

BLOXELS®



EDUCATOR HANDBOOK

WELCOME EDUCATORS

Welcome to Bloxels EDU! If you are brand new to Bloxels, we're excited to see and hear about all of the stories and games your students will create. If you have used Bloxels in the past, we're equally excited that you're part of this next chapter!

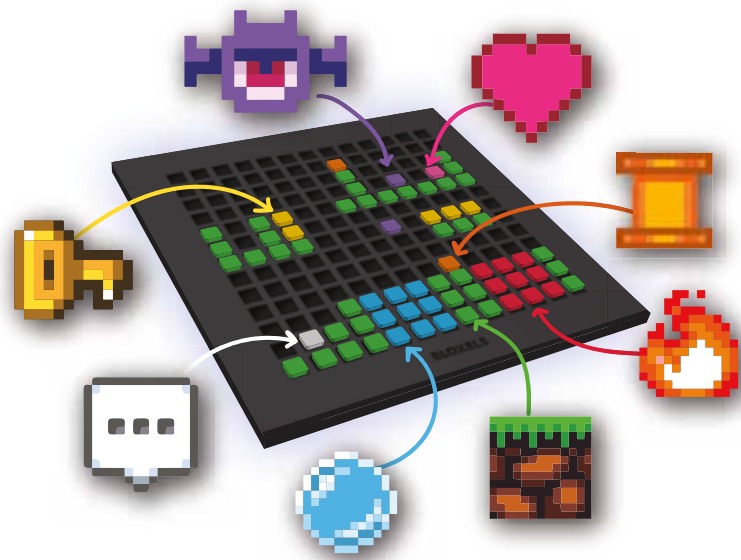
This new edition of the Educator Handbook is intended to help you get started with the new App and Hub, and to provide the ideas, guidance, and confidence to use Bloxels with your students.

Because we are regularly updating the app and content, the digital version of this handbook will always be the most current, and is available as a resource in the Hub.

IN THIS GUIDE

Getting Started

If you've never used Bloxels before, this is a step-by-step guide to getting your class setup and building characters and games quickly.



Game Studio Guide

In the Game Design Studio approach, you ask a small group students to take on roles inside a "Game Design Studio." The guide includes some easy and fun techniques from design thinking to use help students collaborate on their games.

Activities and Standards

We've seen educators use Bloxels in so many innovative ways to teach and to have students show what they know. These activities represent some of the most novel and useful ways to use Bloxels with different levels of students and for different subjects.



GETTING STARTED

THE EDU HUB

The Hub is the essential tool for getting up and running with a class of students. It is also the place to go to throughout, to view and give feedback on student work, download resources, and oversee published student games.



You can access the Hub at **hub.bloxels.com**. If it's your first time there, you will need to create an account using your activation code. If an administrator has already invited you, you will simply login with the credentials they've provided.

CREATE A CLASS

If you (or your students!) want to jump in quickly to the app, there are a few simple steps to follow:

First, create a new class. If you have students you want to add, now is the time to enter their info, or copy and paste an entire list to do this in one step.

Once the class is created, it will be automatically assigned a CLASS CODE.

This is a unique code just for your class. Using this code, students can now join this class from the app. You can change the CLASS CODE to any 6-digit, alpha-numeric code you like, such as APPLES.

GET THE APP

The Bloxels app is available to download through the iOS app store, Google Play store, Amazon Kindle store. The native app is recommended for Chromebooks that can install and run Android apps. The Bloxels app can also be played through a Web browser at **build.bloxels.com**.

Once downloaded, it's time to login to your class... and start building! Follow the login prompts to get into your class, and you should immediately be able to start creating.



IMPORTANT: FIREWALL SETUP

Bloxels requires an Internet connection. If your firewall is blocking access to Bloxels servers, you will not be able to use the app or EDU Hub.

The most up-to-date firewall configuration settings can be found at:

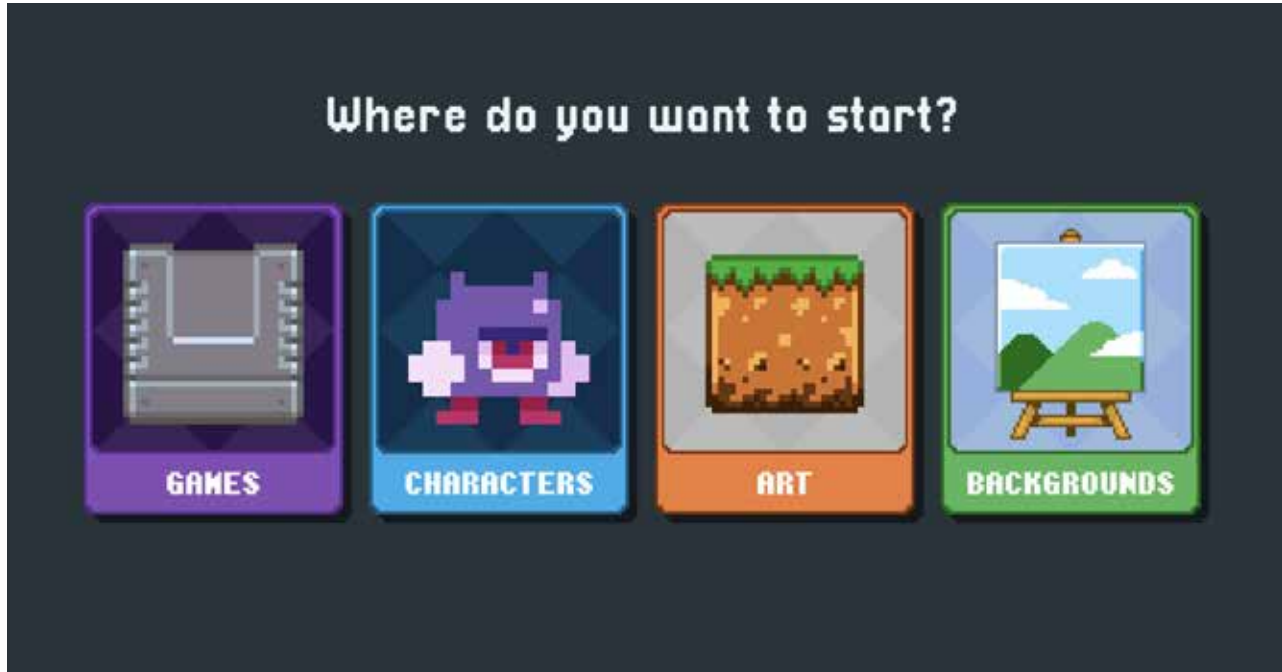
<https://www.bloxels.com/support/firewall>



Please see the most up-to-date information on recommended devices at <https://www.bloxels.com/support/recommended-devices-and-system-requirements>

BLOXELS OVERVIEW

Here's a look at the essential features in Bloxels. For more detail, check out the video tutorials in the Hub and on YouTube at youtube.com/bloxels.



BUILDER MODES

There are four builder modes in Bloxels:

GAMES

Build and test your game with basic blocks- then add characters, art, and more.

CHARACTERS

Change the size, speed, health, powers, and other traits of your hero or enemies with Character Lab.

