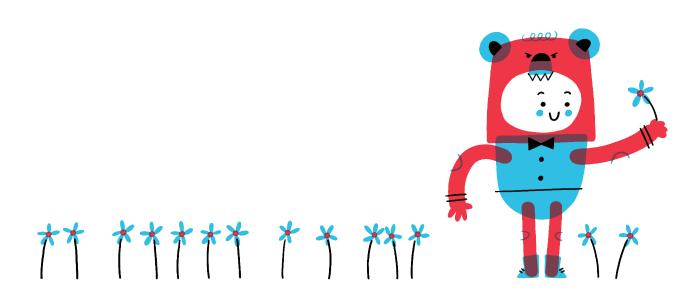


WELCOME EDUCATORS!

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 in the classroom. Because we are regularly adding new resources and activities, the digital version of this handbook will always be the most current, and is available as a resource in the Hub.



IN THIS BOOK YOU'LL FIND

Getting Started

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

Standards

An overview of the standards that Bloxels teaches to, based on input from our educator community.

Brainstorming Techniques

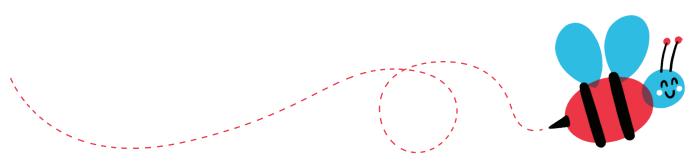
Collaboration is key when asking students to make games together, and these are some easy and fun techniques from design thinking methods to use with Bloxels and your students.

Activities

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.

Additional Resources

Power up your Bloxels game with additional supporting materials, prompts, and in-depth, step-by-step tutorial videos.



GETTING STARTED



First Stop: The Hub

The Hub is the essential tool for getting up and running with a classroom of students. It is also the place to go to throughout, to view and give feedback on student work, and to send messages and award badges for special achievements.

Login

You can access the Hub at **bloxelsbuilder.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 Classroom

If you want to jump in quickly to the app, there are a few simple steps to follow:





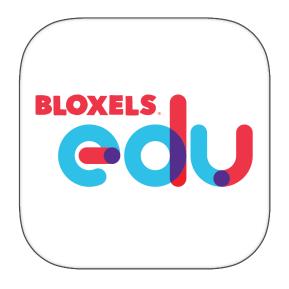
First, create a new class. If you have students you want to add, now is the time to enter their info, or copy and paste an entire list to do this in one step.

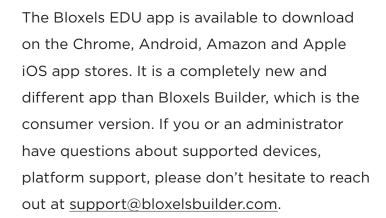


Once the class is created, it will be automatically assigned a CLASS CODE. This is a unique code just for your classroom. Using this code, you can now join this class from the app. You can change the CLASS CODE to any 6-digit, alpha-numeric code you like, such as APPLES.

NOTE: When you create students, they are automatically assigned a simple, pictographic password. They will need the **CLASS CODE** and their password to login. The picture passwords are designed to be memorable, like a short game story: Character, Environment, Collectible, Power-up. So a password could be remembered like this: "The alien in the castle, collecting gems, and picking up potions."

GET THE APP











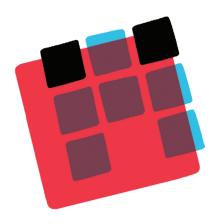


Once downloaded, it's time to login to your classroom... and start building! Follow the login prompts to get into your classroom, and you should immediately be able to start creating.

LET'S BUILD

In-depth video tutorials for all of the tools to make characters, art, backgrounds and games are on the Hub, but to quickly get started, we recommend trying the following:

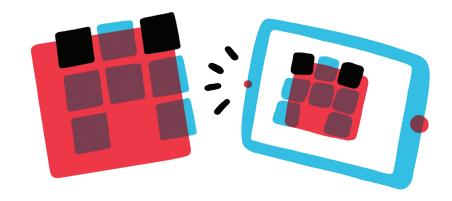


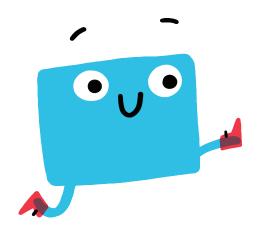


Character First

Use the Gameboard and Blocks to build your first character. Remember, you can always change the colors later in the app.

