HARLEM GALLERY OF SCIENCE

HGS

IGNITING CREATIVITY + DISCOVERY

VIDEO GAMES

THE GREAT CONNECTOR

EDUCATION GUIDE
February 3, 2024 – March 30, 2024

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1. Welcome To Video Games: The Great Connector

This exhibit, ***Video Games: The Great Connector,*** explores how youth leverage video games in pursuit of connecting what youth do with games and not what games do to youth.

The exhibition is divided into three sections.

CONNECTING WITH SELF allows visitors to examine how youth use games to shape their identity, manage their emotions, and acquire skills.

CONNECTING WITH COMMUNITY lets visitors investigate how youth use games to foster community and enhance their awareness of the world around them.

CONNECTING WITH FUTURE gives visitors a chance to explore how youth use their interests in games to connect with careers in the gaming industry.

Throughout the exhibit, visitors will play games, meet historic and contemporary figures in game design and engineering, and uncover the invisible design behind their gaming experience.

This guide is designed to support educators in engaging with young people in support of their exploration of the exhibition content. It will provide an overview of the exhibition content and include pre-visit, in-visit, and post-visit activity examples to engage middle and high school youth. The activities include NYS learning standard connections and are tagged with appropriate standards.

Type of activity: *activity*   *(learning standard)*
↓   ↓   ↓
Ex. **Post-Visit Activity:** Narrative Writing *(9-12W3, 9-12W4)*

The full list of standards can be found at the end of the guide.

2. Connecting with Self - Overview

This section of **The Great Connector** explores how young people use video games to shape their identity, manage emotions, and cultivate skills.

Players, for example, use games to decide who they want to be:

A Cave exploring Adventurer **OR** An Overburdened Chef

A Stealth Operative **OR** A Legendary Athlete

Players use games to decide how they want to feel:

Chill **OR** Hyped

Creative **OR** In Control

Finally, players use games to decide how they want to feel:

Coding **OR** Teamwork

Problem-Solving **OR** Persistence

As you explore the exhibits, you may find yourself asking:

How do I use games to be who I want to be in the world?

3. Games & Emotions

This exhibit explores the way games support emotional management among players. As you explore, think about **how you use video games to manage your emotions?** This section highlights that emotions are *temporary* and *always changing*. We may feel an emotion strongly at one moment, but it may only last as long as we hold that magnet on our doors.

You are asked to complete the statement: **When I play video games, I feel...** using the emotive words on the wall and also to consider the statements left by visitors before you. The door can be opened to step into a reflective space that allows you to record a message that might be used in the exhibition completing the statement Name a game that helps you cope. You can explore videos recorded by previous visitors.

Grade 6-8

Pre-Activity: Mood Board

Select an emotion and find images out of magazines to create a collage that illustrates that emotion. Examine the styles, patterns, and colors that you chose to make your board and list common themes as they relate to your mood. Compare with the class to investigate any common themes.

Post-Visit Activity: Journaling

Play a video game and document when you feel an emotion, ex. overwhelmed, frustrated, accomplished, excited, goofy, etc.
Question(s) to answer: When did I feel that particular emotion? What was happening in the game that made me feel that way?

Grade 9 - 12

Pre-Activity: Analyze and Write *(9-12W1, 9-12W2)*

On one hand games provide positive feelings, such as enjoyment and pleasure, but can also cause rage and frustration by causing failure and loss. Researchers have identified 4 main reasons for gamer rage: in-game failures, other players' actions, technical problems, and out-of-game interruptions. Write a 2 page response to answer the question: Why might these things result in frustration and rage emotions and what can a player do when they experience these emotions?

Post-Visit Activity: Research and Write - Analysis *(9-12W1, 9-12W2, 9-12W5)*

Now that you've explored the exhibit, find existing research to answer the following questions: What brain structures are connected to emotions? In what ways is play important for emotional development?

4. Player Characters: Drawing Station

This exhibit asks you to identify player characters, playable characters in games designed for you by the game designer, that allow you to find yourself within the characters you choose to play. You'll find a collection of worksheets and colored pencils. Each sheet has a text and visual prompt on it. Draw a game character you identify with and share a reflection on the choices you made. Explore examples of drawings and responses submitted by our youth advisors and fan art designers. You can submit your work, and the exhibition team will review it once a week and post new drawings and responses for future visitors.