ART

Create your own art and animations, or remix art from themed asset packs to make it your own.

BACKGROUNDS

Paint the backdrop for your setting, and use art as stamps to create patterns and textures.

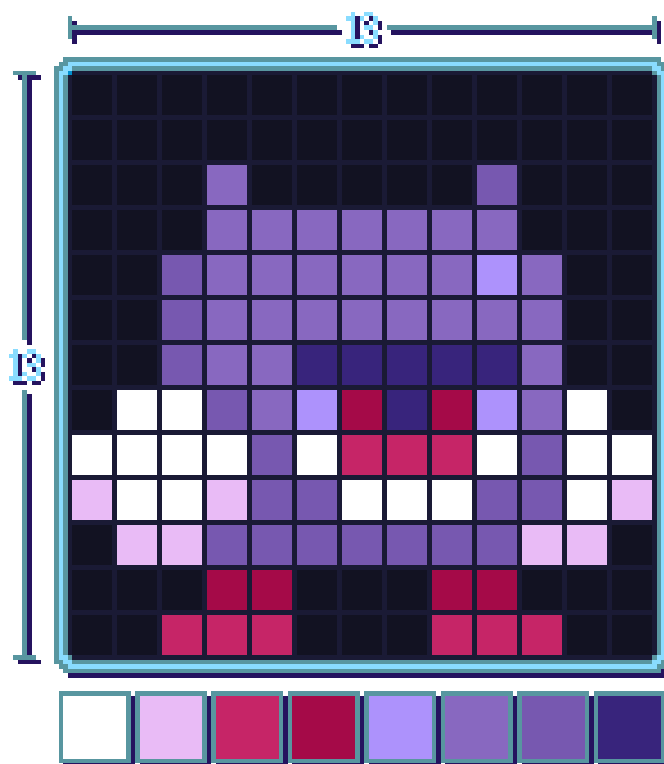
CHARACTER BUILDER

If you're creating a character from scratch, you will have a blank (13x13) canvas to work with. You can start by drawing the pixels for your character's idle state. This is what they look like when they're not moving.

You can change the colors of the pixels you draw anytime with the color selector. By default the basic eight colors are selected, but you can change these. Keep in mind that your character can only have eight colors in total.

When you're ready to animate your character, you can use the animation timeline. You can use the "plus" (+) buttons to add more frames after or before any frame. When you add a frame, it will duplicate the one you currently have active.

You can use the "nudge" tools to move around the character's art for that frame. These are the arrow tools in the toolbar. You can also edit the art for different states of your character- what they look like when moving, jumping, or falling. Experiment with different ways of animating your character and how it looks by clicking "Test" at any time.



You can adjust how fast or slow an animation is by adjusting the FPS or frames per second.

You can also use the copy-and-paste tool to copy animation frames.

If you have created a character on the board, you can capture the design by clicking the capture (camera) button. This will capture your design to work with.



CHARACTER LAB

Characters can have unique abilities—both heroes and enemies. To unlock this, click the “Character Lab” tab in Character Builder.

From here, you can adjust different traits of characters. You can adjust the size, speed, and health with the basic sliders. At any point you can also try out how these work with the ‘Test’ button.

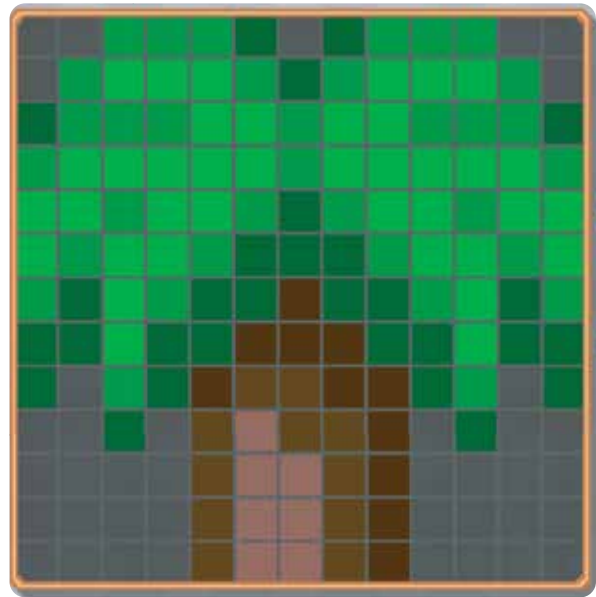
You can also give characters special abilities with the other options in the panel. They can fly and shoot projectiles, among other options. It is good to experiment with this for heroes as well as enemy characters.

All modifications you save to a character will stay with it when you place it in Game Builder.

ART BUILDER

Creating art works the same as creating characters, but it's simpler. You can draw pixels, change colors, and add frames of animation in the same way. You can also capture art from a board with the capture (camera) button.

When building a game, you can add art to your game with the quick palette and decorate any of the eight-block types.



BACKGROUND BUILDER

Background builder is similar to building art, but with more tools and a bigger canvas. Backgrounds can't be animated.

One thing to try first is using the fill tool (bucket) to make a single color for your background. You can also select different brush sizes. If you want to zoom in, click the plus button. This is good for adding finer detail.

Stamps are a special tool in Background Builder. You can use stamps to bring in art that you've made to put in your background. When you bring art into background builder, the stamps



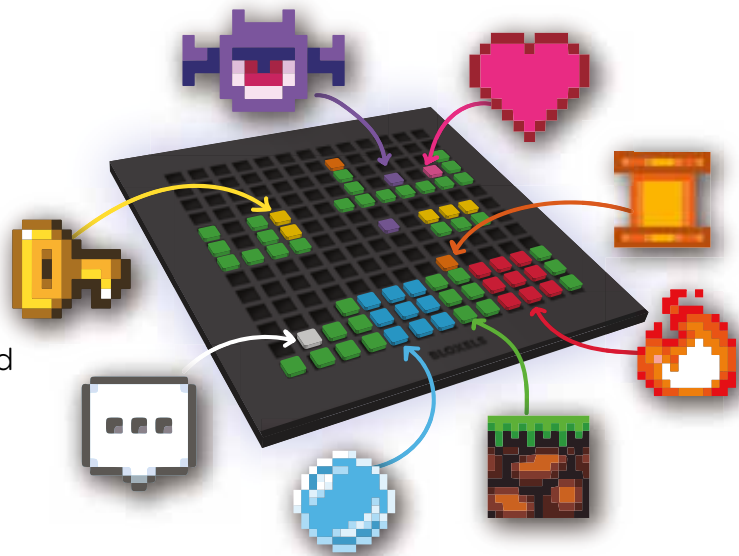
will adjust to the color palette of the background. You can also click the 'snap' option so the stamps will snap to the grid. You can create a more tile-based background this way.

GAME BUILDER

Game builder is where it all comes together- characters, art, animations, and backgrounds- into a full game.

The basic unit of a game is a block. Each block has a unique behavior in the game, and some can be configured to have even more features.

Blocks can be decorated with art to look like anything you like. Here's a look at how they work in game:



BLOCK TYPES



GREEN BLOCK: TERRAIN

These are blocks that you can walk on. In top-down games, they act like walls. You can decorate them to look like whatever you like.