Once you're ready to capture your Gameboard, use the app to Create a new Character. Tap the Capture button, and move your entire board into the device's camera view.





Once you've captured the board, add animation states for the **WALK** and **JUMP** states for your character.

How long did that take? Time flies when you're having fun! It's not unusual to spend a long time with the board, thinking and planning your character and then animating in the app.

Once you've created a character, it's accessible in your library. From here, you already understand the basics of build, capture, and play. Making Art works the same way, and you can animate it as well.

GAME TIME

When you're ready, it's time to make a Game. On the board, what's different now is that the colors mean something. Different colors define how blocks behave as part of the world. Students immediately grasp that "Green is Ground" and "Red is Lava" and often figure out the rest on their own. But for reference, here are the block types:



GREEN

Terrain

These are blocks that you can walk on. You can decorate them to look like whatever you like.



RED

Hazard

These blocks damage the player and enemies when touched. They can be lava... or anything else you imagine.



BLUE

Liquid

These blocks allow the player to "float" and swim by jumping through it. In gameplay they have a special effect, but can be decorated with your art to look like anything- a foggy mist, or a cloud, or even a ladder.



PURPLE

Enemies

These baddies can be configured in a variety of ways.



ORANGE

Action

These blocks don't like to sit still. They can be picked up by the player, moved around, and thrown at enemies to defeat them.

They are a great building block for puzzles.



YELLOW

Collectible

These blocks can be collected by the player. They can be used to show hints for secret paths, reward difficult maneuvers, or even make collecting them part of the story.



PINK

Power-ups

These grant the player special powers when picked up. The ability to fly, or to change into a different character, are all part of a good game and a fun story.



WHITE

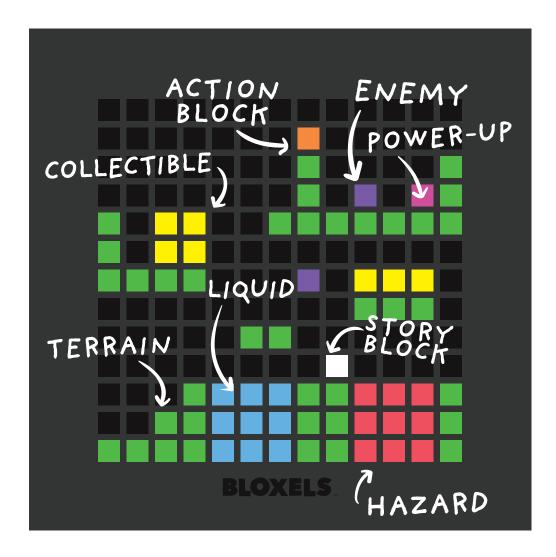
Storyblocks

These are used to put narrative, checkpoints, and end flags into the game.

When making art with the Gameboard and Blocks, you can change the eight blocks colors into any of the 1,429,702,652,400 possible color combinations!

Build Your Layout

Using the Gameboard, create a single "Room" for your new game, using the blocks. You'll probably want to start with some ground, and then grow the idea from there. When you're ready, Create a New Game in the app.



You'll first see the zoomed-out view of your game, which is 13 rooms high by 13 rooms wide. In the middle is the player start position. Go ahead and zoom into that room. Here, you are looking at a single room- now tap capture to bring your Gameboard into it. Once that's complete, you should be able to press play and immediately start play-testing your layout. How does it work? Want to change something? Go back to the Builder and make your edits.

Decorate with the Quick Palette

At the bottom of the screen, you'll see an empty tray. This is the Quick Palette that you can load up with art and characters to use to decorate your game.



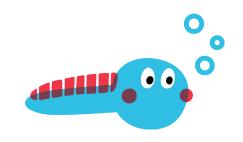


Tap a blank spot, and select art from your library to put into it. Try adding a few things to your Quick Palette you will need for your game- art for different types of terrain, water, and characters you can use as enemies. You can drag and drop elements from your library to the Quick Palette, and you can drag elements off of it to open a new spot.

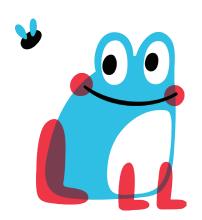
Back in your game, you can now highlight elements in your Quick Palette to decorate your blocks with.