Lifeline (Apex Legends) (2019)
"Her ability is healing. She resonates with me because, in real life, my friends allow me to make them feel better and give them advice."
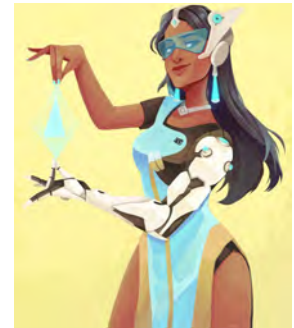
- Kimira
Fan art by @nightshadier on DeviantArt.com (Canada)

Symmetra (Overwatch) (2016)
"Every time I would play with my friends, they would be like, 'Oh my God! You look like her.' So it's like a representation thing. And she was just really fun to play and she actually did something in the game."

- Julie
Fan art by @rottenplantt on DeviantArt.com (Estonia)

Octane (Apex Legends) (2019)
"He's just like a very explosive and energetic character. That's why I resonate with him."

- Ohany
Fan art by @kazunue on DeviantArt.com (Japan)

Sackboy (Little Big Planet) (2008)
"Sackboy is the first character that I identified with, even though it lacks personality. What makes it special is that you shape it with parts of yourself."

- Laura
Fan art by @acdramon on DeviantArt.com (USA)

Connecting with Self

Grade 6 - 8

Pre-Activity: Concept Map

Games feature characters just like television shows, books, movies, and plays. Create a concept map that explores what makes for a well-designed character? What types of things should a game designer think about when building the personality of a character?

Post-Visit Activity: Narrative Writing *(6-8W3, 6-8W4)*

Write a short story, fan fiction, about your favorite video game character.

Grade 9 - 12

Pre-Activity: Concept Map

Games feature characters just like television shows, books, movies, and plays. Create a concept map that explores what makes for a well-designed character? What types of things should a game designer think about when building the personality of a character?

Post-Visit Activity: Narrative Writing *(9-12W3, 9-12W4)*

Write a short story, fan fiction, about your favorite video game character.

5. Player Characters: Behind The Design

Well-developed characters can transform a good game into an unforgettable journey. In an industry where women and people of color have been under-represented for decades, many have felt excluded from that journey, forced to play characters that looked nothing like them.

As more designers with different lived experiences enter the video game industry, the challenge of inclusivity and representation is being tackled head-on. Here are examples from the character design for X, the main character from the game After Life. She was created with the awareness that characters like her - black, female - are rarely the focus of the story.

The directions from the narrative team to the graphic designer were:

"X is a young black woman. She walks around with a small box or parcel, usually at her side. She tends to always have a neutral expression. She is easily recognizable by her yellow jacket which contrasts against her electric blue hair."

The team went through many iterations until landing on her final look.

6. Player Characters: After Life

Play After Life, a game about a young Black woman known as X who struggles with amnesia. Her only vivid memory is the loss of her son, Orphone, whom she searches for within the expansive virtual realm of the Omniverse. The game weaves an intricate tapestry of science fiction narratives that span a diverse future history, elevating the stakes beyond X's personal quest.

In this demo prepared specifically for The Great Connector, help X confront a surreal scene: twelve coffin-shaped pods, linked by a complex network of cables, each housing a hibernating human body.

As you experience the game through the avatar of X, you might notice the ways you are both similar and different from the character. How does that affect how you feel about the game? How does it impact how you feel about yourself?

This section of the exhibition connects visitors to the ideas and decisions involved in building video game characters. It features design boards and sketches from the game, After Life, highlighting the iterative process designers go through to determine what a character is going to look like to make them feel authentic to the world of the game. Visitors get to explore a small part of the After Life world to experience how game designers bring their characters to life.

Grade 6 - 8

Pre-Activity: Connecting Representations *(6-8SL2)*

Identify and describe BIPOC characters in games that you've played. How are they represented? What types of jobs and experiences have they had?

Post-Visit Activity: Narrative Writing *(6-8W3, 6-8W4)*

Imagine you're a person in the pod. Use writing techniques to explore the past experiences and events that led to the point where X rescues you from the pod. What led to this point? How did society's choices lead us here?

Grade 9 - 12

Pre-Activity: Connecting Representations *(9-12SL2)*

Identify and describe BIPOC characters in games that you've played. How are they represented? What types of jobs and experiences have they had?