RED BLOCK: HAZARD

These blocks damage the hero (and enemies) when touched. These can look like spikes, flames, lava, or whatever you like.



BLUE BLOCK: LIQUID

These see-through blocks allow the player to "swim" by jumping through it. You can decorate them to look like whatever you like.



ORANGE BLOCK: ACTION

You can pick up and move these, or even set them to explode. In top-down games they can be pushed. Good for puzzles.



PURPLE BLOCK: ENEMY

These baddies will damage the hero and can be configured in a variety of ways. For best results decorate these with animated characters.



YELLOW BLOCK: COLLECTIBLE

These are blocks that you can collect, or use as keys to unlock doors. You can decorate them to look like anything.



PINK BLOCK: POWER-UP

These blocks will recover lost health, grant new abilities like flight or completely transform your hero. Experiment with configurations!



WHITE BLOCK: STORY

Use these to add narrative, checkpoints, end flags, and even warps to other games or locations inside your game.

BUILDING A GAME



Place blocks to start building your game. You'll probably want to start with some ground, and then grow the idea from there. You can swap out the hero, music and backgrounds- and hit "Test" at anytime to try it out!

DECORATING A GAME

Click an empty slot in the palette with the plus icon to open up your library. You can add any of your assets, or anything from the class library or asset packs to your palette.

Once you've added the art that you want, you can start decorating. Draw over the basic blocks to apply art and animations to them.

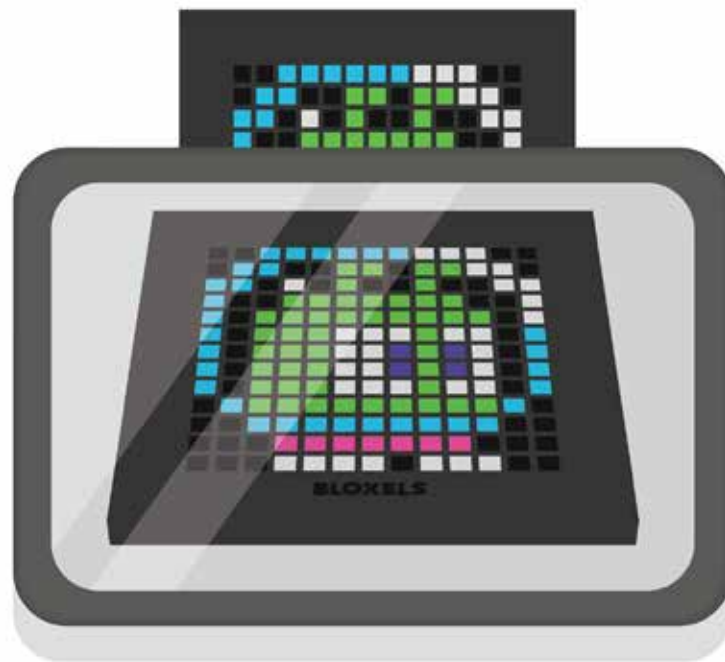
You can also paint art in the 'mid ground' of your game by clicking the tab for its palette, and decorating the same way.

CONFIGURING BLOCKS

You can configure many items in the Game Builder. To configure a block, click on the config tab (the tab with the wrench icon.) This will highlight all the blocks that can be configured.

Power-ups can be configured to give the character more health, or to swap to a different character. Purple blocks can be configured to set an enemy's abilities and traits. Yellow blocks can be configured to be coins or keys, and orange blocks can be configured to explode! White blocks can be checkpoints, end flags, or warps.

CAPTURING BOARDS AND BLOCKS



Here's how to get the best results from capturing the board and blocks:

Prepare the setup: Make sure you have a Bloxels board, a device with a camera (such as a smartphone or tablet), and good lighting conditions. It's recommended to have the board flat on a light surface, so that the edges of the black board are visible to the app.

Click the Camera icon in any builder mode. This will open up the capture screen. . Adjust the height and angle as needed so that the whole board fits in the frame.

After capturing the image, you'll get a preview. If it doesn't look right, adjust your lighting. Avoid shadows or glare that could affect the quality of the capture. Natural daylight or a well-lit room provide the best results.

That's it! If you are working on your own, your creation will now be in the app, where you can continue to work on it, adjust colors, and the like. If you are logged in as an educator, you will also have the option to share it with individual students in your class, or with the whole class. This is useful if you have a single "**capture station**" set up for all students to use.

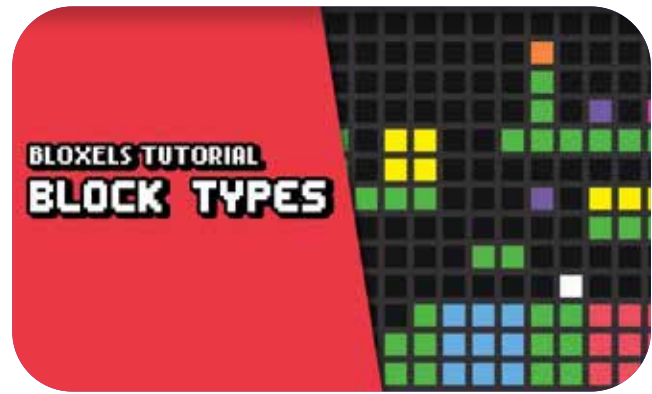
ADDITIONAL RESOURCES

Tutorial Videos

These videos will show you how to get the most out of every feature. Find them in the Hub and at



youtube.com/bloxels



Story Cards

Pull a Character, Item, and Setting card and combine them to generate unique, fun, or just plain goofy ideas for stories in Bloxels.

Also included are special Spark cards to push your ideas even further. Includes 54 cards.



Student Workbooks

This 48-page “Game Design Journal” is a guide for turning an idea into a game. With brainstorming strategies, storyboards, and sketch grids, the Bloxels Workbook covers the ground from ideation building a game with Bloxels.



Characters and Art Deck

Featuring more than 120 characters, art, and Game layouts to build in Bloxels.

Use these cards to inspire your own builds... or even capture a card directly with the Bloxels app, no board or blocks required.

GAME DESIGN STUDIO

In the Game Design Studio approach, you ask a small group students to take on roles inside a “Game Design Studio.” This general approach is adaptable and spans separate working sessions, giving time for you and your students to reflect on their ideas as they progress.

Day 1: Introduction and Ideas

- Introduce the concept of a game jam and the theme, if you have one.
- Form groups students and assign roles and mentors.
- Conduct a brainstorming session to generate ideas for Bloxels games. Having students play featured arcade games and reflecting on them can help with this.
- Guide students in selecting one idea to develop further.

Day 2: Game Design and Planning

- Help students create designs for their game characters, levels, and visuals.
- Using the Workbook and brainstorming strategies, as well as card decks, can help with this step.

Day 3: Development and Prototyping

- Provide a tutorial on using Bloxels.
- Support students as they prototype their work on the Bloxels board.
- Guide students in incorporating and configuring elements like power-ups, collectibles, and characters.

Day 4: Iteration, Testing, and Refining

- Explain the importance of playtesting in game development.
- Facilitate playtests of the Bloxels games among the groups.
- Help students gather feedback and identify areas for improvement.
- Encourage continued playtesting and refinement until satisfied.

