Getting Started
With

BLOXELS
Facilitating an hour-long workshop

What is Bloxels?

Bloxels allows visitors to create their own video games from start to finish. Using a combination of physical and digital elements, visitors build characters, room layouts, enemies, textures, stories, and more.

Goals to keep in mind while leading a Bloxels Workshop

- Empathy for the player (Is the game too easy or hard, even impossible?)
- Design thinking (How do the character and the game relate? Is there a theme? What is the goal of the game? Encourage testing elements out to see what happens)
- Failing forward. (Visitors should expect to rework their games as they playtest and experiment with ideas.)

Getting Started

Always start with a warm welcome. Introduce yourself and ask for the visitors’ names. Have they been to the museum before? Have they used Bloxels? Have they played video games before, and if so, what are some of their favorites? Share some examples of games similar to what visitors will be creating with Bloxels: Super Mario Brothers, Minecraft, Megaman; there are lots of examples to use.

Building Your First Character

Start by giving each participant a Bloxels Board. Explain that this board will be used to build all the elements of a game, and the first element to build is the main character, or the hero of the game. This is the character that the visitor will use to navigate the game they will build later in the workshop. Show the visitors some examples of past characters if they need inspiration. The blue cat mascot that comes installed with the Bloxels App is a great example to start with, but feel free to build your own examples too.
Once a visitor finishes their character design, give them an iPad with the Bloxels App opened. Show the visitor the Character Tab at the top of the screen and have them start a new character.

Show the visitor the Camera icon. Explain that they will be using this feature to capture all the elements they will create on their Bloxels Board. You will probably have to assist the visitor the first time they capture their character, but try to have them do it as much as possible so they can work more independently in the future.

You’ll know the iPad is capturing the Bloxel Board design when the rainbow gauge above the camera window begins to fill up. Once the image is captured, have the visitor review the character on the iPad to make sure it was captured correctly (sometimes the colors are off or blocks are added or removed because of inconsistent lighting in the room.) If the design is correct, have the visitor tap the “Check” button to move on to the next step. If not, tap the “No” button and try again.

Explain that the design the visitor just captured represents the “Idle” state of their character. It’s helpful explain to younger visitors that the word idle means to stand still. Next, the visitor will decide what their character looks like in their “Walk” and “Jump” states by making adjustments to their Bloxel board and capturing those designs just like they did with their original design. Visitors are free to use the same design for all three States.

Now it’s time to build a world for the character to explore!

**Build a New Game**

Double-check that the visitor’s character is properly captured in the iPad, then have them dump the physical Bloxels they used to create their character back into the Bloxel Trough.
To build a new game, start by showing the visitors how the colors of the Bloxels now represent specific elements of the world. It is helpful to have an example room ready on an iPad. The example should feature all the colors available. Show the visitors your example room as it appears in “Layout” mode (on the Bloxels Board) then how it appears as a playable game. This helps visitors understand how the design they build on their Bloxel Board will translate to the iPad.

Educator note: A Bloxels game is made up of multiple Rooms, designed one at a time, that all connect to make one big world. A single Room in the game is the size of one Bloxels block. We’ll discuss adding additional rooms later.

As visitors are building their game, check in with them occasionally by making small helpful suggestions about their design. It is important to let them make mistakes in their designs, so asking open ended questions will be most helpful. For example, How will your character get to that next platform? Do you think your character can jump over all that lava? That’s a lot of enemies! How will you defeat them all?

Some level design tips: characters can jump 2 Bloxels upwards and 3 Bloxels across. A column of blue blocks (water) can be used as a “swimming ladder” to higher platforms. As you gain experience with Bloxels, you’ll find your own tips and tricks too!

Once a visitor completes their first room, show them the Game tab (controller icon) on their iPad. Have the visitor tap the “Start Screen” then “Build a New Game” and then tap the room in the middle of the game world.
Show the visitor the Camera icon and have them capture their room layout just like they did with their characters. Make sure the Bloxel Board layout is captured correctly. Ask the visitor to look over the layout for errors.