Character, Meet Game

If you haven't already discovered it, it's time put that character you made earlier into this game! At the top of the game in the app, tap the panel to bring down the game configuration settings. Here you can choose your hero, your background, and your music for your game. Also, you can pick how your game would appear in the library by selecting its cartridge, and the frame of animation to show of your hero.







Configure Your Game

Some block types can be configured differently to change their behavior.

One of the most important ones is the white Storyblock. When you have white selected, you can choose a block to add text to it, which will appear for your players in the game. You can also choose its behavior- if it's just text, if it's a checkpoint (the player restarts here when they run out of health) or if it's an end flag (ending the game.)

Another important configurable block is Power-ups. These give the Hero special powers, including the ability to change the Hero with the Character Swap Power-up. With this Power-up, the Hero can change to any other character you select from your library. This can mean small changes, such as the same Hero but now wearing sunglasses, to bigger transformations. Try it out and test to see!

Big Picture

When you're ready, you can make a background for your game. Backgrounds are big (139 pixels x 139 pixels) and have their own special tools. Create a new one in the app, and try out some of these techniques:

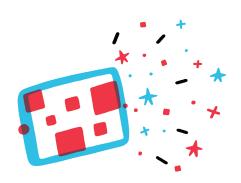
Use different brush sizes and zoom levels to make big swaths of color or fine detail.

Use Art you've created and added to the Quick Palette to "stamp" frames onto the canvas. Try an animated piece of art to see different effects you can get from the frames of animation.

Change the colors in your palette to make a daytime scene night, and vice-versa.

Share with the Class

You can add more rooms to your game, or more characters and art... it's really up to you! When it's time to publish your work, check out the class library. This is a shared collaboration space for the entire class- it's where students can pass work back and forth and share their finished games and creations. Any asset in your private library can be published here, and anything in the class library can be downloaded to your private library.



BACK IN THE HUB

When you log into the Hub, everything students create is visible. In this way, you can track what students are working on, and give them feedback along the way. From the classroom view, pick a student to see everything they've made, including the story blocks they've written into their games. If you see something you need to moderate, you can do that here.

Messages & Badges

You can also send students messages and feedback on a particular piece of work, or send a message to an entire class. They will receive these messages the next time they log into the app.

For special achievements, you can create and award badges here as well. This may be for completing an assignment, or for winning a contest. Some badges are built into the system, and students receive them for accomplishing things like creating their first complete game; the rest is up to you to create and award.

One Last Thing

In the Hub, you can also add Asset Packs to your student and class libraries. These asset packs are designed to kick start the building process, and are great for saving time and for getting students to remix content for their games. Many Asset Packs are related to Activities that are outlined in this book, such as the Journey Through the Cell. Add an Asset Pack from the Hub, and it will show up as usable assets in all student libraries for that class.

STANDARDS WE BELIEVE IN

We rely on our educators and educational Ambassadors 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. As we continue to grow our library of activities, we will always be assessing, and asking our educators, what they find most valuable.

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.



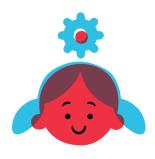
Knowledge Constructor

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.

Visit **iste.org/standards/for-students** for an in-depth explanation of each standard.

BRAINSTORMING STRATEGIES

If we want students to learn how to collaborate, we have to do more than just put them in teams. 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 like!



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 Whimsey 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 whimsey 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.

Decision Razor

A Razor helps teams make design decisions. A good razor sounds like a yes/no question that "cuts" to the heart of a choice. For example, if a team is making a game about castles in medieval Europe, they might think about putting dragons into it. If their razor was "Is ______ historically accurate?" dragons would not pass the razor test (sadly.) But other elements, like historically accurate flags and coats of arms, would pass the test. The razor helps keep the design sharp, and can help teams quickly decide what is in and out of the game.

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 structure emphasizes the collaboration, creative problem solving, and critical thinking skills needed when designing a video game. 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.

Assign Students Groups & Roles

One of the first things students will need to do is very important- they need a name for their studio!

After naming their group, each student needs a role to play. You may assign this in advance or let the students self-select. Although teams are expected to brainstorm together, ultimately the role they choose determines what part of the game they will individually contribute. Here are some roles for a five-person team:

Studio Name

Hero Designer

Uses Bloxels Gameboard and App to create the hero.

Enemy Designer

Uses Bloxels Gameboard and App to create enemies.