Day 5: Playtesting and Presentation

- Organize a playtesting session where groups can showcase their Bloxels games to other students or teachers.
- Be creative! Students may want to build their games into DIY arcade cabinets, which are very cool!
- Encourage constructive feedback and provide guidelines for evaluating the games.

Conclude the game jam with a presentation session, where each group demonstrates their Bloxels game and discusses their development process. Celebrate the students’ achievements and acknowledge their hard work!

ROLES IN THE STUDIO

One of the first things students will need to do is very important- they need a name for their studio! Then students can pick what role they will play (you might also assign this in advance.) Here are some possible roles for ideas:



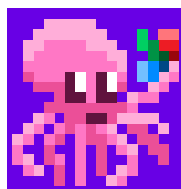
Character Designer

Creates the hero, enemies, and other characters for the game.



Writer

Plans with storyboards and writes the game's narrative in the App.



Artist, Animator

Makes art for the game, including the world and background.



Ad Designer

Helps the team by making box art or a poster to promote their game.



Level Designer

Make the Game layout and integrates the work of the other designers.



Producer

Keeps the project on track and manages the timeline to finish the game.



Developing a Game: Student Workbooks

Over the course of creating a game together, students can use planning guides in their workbooks and brainstorming strategies to collaborate on their game.

COLLABORATING IN THE STUDIO

Working on games together gives students a chance to practice brainstorming and decision making techniques they can apply in any collaborative work. Here are a few we recommend:

Sticky Notes

Each member of the group is handed a stack of sticky notes. A timer is set for 5-8 minutes. In that time, each person writes or sketches their idea as quickly as they can in the allowed time. One idea per sticky note. As soon as the idea is recorded, they move on to the next sticky note. This strategy builds creative fluency and takes practice. This is about generating ideas and not evaluating those ideas.

Mood Board

Give team members a table's worth of magazines, comics, print and craft materials that are ready for re-use. Ask them (individually or as a team) to cut out and paste things they find inspirational for their games to a poster board. Consider dividing up the poster into sections for important game elements like the hero, enemies, and the world (terrain.) If this sparks the imagination to draw something new, great! Draw it on the poster board as well.

Box of Whimsy

Objects make great brainstorming prompts. For teams that are stuck getting started or need a nudge getting to that breakthrough idea, a Box of Whimsy comes in handy. In a shoebox (or bucket, you decide!) keep at least 100 random items that can be drawn at random. Old toys, doodads, and trinkets such as plastic rings, figurines, and even rubber bands all qualify as whimsy once they are placed in the box. To use, have students draw one item that they have to incorporate in some way into their story, or draw three to build a story around.

Mind Maps

Mind maps can help teams discover connections between ideas that they would not as easily see otherwise. For example, by making a mind map of all the characters (enemies, hero, NPCs) in a game, the team can explore how each character is related to the others, resulting in deeper stories. In another example, a team that is trying to communicate a point of view with a game might put that idea in the center and radiate out from it different ways to show, say, and experience that through the game.

Storyboards

Use the storyboard template (or create your own) to plan how your game will progress for the players. Each box could represent an important moment in the beginning, middle, or end of the game. The boxes might also be used to represent a single Bloxels board or sections of the overall game. From one section to the next, don't forget to include checkpoints to help the players understand and feel the progress they are making.

Block Voting

Once a team has brainstormed ideas and needs to decide which ones to use, they can vote with blocks. Each team member is given 10 Bloxels blocks, one color per team member. These blocks will represent votes for each team member. Then for all the possible ideas for their hero, enemies, etc, they vote with their blocks. They can cast their votes (blocks) however they like- all 10 on one idea, or spread them out. Once a vote is cast, that vote can not be reused to vote on the next element.

GAME DESIGN STUDIO PROMPTS

Create a Hero

Using one of the brainstorming strategies, generate some ideas for a few hero ideas. You should have several ideas before settling on a final hero. Use words or quick sketches to get your ideas out.

Guiding Questions

Will your hero represent a person, a thing, or an idea?

If there are two sides to a story, which perspective will you take?

Enemies

Using the same brainstorming strategies, come up with ideas for enemies. Remember, your game can have multiple enemies roaming around.

Guiding Questions

In your story, what causes trouble for your hero?

When your hero travels through different rooms, will the enemies change?

Collectibles

In your game, the hero will collect items along the way - and some can even be keys that open doors to new areas.

Guiding Questions

What valuable item could your hero collect throughout the game?

What makes collecting these items important for the hero?

Should the hero collect a different types of items when traveling through the world you build?

Storyblocks

Placing story blocks around the game helps the player learn more about the world they are traveling through. They can also warp the player to other areas.

Guiding Questions

Could the story blocks be an object or person that fits into the landscape of the game?

How do these items connect to the story or hero?

Power-Ups

Power-ups give the Hero new powers, and can even change the character to something completely different. These are great for gameplay and for showing change in a story.

Guiding Questions

What items could your hero seek out to help them power through the levels?

How do these items relate to the hero or enemies?

How could your Hero change over time, or as the result of a challenge?

Hazards

Hazards can block the way or make some paths more dangerous (and interesting) than others. Those paths can be an important part of the game's story.

Guiding Questions

What is your Hero afraid of, and why?

Describe what your hazards may look like in the game.

How do the hazards connect to the story, hero or enemies?

ACTIVITIES & STANDARDS

We rely on our educators to guide the way when it comes to standards. We've asked them to weigh in on the value of different standards systems, and consistently across the ever-evolving field, ISTE standards are at the top of the list.

Our activities and resources are designed to align with these ISTE standards, so that educators can confidently connect the dots between the creativity of their students and a globally recognized indicator of effective learning and teaching.

These are not the only standards that can be applied to activities involving Bloxels EDU; Common Core and TEKS are also referenced by educators who use the same activities in their classes.

The ISTE Standards we highlight in our activities are:



Empowered Learner

Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.



Digital Citizen

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.



Knowledge Constructor

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.



Innovative Designer

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.



Computational Thinker

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.



Creative Communicator

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.



Global Collaborator

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

RETELL LITERATURE



Grades 3 - 5

In this activity, students design a game that follows the story line of a book or story that they've read. They can choose to retell the story from the perspective of any character.

Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Using the Storyboards template in their workbooks, students break up their story into 3-4 scenes. Each of the panels in the storyboard will represent a room in the game.

Academic Standards



**Innovative
Designer**
4a, 4c



**Creative
Communicator**
6b



**Global
Collaborator**
7c

PROMPTS

Hero

The hero of the game will be determined by the perspective that is taken. Consider retelling the story from a different character's perspective.

Enemies

Identify who or what could be a potential enemy for the hero. Enemies do not have to be an actual character in the story. They could also represent an idea or an object. Use your storyboard to help identify what could be an enemy.

Hazards

The hero in this game will face many obstacles as they journey through their event. Go back to your timeline and identify potential hazards in your event. These can be people, preceding events, or elements of the environment.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What might the hero collect as a reward or as a necessity?

Power-Ups

As the hero encounters hazards and enemies, they are sure to cause some damage. What item might the hero in the story come across that would help give them a boost?

