3D Kandinsky art in a cube

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Education level: From middle school

Subject: Arts

Format: Individual activity

Duration: Approx. 3 hours

Introduction and lesson objectives:

With CoSpaces Edu and the MERGE Cube add-on, you can have students recreate famous artwork that they can then hold in their hands!

This lesson is specifically geared towards the understanding of abstract paintings.

Students will study the work of Wassily Kandinsky to learn about elements and principles of art and design. Using building blocks, colors, coding and sound, they'll create their own interpretation of one of Kandinsky's pieces.

Learning goals and student benefits:

- Learn 3D creation skills
- Foster creativity
- Develop artistic sense
- Practice working with perspective
- Learn about famous paintings
- Learn coding skills

Preparation:

1. Show students different Wassily Kandinsky abstract paintings.
   Use artwork from no earlier than 1922 for simpler shapes and compositions.
   - Discuss how lines, shapes and colors are used. Talk about space and perspective and how objects are placed in relation to each other.
   - Explain what synesthesia is and how Kandinsky associated colors to chords and instruments.
   - Discuss the influence of the Bauhaus movement in Kandinsky's compositions and choice of simple shapes.

2. Show an example of a completed project so that students understand what's expected of them.
   - Teach students how to use building blocks and modify their shape and color. The opacity tool is very useful for overlapping shapes while seeing through them.
   - Teach students how to use physics, animate objects and a few basic CoBlocks to move and rotate shapes. Encourage them to experiment with different weights, bounciness and coding blocks.
   - Teach students how to add sound to the CoSpace. More advanced students can add multiple sounds that are activated by clicking on different objects in the CoSpace or when coded actions start.

Activity example:

3. Upload a series of images of Kandinsky paintings (after 1922) in a MERGE Cube CoSpace that you'll give as an assignment. It's best to do this in advance to avoid having to approve the images they would find themselves online.

4. Let students choose one of the paintings, drag it next to the cube in their CoSpace and lock it in place. Placing it right away on the right or left side of the cube will ensure that it's visible correctly when the AR experience is played.

5. Students should change the color and texture of the MERGE Cube to match the dominant color of the background of the painting they chose.

6. Students have to use mostly building blocks but some figurative objects can be used if it makes sense with the reference image they chose. Clouds, rocks and trees are very useful for blurry shapes in Kandinsky's paintings. The masking tool can also be used to create complex shapes.

7. Encourage students to use the entire space in the MERGE Cube, to vary the depth of the forms and to check different point of views regularly by turning the virtual cube.

8. Once they've recreated most of the artwork, ask them to animate objects and code actions/interactions with them. Encourage students to explore other CoBlocks than the ones you taught them and try different actions.

9. To finalize the project, ask your students to imagine what kind of sounds or music fits with their 3D animated interpretation. They can record sounds or find copyright-free sound clips on the internet and add them to their creation.

Extension idea:

Ask your students to present their MERGE Cube artworks to the class and discuss their interpretation and re-creation of the original art piece.

Assessment and evaluation suggestions:

- Have your students managed to create an art piece for the MERGE Cube?
- Did your students use various creation tools in CoSpaces Edu?
- Have your students managed to include some Codeblocks code?
- Did your students show interest in the art pieces studied and a good understanding of the study material?

Creation guide

It isn't necessary to recreate every single object in the reference painting as long as the finished project uses enough elements to see the influence of the artist's work.

Some figurative objects can be used if it fits with the artwork. In this example, a snake was used in place of the black undulated line on the right side of the painting.
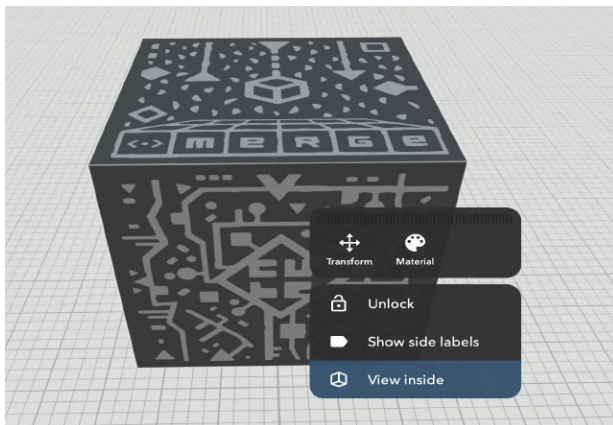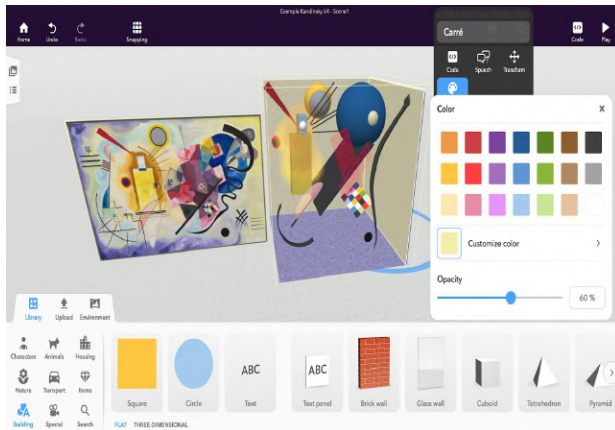