Layout Designer

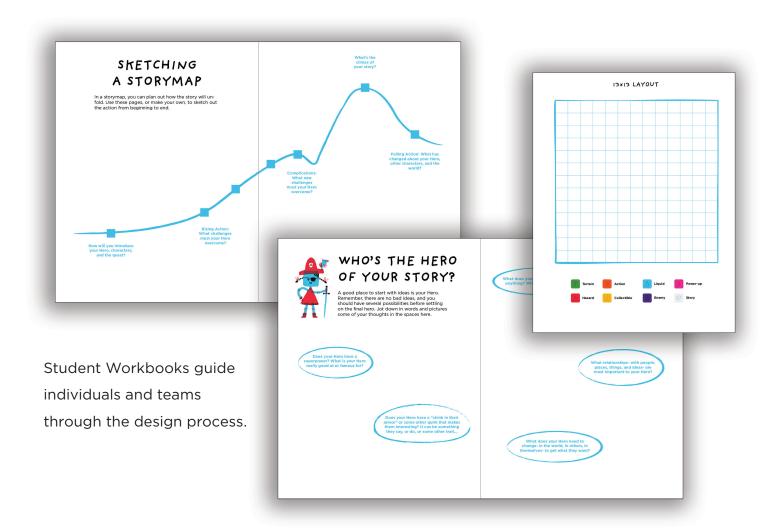
Primarily uses the Bloxels Gameboard to make Game Rooms and Decorations

Story Designer

Uses storyboards to plan the game's story, and writes the Story blocks in the App

Ad Designer

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

GAME DESIGN STUDIO

Student workbooks invite students to explore their ideas in depth. Here is some guidance you can provide:

Brainstorming the Hero

Using one of the brainstorming strategies, generate some ideas for a few hero ideas. Don't worry about designing pixels or choosing colors. 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?

Finding the Enemy

Using the same brainstorming strategies we used for the hero, come up with ideas for a few enemy ideas. 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 to earn points. The hero can collect anything.

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. These blocks are great for helping them know what is a friend or foe in the game.

Guiding Questions

What valuable item could your hero collect throughout the game?

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 item 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?



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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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



Collaborator

7с

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 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 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 little boost of life or reveal a power-up that could help them continue their journey?

Story Blocks

Now that the research is done, placing story blocks around the game helps the hero know a little more about their environment. It may also help them understand what is a friend or foe.

Storyboard

Using the storyboard graphic organizer, 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 and to help teammates see your thinking.



The Retell Literature Achievement Badge!

Remember, you can award students who complete this challenge with the badge in the Hub.



JOURNEY THROUGH A CELL

Grades 3 - 5

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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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



npowere Learner 3a, 3b



Innovative Designer 4a, 4c



Creative Communicator 6c



Global Collaborator 7c

Next Generation Science Standards
MS-LS1-1 MS-LS1-2 Grades 6-8

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

Using the same brainstorming strategy and the parts and functions on the note cards, identify what could be a potential enemy for the min hero. Think about the functions of the cell's parts. Which cell 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 might the mini hero collect as a reward during the journey.

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 mini hero come across that would help give them a little boost of life or reveal a power-up that could help them?

Story Blocks

Now that the research is done, placing story blocks around the cell will help the mini hero know a little more their environment. It may also help them understand what is a friend or foe.

Storyboard

Using the storyboard graphic organizer, 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 and to help teammates see your thinking.



The Journey Through a Cell Achievement Badge!

Remember, you can award students who complete this activity with the badge in the Hub.



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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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





Innovative Designer 4a, 4c



Global Collaborator 7c

Hero

Using the sticky note brainstorming 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. So does the government while trying to stay true to the US Constitution. Refer back to your graphic organizer and identify potential hazards your hero or the government 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 or as a necessity as it relates to the room that is representing a branch of government.

Power-Ups

As the hero encounters hazards and enemies along their journey, they are sure to cause some damage. What item might the hero in the story come across that would help give them a little boost of life or reveal a power-up that could help them continue their journey?

Story Blocks

Now that the research is done, placing story blocks around the game helps the hero or player know a little more about the government. It may also help them understand what is a friend or foe. Check back to your graphic organizer and identify what object could represent a story block.

Storyboard

Using the storyboard graphic organizer, begin to plan out how the hero's journey through the government. Remember, a minimum of three room is required. Use each frame to sketch out what a room in the game might look like. Don't worry about drawing your best work. These are quick sketches to get your idea out and to help teammates see your thinking.