Story Blocks

Using research, place story blocks to help the hero know a little more about their environment. Story blocks may also help them save their progress or warp to another area.

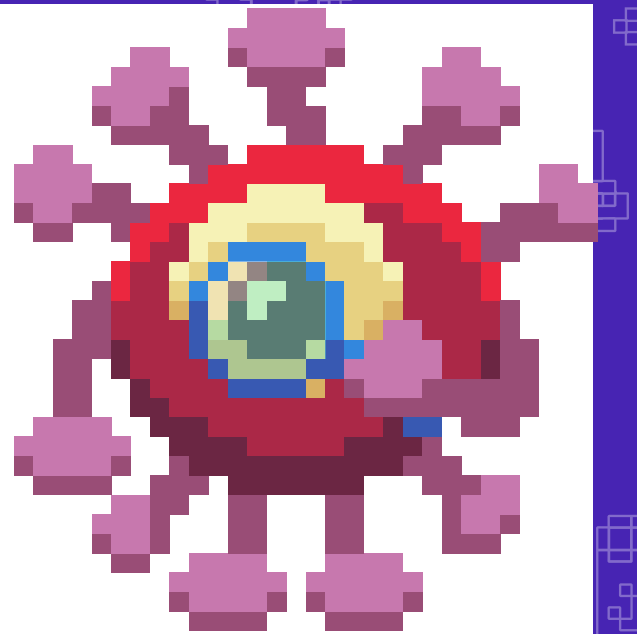
Storyboard

Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

JOURNEY THROUGH A CELL

Grades 3 - 7

Your hero is super tiny. Microscopic! How else could they make their way through a plant or animal cell?! Build a game where this mini hero learns about the parts of a cell as they search for a way out.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Assign each group or student a plant or animal cell. Students research the cell and begin listing the parts and functions of a cell on note cards. Students sketch out their cell and include each of the parts listed on the note cards. Students use this information to help design the pixel art for the game. The cell parts and functions will also drive what their mini hero collects and hazards they might face.

Academic Standards



**Empowered
Learner**
3a, 3b



**Innovative
Designer**
4a, 4c



**Creative
Communicator**
6c



**Global
Collaborator**
7c

PROMPTS

Hero

Identify who or what will represent your mini hero. Use the Sticky Note Brainstorming strategy to come up with as many ideas as you can.

Enemies

Identify what could be a potential enemy for the mini hero. Think about the functions of the cell's parts. Which part might try to prevent an outside organism from being in the cell?

Hazards

The mini hero in this game will face many obstacles as they journey through the cell. Go back to your sketch and note cards and reimagine those characteristics as hazards or obstacles for the mini hero.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What item might the hero come across that would give them a boost or unlock a new area?

Power-Ups

As the mini hero encounters hazards and enemies, they are sure to cause some damage to the mini hero. What item might the hero come across that would help give them a boost?

Story Blocks

Using research, place story blocks to help the hero know a little more about their environment. Story blocks may also help them save their progress or warp to another area.

Storyboard

Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

BRANCHES OF GOVERNMENT

Grades 3 - 5

In this activity, students build a game where the hero journeys through the branches of the US government. The game is made up of at least three rooms. Each room represents a branch of the US government. There will be a room for the Executive, the Legislative, and the Judicial Branches.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Using mind-mapping, students recall the individuals that make up each branch and describe their roles. Teachers can determine how much detail students should include. For example, students can list the number of Supreme Court Justices or list the Justices by name. Continuing with the mind map, students recall the responsibilities for each branch of government.

Academic Standards



**Empowered
Learner**
3a, 3b



**Innovative
Designer**
4a, 4c



**Global
Collaborator**
7c

PROMPTS

Hero

Using the sticky note technique, the group determines the hero of the game. Could the Hero travel through the game as a student or as someone new to the United States?

Enemies

Identify who or what could be a potential enemy or barrier that a particular branch of government or your hero may face. It may be a good idea to change the enemy based on the branch of government the room is representing.

Hazards

The hero in this game will face obstacles as they journey through the government. Identify potential hazards your hero may face.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What might the hero of this game collect as a reward that is representing a branch of government?

Power-Ups

What item might the hero in the story come across that would help give them a little boost or change that could help them continue their journey?

Story Blocks

Using research, place story blocks to help the hero know a little more about the branches of government. Story blocks may also help them save their progress or warp to another area.

Storyboard

Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

ECOSYSTEMS

Grades 3 - 5

Students will design an balanced virtual ecosystem where an organism is able to thrive. Students identify one organism that travels through their environment seeking the elements that it needs to maintain life while avoiding elements that cause harm.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Students identify one of the major ecosystem that their game will be based on. Using mind mapping, the group identifies all of the characteristics in that ecosystem. Living and nonliving organisms, terrain, and climate.

Academic Standards



**Empowered
Learner**
3a, 3b



**Innovative
Designer**
4a, 4c



**Creative
Communicator**
6c



**Global
Collaborator**
7c

PROMPTS

- Hero** Using the sticky note technique, the group determines the hero of the game. The hero can be a living or nonliving thing.
- Enemies** Identify who or what could be a potential enemy for the hero. It could be a living or non-living organism. Use your mind map to recall what types of organisms live that ecosystem.
- Hazards** The hero in this game will face many obstacles as they journey through the ecosystem. Go back to your mind map and identify potential hazards in your ecosystem.
- Collectibles** Collectibles are items in a game that the hero collects along their journey. What might the hero collect in the ecosystem as a reward or as a necessity?.
- Power-Ups** As the hero encounters hazards and enemies in this ecosystem, they are sure to need some help. What item might the hero collect to help them continue their journey?
- Story Blocks** Using research, place story blocks to help the hero know a little more about the ecosystem. Story blocks may also help them save their progress or warp to another area.
- Storyboard** Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

HISTORICAL EVENT

Grades 3 - 5

In this activity, students design a game that represents a single event of historical significance, or a series of events leading up to a larger outcome. Here's a few examples: the Civil War, the Revolutionary War, the Lewis and Clark expedition, the Women's Suffrage Movement and the Civil Rights Movement.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Students research a historical event and create a timeline (or storymap tool from their workbooks) to map out their event. Key pieces to identify are: who was involved, where the event took place, and any factors that influenced the outcome. Students use this information to help design the pixel art for the game.

Academic Standards



**Empowered
Learner**
3a, 3b



**Innovative
Designer**
4a, 4c



**Creative
Communicator**
6c



**Global
Collaborator**
7c

PROMPTS

Hero

Think about from which perspective you want your game to be played from. Using the Sticky Note strategy, come up with as many ideas for a hero as you can.

Enemies

Using the same brainstorming strategy, identify who or what could be a potential enemy for the hero. Enemies for a game do not always have to be a person. They could also represent an idea or an object.

Hazards

The hero in this game will face many obstacles as they journey through their event. Go back to your timeline and identify potential hazards in your event. These can be people, preceding events, or physical characteristics in the environment.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What item might the hero come across that would give them a boost or unlock a new area?

Power-Ups

As the hero encounters hazards and enemies, they are sure to cause some damage. What item might the hero in the story come across that would help give them a boost?