**Configuring Your First Room**

Next, you’ll show visitors how to configure their room before they’re ready to play. There are several ways to configure a room.

First, you’ll show visitors how to add their characters to the game. Have them tap on the Configure tab at the bottom of the screen. Next, tap on the tiny character icon at the bottom of the screen. The elements library will open on the left side of the screen. Have the visitor tap their character to add them to the game. Here the visitor can also choose where in the room their character starts the game.

Next, the visitor will tap the levers icon next to the character icon. Visitors can now tap on any Bloxel with an arrow above it to configure that Bloxel.

- Tapping on a Pink Power-up Bloxel allows the visitor to choose what kind of power-up that Bloxel contains; bomb, health, jetpack, map, shrink, or invincibility. (It’s a bomb by default).
- Tapping a Purple Enemy Bloxel allows the visitor to choose how that enemy behaves; walker, flyer, or sentry. (They are walkers by default.)
- Tapping a White Story Bloxel allows the visitor to add text or set the Bloxel as the end of their game.
Playtest!

It’s time to try the game! Give the visitors 5 minutes to play through their game (there are hourglasses in the Bloxels podium if you need them.) Encourage the visitors to find parts of their game that are too easy, too hard, or completely impossible. As they come across these parts, show them how to pause their game and make adjustments in the Layout tab. At this point it is ok to make the adjustments straight in the iPad instead of on the Bloxels Board.

Decorating a Room

Once visitors have played through their game a few times and are happy with the layout, they can move on to decorating the Bloxels to make the game look more appealing.

Show visitors the Decorate tab at the bottom of the screen. Here, visitors can use the elements found in the library panel on the left side of the screen to decorate their game. Visitors can use elements in either the Animation tab or the Boards tab, both found in the Library. Visitors simply tap on the element they want to “paint” with then tap on the Bloxel they want to decorate. Be careful because once a Bloxel has been decorated, it can’t be undone! Also, make it clear that changing the look of a Bloxel does not change how that Bloxel behaves; for example: making a Green Terrain Bloxel look like lava will not damage the player like a Hazard Bloxel.

Adding New Rooms

Once visitors are happy with the way their first room plays and looks, they can begin to add more rooms to their game.
Have the visitor tap on the red Map icon in the bottom left corner to open the World Map. Here, visitors can tap on an adjacent open room (indicated by a plus sign) and expand their game. Visitors are encouraged to design new rooms on their Bloxel Board, but can design directly in the iPad in the Layout tab if they prefer.

Visitors now have all the skills necessary to make a complete game on their own.

**Going Further!**

Often, the instructions listed above will take you to the end of this hour long workshop. However, occasionally you’ll meet visitors looking to go even further. Here are some ideas to suggest for those ambitious visitors:

**Animation:** Most elements in Bloxels can be animated. A good place to start with animation is with playable characters. Each state (Idle, Walk, Jump) can contain multiple frames of animation. It’s fun and easy to make a character bounce up and down in their Idle state, or to have their tail wag as they walk.

**Design new enemies:** Visitors can design new enemies either on their Bloxel Board or directly on the iPad. Enemies should be created in the Animation Tab, which is the tab directly to the right of the Game Tab.

![Animation tab in Bloxels]

Design new textures to decorate with. Examples: bubbling slime pits, brick walls, treasure boxes, spikes!

**Color swapping.** All Bloxel designs are limited to a palette of 8 colors, but visitors are able to customize that from a collection of 32 different colors. Keep in mind if you swap out a color in your palette, from purple to black for example, all Bloxels that were colored with that purple would be swapped out for black.

**The Infinity Wall**

The Infinity Wall is the sharing element of Bloxels. Visitors can upload characters, enemies, or whole games to the Infinity Wall to share with others. Because the Infinity Wall is so massive, each element uploaded to the Infinity Wall is given an X,Y coordinates so visitors can find their creations later. Visitors can also download elements from the Infinity Wall to use in their own games!