The Branches of Government Achievement Badge!

Remember, you can award students who complete this activity with the badge in the Hub.

ECOSYSTEMS



Grades 3 - 5

An ecosystem is a community of beings that interact with living and nonliving things an environment. 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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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



npowered Learner 3a. 3b



Innovative Designer 4a, 4c



Creative Communicator 6c



Global Collaborator 7c

Next Generation Science Standards

2-LS2-2 Grades K-2

3-LS2-1 3-LS4-4 Grades 3-5 MS-LS2-1 MS-LS2-3 Grades 6-8

Hero

Using the sticky note brainstorming technique, the group determines the hero of the game. The hero can be a living or nonliving things.

Enemies

Identify who or what could be a potential enemy for the hero. What would be something that would harm the organism that is the hero. It could also 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 their event. Go back to your mind map and identify potential hazards in your ecosystem. These could again be living or non-living things such as the physical characteristics in the environment.

Collectibles

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

Power-Ups

As the hero encounters hazards and enemies in this ecosystem, they are sure to cause some damage. What item might the hero in the story come across that would help give them a little boost of life or reveal a power-up that could help them continue their journey?

Story Blocks

Now that the research is done, placing story blocks around the game helps the hero or player one know a little more about the ecosystem. It may also help them understand what is a friend or foe. Check back with the mind map and identify what object could represent a story block.

Storyboard

Using the storyboard graphic organizer, begin to plan out how the hero's journey through the ecosystem 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 and to help teammates see your thinking.



The Ecosystems Achievement Badge!

Remember, you can award students who complete this activity with the badge in the Hub.



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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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



Learner 3a, 3b



Innovative Designer 4a, 4c



Creative Communicator6c



Global Collaborator 7c

Hero

Using the Sticky Note Brainstorming strategy, come up with as many ideas for a hero as you can. Think about from which perspective you want you game to be played from. For example, if you decide to recreate one of the battle from the Civil War, will your hero be from the Union or the Confederacy?

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. Use your timeline 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 physical characteristics in 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 little boost of life or reveal a power-up that could help them continue their journey?

Story Blocks

Now that the research is done, placing story blocks around the cell will help the mini hero know a little more their environment. It may also help them understand what is a friend or foe.

Storyboard

Using the storyboard graphic organizer, 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 and to help teammates see your thinking.



The Historical Event Achievement Badge!

Remember, you can award students who complete this activity with the badge in the Hub.



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 collectable items.

Materials

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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



Next Generation Science Standards
MS-ESS1-3 Grades 6-8



Innovative Designer 4a, 4c



Global Collaborator 7c

Hero

Identify who or what will represent your space explorer. You could have living or non-living thing (ex. 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 during the journey

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 space traveler come across that would help give them a little boost of life or reveal an awesome jetpack power-up?

Story Blocks

Now that the research is done, placing story block around the planet will help the space traveler know a little more about the planet. It may also help them understand what is a friend or foe.

Storyboard

Using the storyboard graphic organizer, 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 and to help teammates see your thinking.



The Space Explorer Achievement Badge!

Remember, you can award students who complete this activity with the badge in the Hub.



WORLD TRAVELER

Grades 2 - 6

The hero in this game is traveling the globe and learning as much as they can about different cultures. From customs and traditions to governments and languages. In this activity students design a virtual world that represents a culture they have studied. The hero travels through this virtual world learning new information about what they see and who they interact with during their journey.

Materials

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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





Innovative Designer 4a, 4c



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

We like to think enemies are the bad guys in our games. We challenge you to think of the enemies in this game as something within a culture that is good. Think about the characteristics of your culture and what object, person, or idea could cause harm to the hero but isn't necessarily bad. I could be something that is preventing a culture from growing or a misperception about a culture.

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 give them a little boost of life or reveal an awesome jetpack power-up?

Story Blocks

Now that the research is done, placing story block around this new world helps the space traveler know a little more about this new culture. It also helps them to understand what is a friend or foe.

Storyboard

Using the storyboard graphic organizer, begin to plan out where the world traveler explores first. 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 and to help teammates see your thinking.



The World Traveler Achievement Badge!

Remember, you can award students who complete this activity with the badge in the Hub.