Story Blocks

Using research, place story blocks to help the hero know a little more about the event. Story blocks may also help them save their progress or warp to another area.

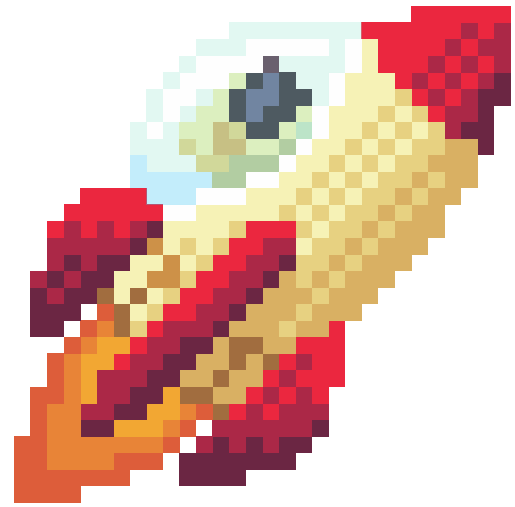
Storyboard

Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

SPACE EXPLORER

Grades 3 - 5

Your hero is a space explorer from another galaxy. Their mission is to visit our galaxy and learn about the planets that make up our solar system. Your explorer will encounter enemies and hazards that will complicate this journey. However, they will receive some support in the form of power ups and collectible items.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Assign each group or student one or two of the planets in our solar system. Students research their planet(s) and use mind-mapping to organize the characteristics of their planets. Students use this information to help design their pixel art. These characteristics also drive what their explorers collect and hazards they might face.

Academic Standards



**Empowered
Learner**
3a, 3b



**Innovative
Designer**
4a, 4c



**Global
Collaborator**
7c

PROMPTS

Hero

Identify who or what will represent your space explorer. You could have living or non-living thing (like a spacecraft) as your space explorer.

Enemies

Identify who or what could be a potential enemy for the hero. Enemies do not have to be an actual character in the story. They could also represent an idea or an object. Use your storyboard to help identify what could be an enemy.

Hazards

The space traveler in this game will face many obstacles as they approach a planet's atmosphere and eventually with the planet's terrain. Go back to the list of the planet's characteristics and reimagine those characteristics as hazards or obstacles for a space explorer.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What could the space traveler collect as a reward or key to the next part?

Power-Ups

As the space traveler encounters hazards and enemies, they are sure to cause some damage to the space traveler. What item might the hero in the story come across that would help give them a boost?

Story Blocks

Using research, place story blocks to help the hero know a little more about the space they're exploring. Story blocks may also help them save their progress or warp to another area.

Storyboard

Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

WORLD TRAVELER

Grades 2 - 6

The hero in this game is traveling the globe and learning as much as they can about different cultures. In this activity students design a virtual world that represents a culture they have studied. The hero travels through this world learning new information during their journey.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Assign each group or student one of the cultures they have studied. Students continue their research and organize their findings. Students use this information to help design their pixel art and landscape of their game. These characteristics also drive what their explorers collect and hazards they might face.

Academic Standards



**Empowered
Learner**
3a, 3b



**Innovative
Designer**
4a, 4c



**Global
Collaborator**
7c

PROMPTS

- Hero** Identify who or what will represent your traveler or hero. The hero might be a stranger to this new place, or a local guide guiding the player around.
- Enemies** Think about the characteristics of this new culture and what object, person, or idea could cause harm to the hero but isn't necessarily bad.
- Hazards** Every culture faces different obstacles. What obstacles are present in the culture you are studying? Which characteristics could be considered hazards for your world traveler?
- Collectibles** Collectibles are items in a game that the hero collects along their journey. What might your traveler collect as they explore this new culture? What has value in this culture?
- Power-Ups** As your hero come across hazards and enemies, they are sure to cause some trouble for them. What item might your traveler come across that would help?
- Story Blocks** Using your research, place story blocks around the game to helps the player learn a little more about this new culture.
- Storyboard** Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

GAME REMIX

Grades 3 - 5

Everyone has their favorite video game and of course their favorite video game hero and villain. In this activity, students take their favorite video game characters, story lines, and settings and mash them up into one super deluxe video game! Image the possibilities of mashing up old retro games with current favorites.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Students work in groups each bringing in elements from their favorite video games or apps. Using the Remix Your Favorite Game graphic organizer, students plan out the hero and enemies for their game. In a remixed game like this, it is important to remind the students about helping the player know what is a friend or foe. In their original games, they may be the opposite of what the students are creating in the remixed game.

Academic Standards



Innovative Designer
4a, 4c



Creative Communicator
6b, 6d



Global Collaborator
7c

PROMPTS

Hero

Using sticky notes, the group determines the hero of the game. The hero might actually be an enemy from an 8-bit retro-style game or maybe the character you use that has the best dance moves from another game you play.

Enemies

In this mashup style game, your enemies could be heroes from the old games you play. You could have an enemy v. enemy style game to battle and see who reigns!

Hazards

The hero in this game will face obstacles as they journey through this mashed up world. Take some of the favorite hazards from other games and try to recreate them in 13-bit style.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What might this hero collect as a reward or as a necessity? Do you use the coins they collected in their original game or do you create an updated version?

Power-Ups

As the hero encounters hazards and enemies, they are sure to cause some damage. What item might the hero in the story come across that would help give them a boost?

Story Blocks

Place story blocks to help the hero know a little more about the games that have been mashed together. Story blocks may also help them save their progress or warp to another area.

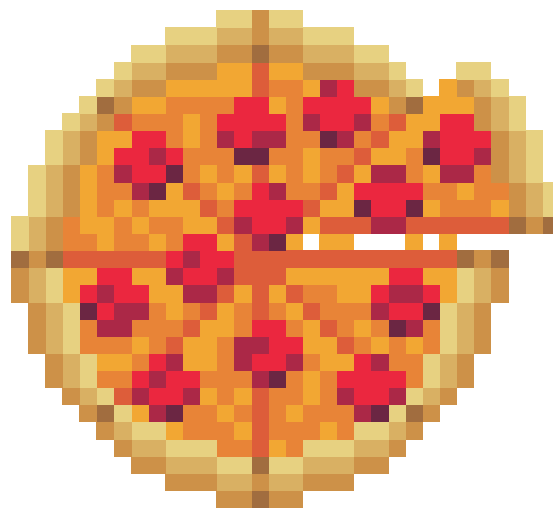
Storyboard

Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

RATIO GAME

Grades 3 - 5

In this activity students design a game that demonstrates their understanding of ratios. Their entire world will be design around ratios. From the colors that make up their hero, to the elements that are found throughout their game. Students work around the constraint of a ratio.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Assign color or block ratios to each of the elements that make up a Bloxels game. For example, teachers assign a ratio of 3:1 to the colors students use to build their Hero. Students then decide how to use that ratio between all of the available colors. With game elements, teacher assign ratios to the number of elements that can be used in the game. For example, teachers assign a ratio of 5:1 for terrain blocks to hazard blocks. As the student build their world, they must stay with that constraint.

