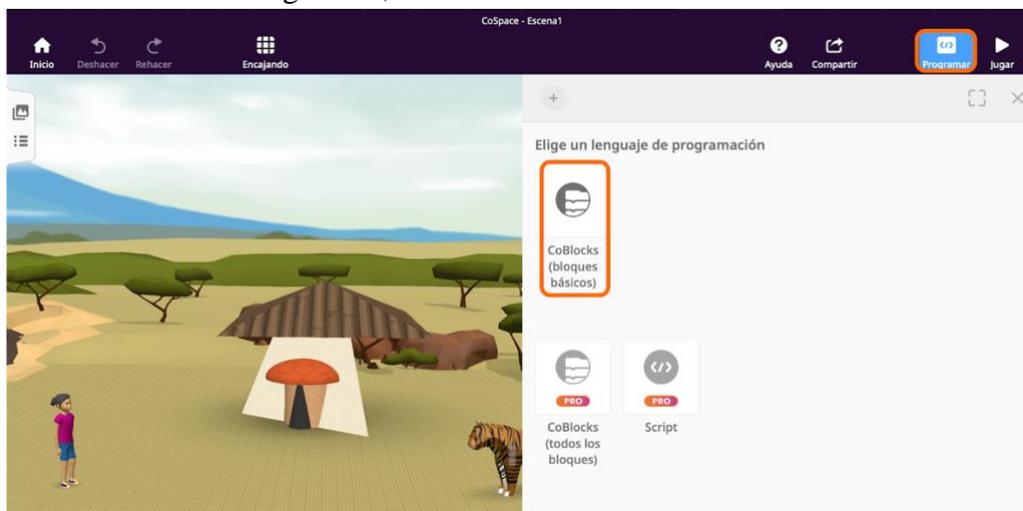


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To open the CoBlocks coding editor, click on the CoBlocks icon.



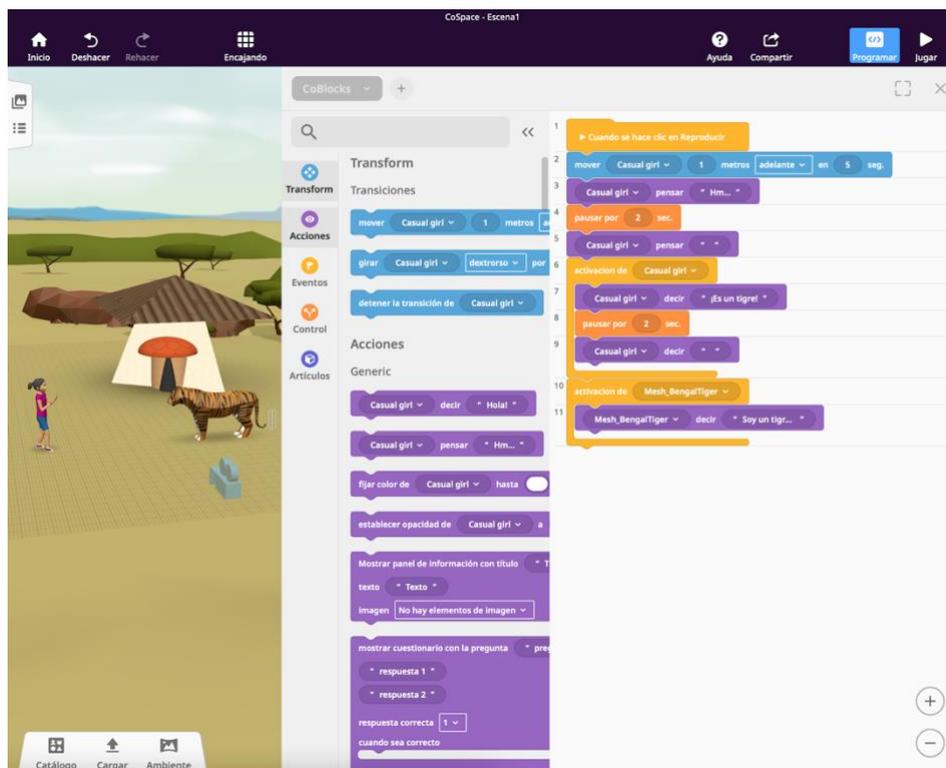
The empty stage on the right is the CoBlocks workspace. For this area, drag and drop the blocks and configure the script.

The list of CoBlocks on the left is the CoBlocks toolbox. In the free version the list of blocks is limited. If you need to try the PRO version for a month you can do it using the following code: COSBEGONAC.



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Once the project is done we can explore it:

- in Virtual Reality
- in Augmented Reality

Play mode allows you to easily explore and move around a CoSpace on any device. Simply open a project and click on Play.