**Post-Visit Activity: Narrative Writing** *(9-12W3, 9-12W4)*

After playing or watching your peers play as X in the game Afterlife, answer the following questions: what does the rest of the world look like? Why might she feel compelled to react the way she does? How does the story end? Use narrative techniques such as dialogue, description and reflection to develop experiences, events or characters and complete X's story.

7a. Making Me: Avatar Gallery Wall

      An important aspect of video games is the ability to create and customize one's avatar. Supporting young people to design characters representing themselves or their desired traits can help build their sense of identity, individuality, and purpose. As you explore this collection of avatars (submitted by young people around New York City) think about what their choices might reveal about the person behind the design.

What choices do you make when you create your own avatar?
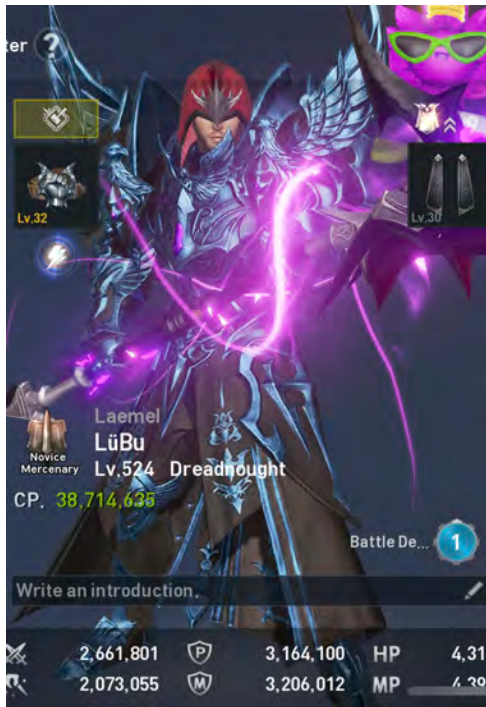
7b. Making Me: Inclusive Character Design

      Over the last forty years, game designers have responded to players' interest in customizing the characters they play. Players now have the ability to not just select from predetermined classes but to customize individual aspects of their character (and, in some cases, even upload their own face).

      A few early games in the 1980s, like *Ultima*, allowed players to customize names, select character classes, and configure attributes.

      It wasn't until 1998, however, that players could design character features, starting in sports games like *NBA Live* and *WWF War Zone*. Options were limited regarding body shape, height, skin tones, and hairstyles.

      An overview of *The Sims* (first launched in 2000) illustrates how character design options improved over time to be more inclusive and better reflect the background and interests of players:

7b. Making Me: Inclusive Character Design (CONTINUED)

THE SIMS (2000)

Players could only select from three skin colors (light, medium, and dark) and three body sizes (skinny, fit, or fat.). Head types came with predetermined hairstyles and colors. Bodies came with preselected clothing.

THE SIMS 2 (2004)

The Sims 2 (2004) expanded player options, allowing them to select from a limited range of hair colors and styles. Players could modify additional features like their nose, eyes, makeup selection, and facial hair.

THE SIMS 3 (2009)

The Sims 3 increased the number of skin tone options from four to six, including a slider to expand the darkening or lightening of each tone. Players received more control over aspects like weight, muscle tone, hairstyle, hair color, face shape, and clothing.

THE SIMS 4 (2014)

The Sims 4 (2014) has and continues to deepen customization by continuing to refine the skin tone selections. The game provides players with gender-neutral options, new features like physical frame, whether their Sim can get pregnant, and how the Sim uses the toilet.

7. Making Me: Avatar Gallery Wall & Inclusive Character Design (CONTINUED)

This section explores the ways games allow players to customize characters and how games can be more inclusive in their character design options.Visitors will experience a wall of characters created by youth from around NYC, explore the evolution of customizable characters in the Sims video game series, and meet Michelle Ma, a Character Tech Artist, working to design more inclusive character tools.

Grade 6 - 8

Pre-Activity: Drawing Conclusions

Identify one character that shares some aspect of your identity. Create a Venn Diagram comparing the similarities and differences between you and the character. Using support from the diagram, write a paragraph explaining whether you two are more similar or different.

Post-Visit Activity: Writing - Point of View *(6-8W1, 6-8W2)*

Write an essay that explores why inclusive options are important in video games using examples from the games you've played and the exhibition.