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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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

Hero

Using the sticky note brainstorming technique, the group determines the hero of the game. The hero might actually be a enemy from a 8-bit retro-style game or maybe the character you use that has the best dance moves from that app 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 as the most evil enemy!

Hazards

The hero in this game will face obstacles as they journey through this mashed up video game world. Take some of the favorite hazards from other games and try to recreate them 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? This could get pretty interesting. 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 along their journey, they are sure to cause some damage. What item might the hero in the story come across that would help give them a little boost of life or reveal a power-up that could help them continue their journey?

Story Blocks

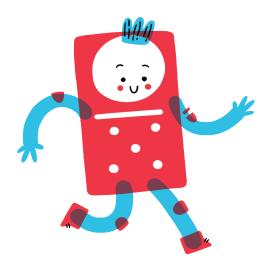
Placing story blocks around the game helps the hero or player one know a little more about the game. In this activity, it's important to let your player know what is good and bad. Remember, you're mashing up several video games and what may be good in the old game, may be an enemy in your game.

Storyboard

Using the storyboard graphic organizer, begin to plan out how the hero journeys through the game. Use each frame to sketch out what a room in the game might look like. Don't worry about drawing your best work. These are quick sketches to get your idea out and to help teammates see your thinking.



The Game Remix Achievement Badge!



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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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

7с

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. They could also represent an idea or an object. 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 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 little boost of life or reveal a power-up that could help them continue their journey?

Story Blocks

Placing story blocks around your world will help the player know a little more about the environment. It may also help them understand what is a friend or foe.

Storyboard

Using the storyboard graphic organizer, 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 quality of your drawing. Just a quick sketch to get your idea out and to help teammates see your thinking.



The Ratio Game Achievement Badge!



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

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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





Innovative Designer 4a, 4c



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. Using the mind mapping brainstorming graphic organizer, begin to expand on each of the elements you identified as a class about this group.

Enemies

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

Hazards

Using the information from your mind map, begin to identify what physical obstacles or hardships your Hero faced as they moved. 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 along their journey, they are sure to cause some damage. What item might the hero in the story come across that would help give them a little boost of life that could help them continue their journey? What might the group of people need to survive their travels?

Story Blocks

These will be the items that may have helped your Hero move from one region to the next. These can be in the form of a person or elements found in the environment.



The Migrations of People Achievement Badge!



TELL YOUR STORY

Grades 3 - 8

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

Materials

- Student Workbooks
- Sticky Notes
- Note Cards
- Markers

Teacher Instructions

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

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 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 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 little boost of life or reveal a power-up that could help them continue their journey?

Story Blocks

Now that the research is done, placing story blocks around the game helps the hero know a little more about their environment. It may also help them understand what is a friend or foe.

Storyboard

Using the storyboard graphic organizer, 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 and to help teammates see your thinking.



The Tell Your Story Achievement Badge!

ADDITIONAL RESOURCES

Here are some ways to power-up your Bloxels game:

Tutorial Videos

These videos will show you how to get the most out of every feature in Bloxels EDU, from building your first game to creating your own badges. Find them in the **Hub**.

Game Jams

Want to host a game jam or competition at your school or with your club? We have hosted these all over the world with small and big groups, for weeks or for a few hours. We offer tips and advice in the **Hub**.



Bloxels EDU Student Workbooks

These workbooks include the guides and templates that students use to brainstorm, plan, and design their games. Available at **store.bloxelsbuilder.com.**

Story Builder Cards

For students who need a little help coming up with ideas for their stories, these decks let them draw random character, environment, and collectible ideas to start working with. The core set of 46 cards can be added to with themed expansions, including Fairy Tales and Fables, Careers, and even Cryptids. Available at store.bloxelsbuilder.com.





Builder Challenge Cards

These cards can be used by students on their own in a station setup or similar. Each of the 46 cards is a simple challenge to build a game around. By doing this, students learn how to use the app's features and stretch the possibilities of what they can build. Available at

store.bloxelsbuilder.com.





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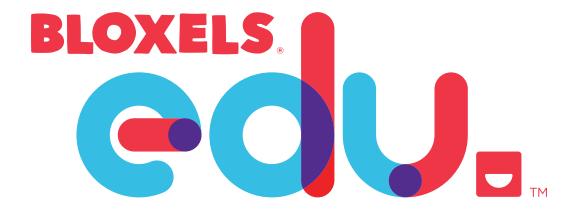


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