Academic Standards



Innovative Designer
4a, 4c



Global Collaborator
7c

PROMPTS

Hero

Using the Sticky Note Brainstorming strategy, come up with as many ideas for a hero as you can. This game is open ended with some color constraints on what you can build with. To help with this, layout all of the colors, with the correct ratios, and begin to piece together a hero.

Enemies

Using the same brainstorming strategy, identify who or what could be a potential enemy for the hero. Enemies for a game do not always have to be a person. Try laying out all of the colors again to piece together an enemy.

Hazards

The hero in this game will face many obstacles as they journey through their event. These can be people, objects, or physical characteristics in the environment. Check with the constraints that the teacher has assigned and build your world accordingly.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What item might the hero come across that would give them a boost or unlock a new area?

Power-Ups

As the hero encounters hazards and enemies, they are sure to cause some damage. What item might the hero in the story come across that would help give them a boost?

Story Blocks

Story blocks may also help the player save their progress or warp to another area.

Storyboard

Using a storyboard template, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like.

MIGRATIONS OF PEOPLE

Grades 2 - 6

For centuries, people have moved across regions and the world for a variety of reasons. Whether economic, social, political or environmental reasons, people are continuing to settle new areas today. Using Bloxels, students identify a group of migrants and design a video game that identifies where their group originated from, why they left, the obstacles they faced and where they settled.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

As a class, use the Bloxels Brainstorming Strategies to begin identifying groups of people that migrated from one region to another. Begin to identify the origin of the group, the reason for their migration and where they settled. Allow students to select one of the groups people to become the hero of their video game.

Academic Standards



**Empowered
Learner**
3a, 3b



**Innovative
Designer**
4a, 4c



**Global
Collaborator**
7c

PROMPTS

Hero

Select one of the groups to be represented by the Hero in your game. This could be a single person or a Hero that represents a group of people.

Enemies

As people migrated they would encounter many obstacles along their way. Using info from your research, determine who or what may have delayed their travels. This may be a person, a group of people, political or social factors.

Hazards

Identify what physical obstacles or hardships your Hero faced. These will help you determine your Hazards. Remember Hazards may be physical characteristics of the region.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What might the hero of this game collect as a reward or as a necessity as it relates to migrating from one region to the next? This might be food, supplies, or equipment.

Power-Ups

As the hero encounters hazards and enemies, they are sure to cause some damage. What item might the hero in the story come across that would help give them a boost? What might the group of people need to survive their travels?

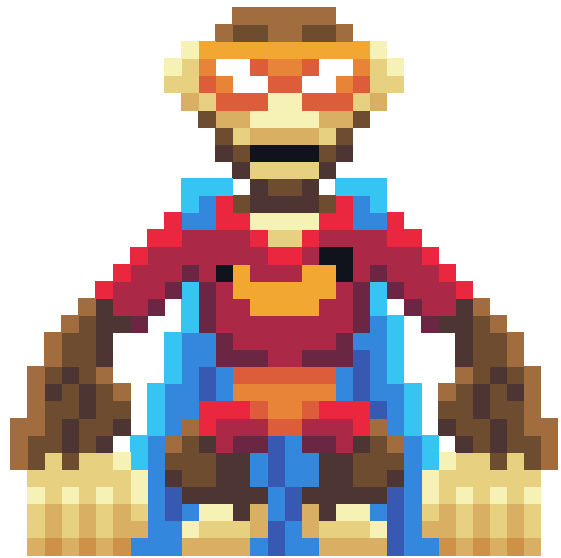
Story Blocks

Using research, place story blocks to help the hero know a little more about the migration story. Story blocks may also help them save their progress or warp to another area.

TELL YOUR STORY

Grades 3 - 8

Students design a video game based on their personal narratives. This activity extends the personal narrative writing assignment to include an interactive walkthrough.



Materials

- Workbooks
- Sticky Notes
- Note Cards
- Markers

Overview

Using the Storyboard templates in their workbooks, students break up their story into 3-4 scenes. Each of the panels in the storyboard will represent a room in the game.

Academic Standards



Innovative Designer
4a, 4c



Creative Communicator
6a



Global Collaborator
7c

PROMPTS

Hero

The hero of the game will be determined by the perspective that is taken.

Enemies

Identify who or what could be a potential enemy for the hero. Enemies do not have to be an actual character in the story. They could also represent an idea or an object. Use your storyboard to help identify what could be an enemy.

Hazards

The hero in this game will face many obstacles as they journey through their event. Go back to your research and identify potential hazards in your event. These can be people, preceding events, or physical elements of the environment.

Collectibles

Collectibles are items in a game that the hero collects along their journey. What item might the hero come across that would give them a boost or unlock a new area?

Power-Ups

As the hero encounters hazards and enemies, they are sure to cause some damage. What item might the hero in the story come across that would help give them a boost?

Story Blocks

Place story blocks to put written text into your story. Story blocks may also help the player save their progress or warp to another area.

Storyboard

Using the storyboard, begin to plan out how the story unfolds. Use each frame to sketch out what a room in the game might look like. Don't worry about the drawing being your best work, just a quick sketch to get your idea out.

ASSESSING GAMES

Students create many artifacts in the building process, but it's their final, published games that represent the culmination of all their work. Here are some ideas for assessing along the way:

Prepare a rubric. You may customize this to your specific learning or content goals, but here is a basic starting point:

Area	Description	Stars (1-5)
Ideation	How well does the game use the different block types and their behaviors?	
Story	How well does the game use storyblocks or other narrative elements to create a story for the player?	
Design	How well developed is the setting of the game, and is it fun to be in? How well does the game inform the player of where they are, where they can go, and what choices they can make?	
Difficulty	Is the game too easy, too hard, or about right? Does it progress in difficulty, or is it about the same way all the way through?	
Emotion	Like stories, games can make players feel many different emotions. How do players feel when they're playing, and is that the intended effect?	
Content	How well does the game incorporate the content or other information required for the project?	
Total Star Rating		

Peer Reviews and Playtesting

Students can download and review anything that another student shares to the Class library, making peer reviews possible as part of developing games. In fact, asking students to give and receive useful feedback can be its own learning goal.

Consider giving them the rubric as a way to guide them; you can even reframe it as “write the review” text with star-ratings for important items.

In-progress feedback

Giving feedback while games are in progress is easiest through the Class Library.

The Class Library is where students can share their games with their peers (and with you) before publishing to the Arcade. When a student shares their game (or any other creation) to the library, you can download your own copy.