In order to build inside the virtual cube, you have to select the interior view by double or right-clicking the cube and selecting View inside.
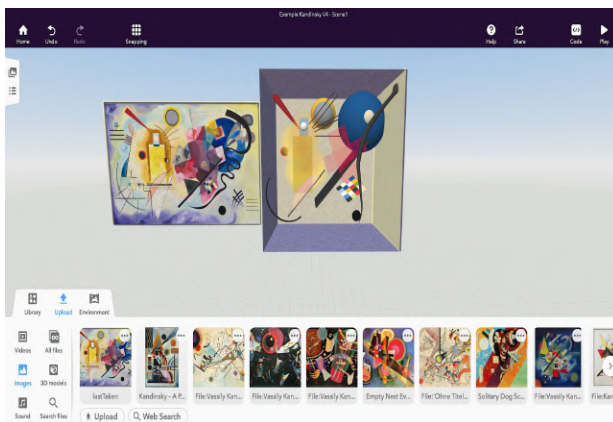

Go to Upload and choose one of the teacher-uploaded paintings from the Images category.

Drag and drop it next to the virtual cube and resize it if necessary so that it is about the same size as the cube.

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To match the cube space to the original painting, change the Color and Texture of the cube.

In this example, Squares were used to add walls to the virtual cube because the background color of the painting isn't consistent everywhere. These can be found under Building in the Library.
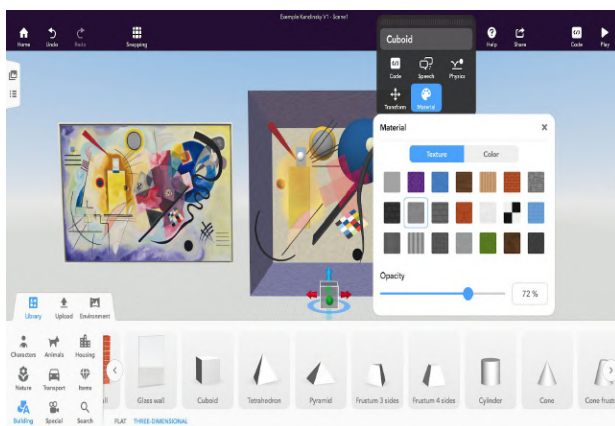
Using **building blocks**, reshaping and resizing them, changing their Color, Texture and Opacity, you can recreate most of the elements in the original paintings.
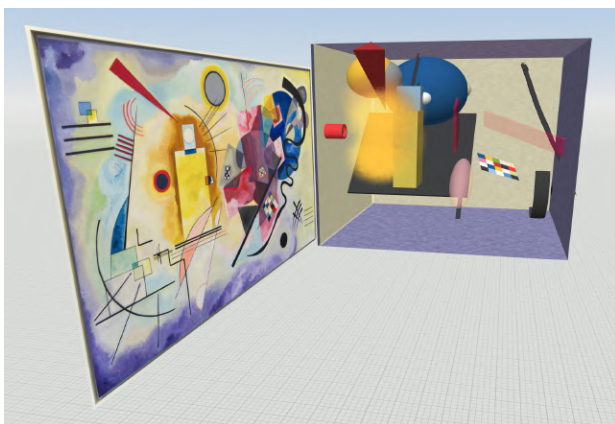
Rotate the view of the virtual cube when placing objects in it.

Use the entire space and make decisions on how the elements are organized in relation to each other.

Decide how much depth you want to give, if any, to the 3D objects.
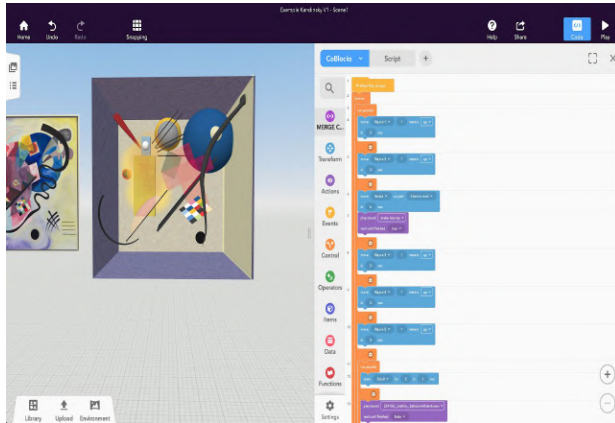
Once you're happy with your creation, you can begin to animate or code actions and interactions with the objects.

This part of the project adds another layer of creativity by transforming a static painting into a moving 3D artwork.
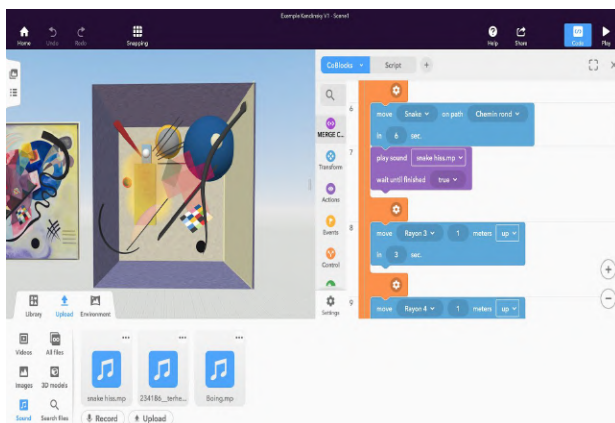
To emphasize Kandinsky's synesthesia, add music to the whole experience or code sounds for different objects.

To add music to the CoSpace, import it under Environment. In this example, copyright-free sound clips were added to the actions of a few objects in CoBlocks. You can also record your own sounds under Upload and Sound.

Example CoSpace

Example Kandinsky

edu.cospaces.io/RPK-MMN