Grade 9 - 12

Pre-Activity: Drawing Conclusions

Identify one character that shares some aspect of your identity. Create a Venn Diagram comparing the similarities and differences between you and the character. Using support from the diagram, write a paragraph explaining whether you two are more similar or different.

Post-Visit Activity: Persuasive Writing *(9-12W1, 9-12W2, 9-12W5)*

The protagonist is the main character of a story. There aren't many people of color in lead roles. They usually take on the roles of sidekicks or tokens. When BIPOC (Black, Indigenous, People of Color) characters are the protagonists, they tend to be athletes, criminals, musicians, or perpetuate harmful stereotypes. Sometimes implicit, as well as explicit, racial biases make their way into the pages of these stories. Write an essay discussing why games need designers from multiple backgrounds when creating games.

8. Pose with Miles Morales

Miles Morales was introduced in issue 44 of the Marvel Comics' title Ultimate Fallout (2011). As an Afro-Latino kid from Brooklyn, New York, who moves to Harlem, Miles is New York City! He is a playable character in games like Marvel Ultimate Alliance 3: The Black Order, Marvel Contest of Champions, Spiderman: Miles Morales, and the recent Marvel's Spiderman 2.

Strike a heroic pose next to Miles' 2099 suit.

Grade 6 - 8

Pre-Activity: Math - Algebra *(NY-6.RP, NY-6.EE)*

Miles Morales has a unique ability to create bioelectricity. Similar to the electric eel, Miles can discharge electricity from his body to shock enemies. A 44lb eel can generate 860 volts of electricity. Miles Morales is 140lbs, how many volts might he be able to generate?

Post-Visit Activity: Spiderweb Strength *(ETS1.A, ETS1.B, ETS1.C, MS-ETS1-2)*

In different versions of the story, Spiderman either designs or produces his own webbing. He uses his web to swing through the city, tangle his opponents, and to pull, catch and stop moving objects. In reality, spiders have inspired technological breakthroughs in material science and medicine.

Essential Question: Why are spider webs so strong?

In this activity, you'll design your own web structure using the given materials to support different weights.

Materials

- Scissors
- 2 paper plates
- Hole punch
- Thin yarn or cotton twine
- Tape measurer or yard stick
- Tape
- Pack of dry spaghetti
- noodles
- 3 different weights or weighted objects

With a partner, cut out the center of both paper plates. Have one partner complete each web design. Punch holes around the rim of one of the plates. Cut 12 feet of yarn or twine and pull it through one of the holes on the paper plate and secure it onto the plate using tape. Bring the free end of the yarn through another hole on the opposite side. Repeat this process to weave a web, making sure to weave through all the holes while not leaving large gaps in the web. The other partner will create the web using spaghetti by carefully placing and taping the noodles onto the plate.

Before testing your design, answer the following questions: Which web do you think will be able to support all of the individual weights? One by one place the weights onto each of the webs for 10 seconds. Were you right in your assumptions?

Design challenge: design a web that can support all three weights simultaneously.

8. Pose with Miles Morales (CONTINUED)

<u>**Grade 9 - 12**</u>

Pre-Activity: BioElectricity *(PS1.A, PS1.B, PS2.B, HS-PS2-6)*

Miles Morales has the ability to create high levels of bioelectricity. Similar to the electric eel, Miles can discharge electricity from his body to shock enemies. Describe the ways that the human body generates and utilizes electricity.

Post-Visit Activity: Spider Swing *(HS-PS2-1, HS-PS2-2)*

Both Miles Morales and Peter Parker use their webs to swing through the city utilizing Newton's First Law, that objects in motion tend to stay in motion, and objects at rest tend to stay at rest, unless acted upon by an outside force. Their movement creates a pendulum, a weight suspended from a fixed point that can swing freely.

Essential Question: Why is a pendulum action an effective way of movement for Miles and Peter?

Create your own pendulum using the materials listed. Take a piece of string and attach one of the weights or weighted objects to it. Each string should be the same length. Identify three starting positions that you will use for each of your pendulums. Record the Angle of your starting position, the weight, the angle of the initial pendulum swing and the amount of time to come to rest for each of the weights.