To move around on a computer, use the mouse and arrows or WASD on the keyboard, as you would in a video game. To move on a tablet, use a finger tap on the arrow. Gyro mode

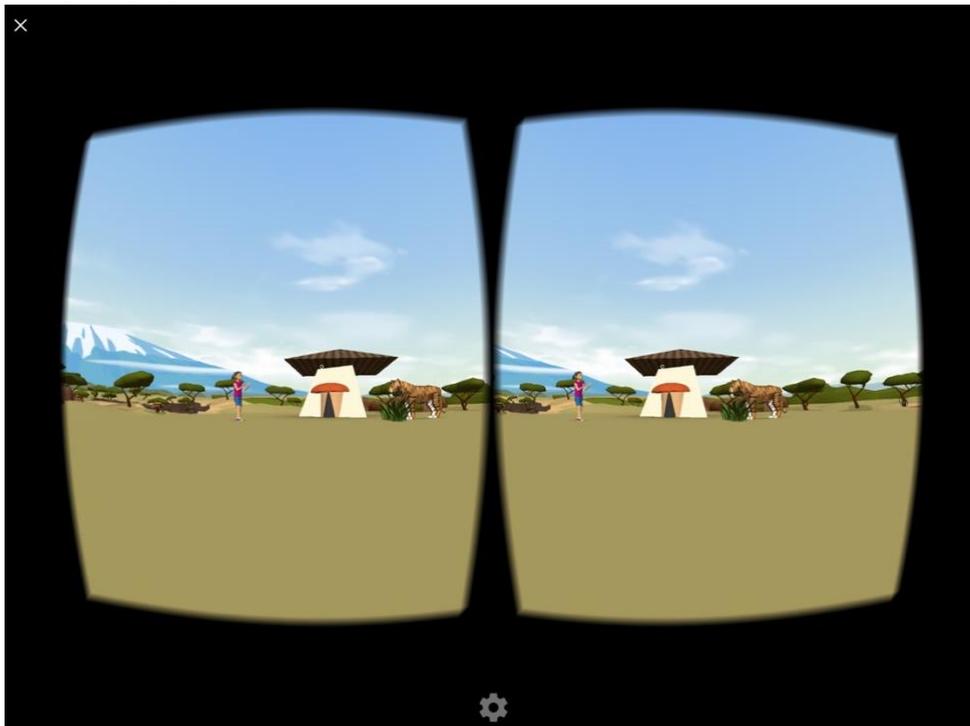




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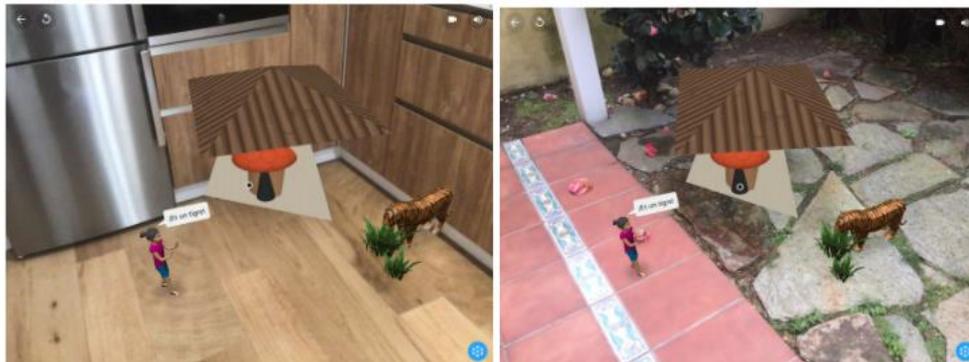
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You can explore a project with Gyro mode using a tablet or smartphone and the CoSpaces Edu app. This allows you to move your device to look around the CoSpace through the screen. By clicking on this button you can enjoy the Virtual Reality experience. To do so, download the app for Android or Apple mobiles, press the Play button, click on the glasses and CoSpaces will be ready to show you two screens, one for each eye. Place your smartphone in the glasses and dive into your project.



To explore in Augmented Reality mode, open the CoSpaces Edu app on a compatible device, hit the Play button and press the AR Button.

Next you need to scan your surroundings to project your scene onto it. Look for a flat surface. When you have it, tap on the screen to place your space and watch it come to life. You can adjust the size of your scene, rotate it and move around with your device.