To do this, log into the Bloxels app with your email and password, and as an educator you will then pick the class you want to log into. Go to the class library,

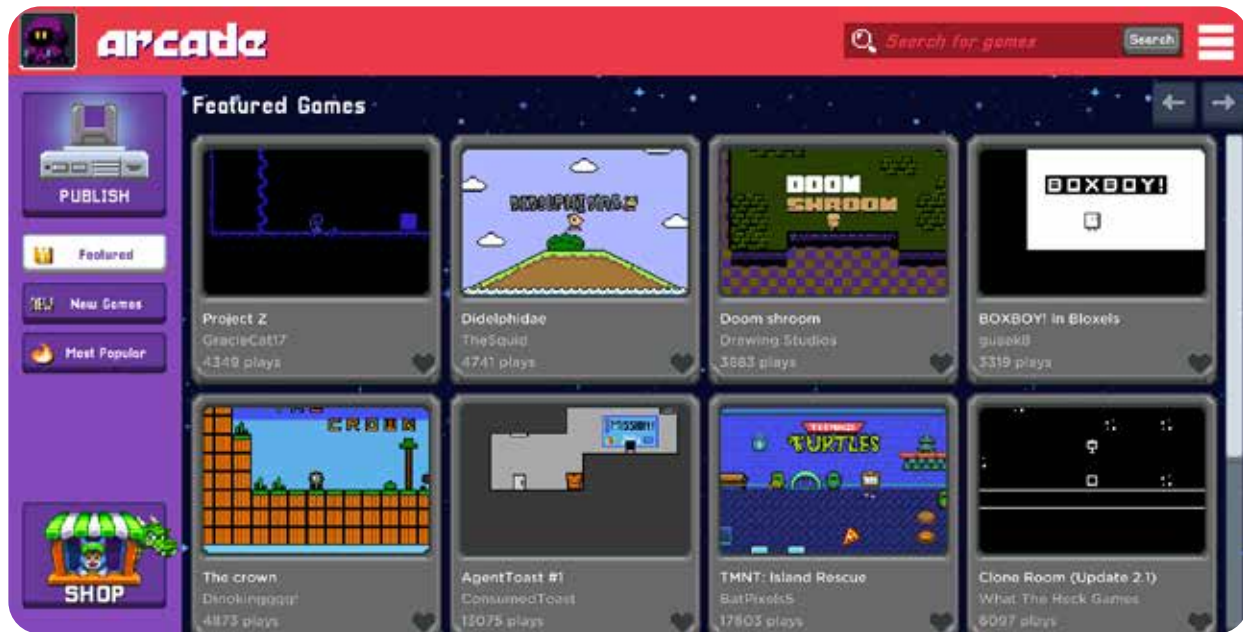


When students share a copy of their game to the class library, it can be downloaded and playtested by anyone in the class. This is under “View All Assets” in the app.

and all games that students have shared/ submitted will be visible. Pick the game you want to review and you will get your own copy to open in the game editor.

This is useful because you can quickly switch between the TEST and EDIT modes to move around the map and see how it is made.

You can use this approach to review anything students create with Bloxels. Students can share characters, art and animations, and backgrounds this way as well.



Published Games

When students are ready, they can publish their games to the Arcade, and they will be publicly available (after being moderated for content by Bloxels). So then how do you assess the finished product? Here are some ideas:

Host an Arcade Night

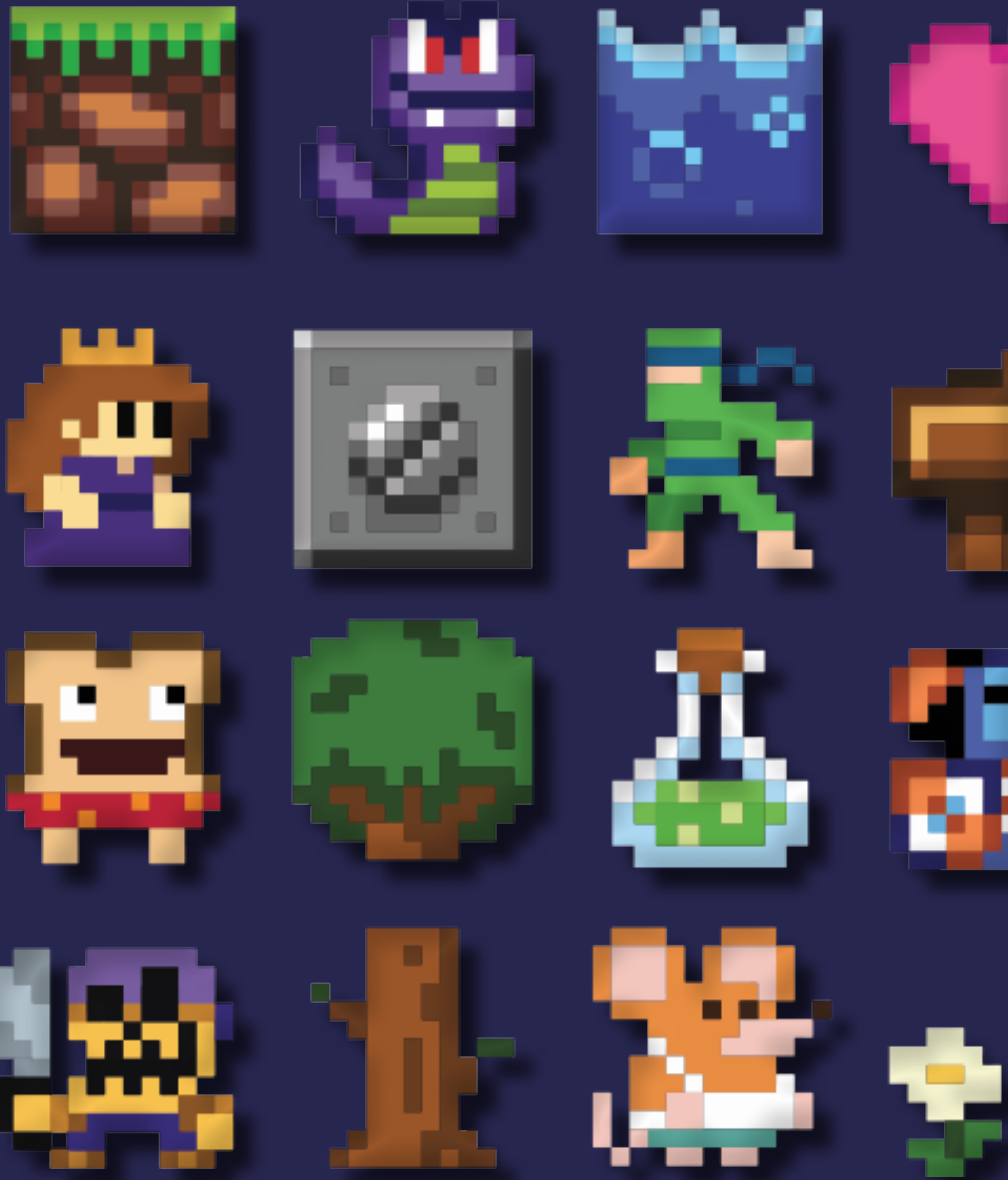
On its own, hosting an “Arcade night,” with games able to be played on a big screen, is a great showcase event. To add a layer of assessment, you can have a standard survey for players to complete after playing a game. This can be a simplified version of your rubric, or even an open-ended form to get qualitative feedback. Consider that you can also get the URLs for each game from the Arcade, and publish them as a collection on a class site or blog.

Make a Let’s Play video

Students can record a playthrough of their games (with voice commentary) and this video becomes the final artifact to assess. Students enjoy showing their games and describing the strategy to beat them, and this also becomes a time-saver, as you do not have to play all the games in completion yourself.

Get the Game’s PDF

Lastly, through the Hub, you can download a PDF of the game’s storytext to review and assess. Through the Hub you can also choose to send feedback to students at any point in the process (they will see the messages when they login to the app.)



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