Materials

- 3 Different Weights or Weighted objects
- 3 Pieces of String all the same length
- A Protractor
- Tape
- Stop Watch
- Pencil

DATA RECORD TABLE

WEIGHT	STARTING ANGLE	ANGLE OF INITIAL SWING	TIME TO REST

1. ***How do the weights and starting angle affect the Angle of the initial swing?***
2. ***How would wind impact the Angle of Initial Swing and the Time to Rest for the Pendulum?***

Connecting with Self

9. Architectural Photoshoot - Speedrunning

Whether flying a ship across the universe, driving a car down a track, or battling within an arena, video games offer designed spaces for players to navigate and explore. Experienced players often make a meta-game out of maximizing their movement through these spaces. Their recorded attempts to beat personal or global records are often shared within speedrunning communities where players trade strategies, tips, and custom levels for others to play.
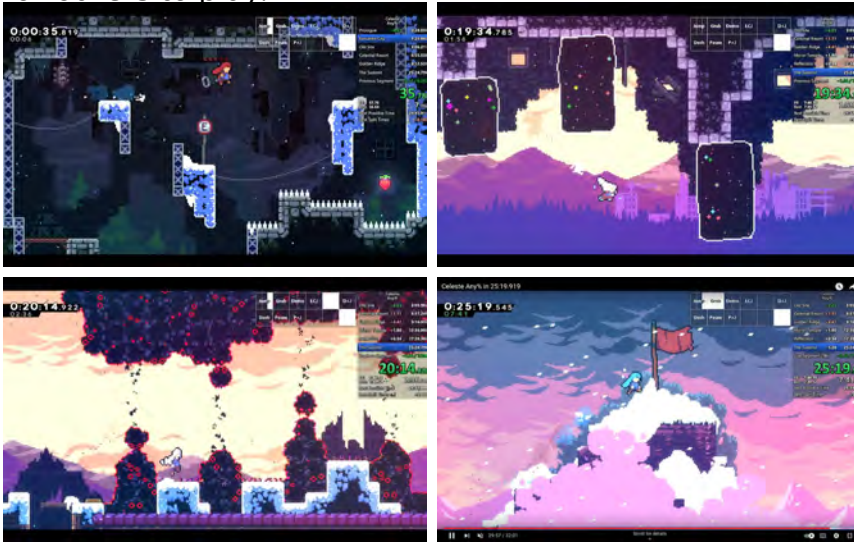
Celeste (2018) is a 2D strategic platformer offering players three abilities -- jump, dash, climb -- to overcome progressively difficult obstacles with precise timing and coordination. Though the game is very challenging, speedrunners have managed to reach the end of the game in just under 26 minutes.

Screenshots of "Celeste" (2018)

10. How Good Games Teach: Star Stuff

Star Stuff is a cosmic puzzle automation game that mixes programming with real-time shenanigans. Puzzle alongside programs by giving your bots directions and interacting in real-time with bot actions to traverse a star factory!

Screenshots of "Star Stuff" (Ánimo Games, Unreleased)