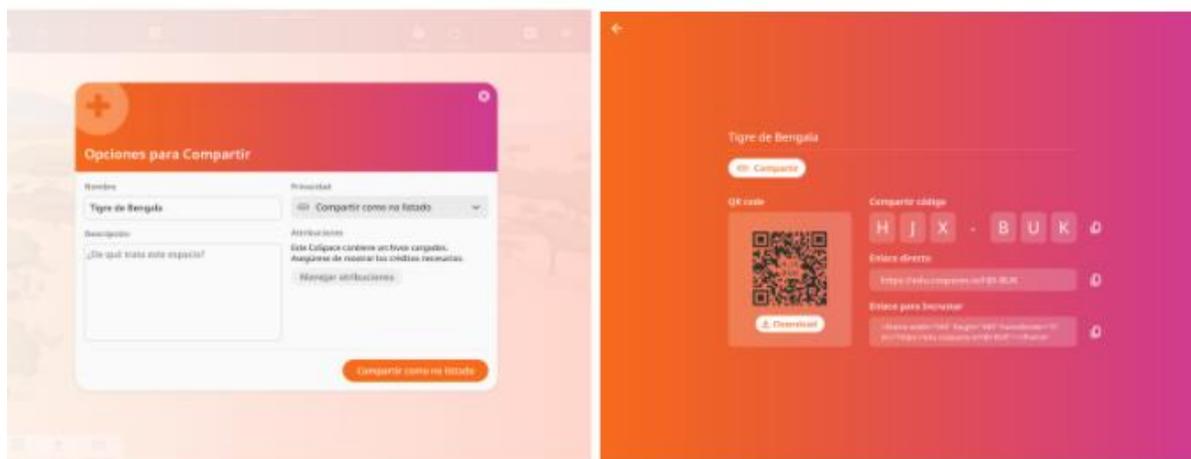




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Once you have explored the project you can share it or embed it on your website through various possibilities.



DIDACTIC POSSIBILITIES

The CoSpaces Edu website offers numerous didactic units in English with step-by-step instructions on how to carry them out. (cospaces.io/edu/lesson-plans).

At my school, [CEIP Ponte dos Brozos](#), we use CoSpaces Edu in the Science Club. There our students programme different projects. One of them "Desplastificate" was the winner in the last Maker Faire Galicia in the Minimakers category. You can access the information on the [Science Club website](#).

Some proposals for using CoSpacesEdu are:

- Virtual museums: <https://edu.cospaces.io/HZP-QFC>
- Infographics: <https://edu.cospaces.io/AUL-XGC>
- Storytelling: <https://edu.cospaces.io/RXZ-GPC>
- Simulations: <https://edu.cospaces.io/BLE-FRM>
- Interactive art: <https://edu.cospaces.io/SWV-JCD>

Videogames:

- Bugs: <https://edu.cospaces.io/ZBS-XNH>
- Labyrinths: <https://edu.cospaces.io/MDN-LUW>
- Escape rooms: <https://edu.cospaces.io/RKB-JKG>

In the following [article](#) you have a proposal to create an Escape Room in Virtual Reality from scratch and resources that can serve as inspiration.

It is advisable that students have space/document/image portfolio to save the information of their project or to make the storyboard. [Here](#) is a template that you can adapt for any project you want to carry out.



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I also share with you a didactic planning model using the Conecta13 Canvas template.

SIMULACIÓN CASTREÑA

<p>COMPETENCIAS CLAVE</p> <p>CMCCT, AA, CD, CCL, SIEE</p>	<p style="text-align: center;">PRODUCTO FINAL</p> <p>Creación de una simulación virtual con figuras geométricas en la plataforma de Realidad Virtual CoSpaces.</p>	<p>RECURSOS</p> <p>Tabletas, Movil, PC, gafas de RV</p>
<p>ESTÁNDARES DE APRENDIZAJE</p> <p>Búsqueda de información (usando las Tic), seleccionar la información relevante. Utilización de la geometría para crear simulaciones de la realidad. Creación de animaciones empleando el lenguaje de programación Blockly.</p>	<p style="text-align: center;">TAREAS</p> <p>Visionado modelo de ejemplo. Lectura de la rúbrica de evaluación. Búsqueda y análisis de la información recogida. Selección de ideas. Boceto. Storyboard. Comprobación lista de cotejo. Creación del proyecto en la plataforma. Presentación a la clase, coevaluación, feedback. Mejoras.</p>	<p>HERRAMIENTAS TIC</p> <p>CoSpaces, Slides, keynote o Classkick, Notas de voz.</p>
<p>EVALUACIÓN</p> <p>Lista de cotejo- evaluación inicial. Rúbrica- coevaluación. Formulario de Google, Portfolio digital</p>	<p style="text-align: center;">DIFUSIÓN</p> <p>Blog de aula, RRSS: Twitter, Facebook, Instagram</p>	<p>AGRUPAMIENTOS ORGANIZACIÓN</p> <p>Pareja, individual y gran grupo</p>

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