11. How Good Games Teach: Bloomwood Stories Block Party

Bloomwood Stories: Block Party is a transformational visual novel game. The player takes on the role of a community advocate, helping residents with a range of health- and community-related problems. The game is designed to have real-world impact, empowering marginalized communities to improve their ability to manage their own health, even when they're not in a medical setting.
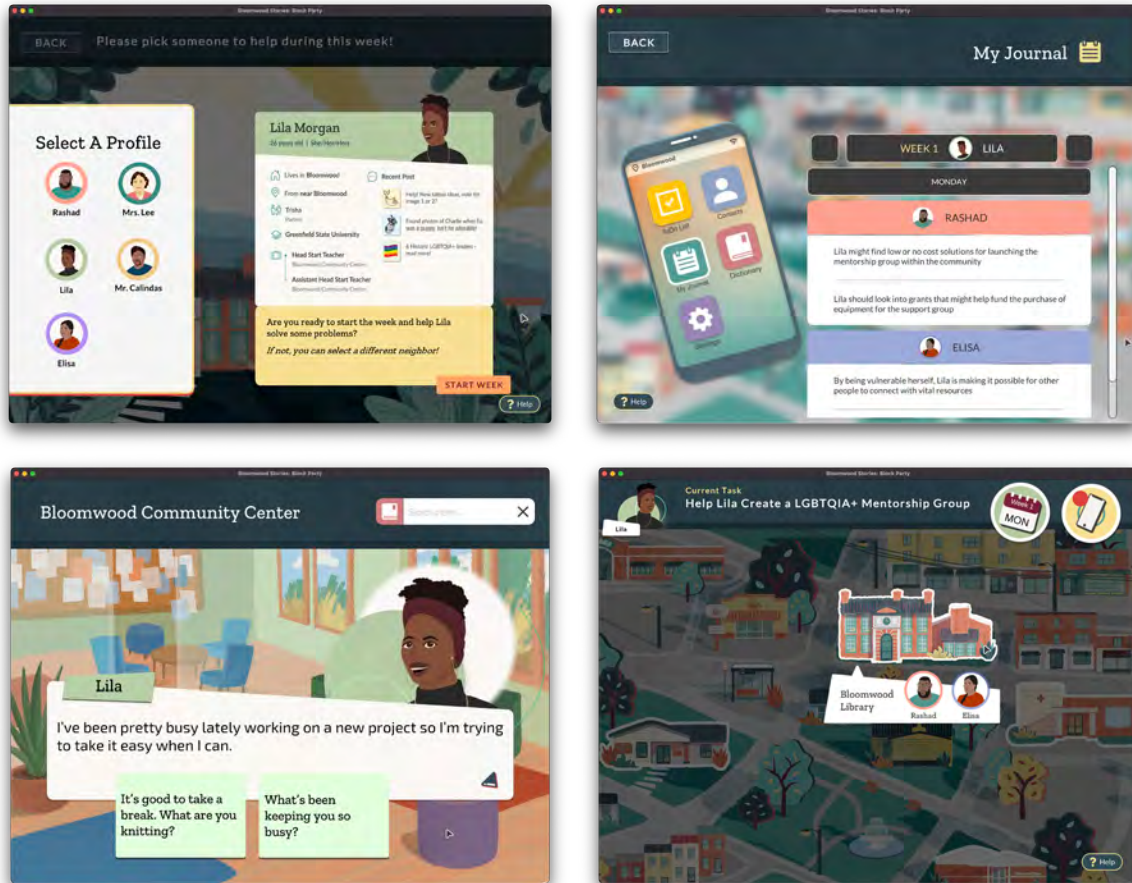
Screenshots of "Bloomwood Stories Block Party" (2022)

12. Building Skills Through Games

Young people often play games not just for fun but also because they help them develop and hone specific skills. Games can foster cognitive skills like strategic thinking, problem-solving, and quick decision-making. By requiring players to work together, cooperative games can be used to enhance social skills like teamwork, communication, and empathy. While there are many games explicitly designed to teach skills, like typing or learning to speak a new language, all well-designed games have the potential to teach a wide-array of skills. As you walk past this exhibit, observing how game titles are replaced with skills they can teach, ask yourself:

What am I trying to learn through the games I play?

This section of the exhibition explores how games help players build new skills, explore novel ideas, and learn new things in three ways:
- Through an exploration of Speedrunning, completing games as fast as possible.
- Introduction to the Gee Learning Principles through two games submitted to the GEE! Learning Game Awards, which was founded to recognize games that support learning.
- Connecting career skill development and the games that help players build those skills.

Grade 6 - 8

Pre-Visit Activity: Prepare for a Speedrun *(6-8SL1)*

Speedrunning involves completing a game as fast as possible. Players compete and win prizes for being the fastest. Imagine you are going to compete in a speedrun for your favorite game. What are the things you would have to consider to beat the game in the fastest way possible?

Pre-Visit Activity: Match the Definition *(6-8R4)*

SKILLS	DEFINITIONS
• Teamwork	• Oral communication with words that you or others speak out loud
• Cultural Awareness	• The act or power of forming a mental image of something not present to the senses or never before wholly perceived in reality
• Accountability	• The ability to use mathematics and information to solve real world problems.
• Quantitative Reasoning	• Work done by a group acting together so that each member does a part that contributes to the efficiency of the whole.
• Problem-Solving	• The development and expression of ideas in writing
• Introspection/Reflection	• Sensitivity to the similarities and differences that exist between two different cultures and the use of this sensitivity in effective communication with members of another cultural group.
• Verbal Communication	• The desire to know
• Written Communication	• An examination of one's own thoughts and feelings
• Active Listening	• An obligation or willingness to accept responsibility for one's actions.
• Curiosity	• Characterized by a ready capability to adapt to new, different, or changing requirements
• Imagination	• The process or act of finding a solution.
• Flexibility	• The practice of observing what verbal and non-verbal messages are being sent, and then providing appropriate response to the message.

In-Visit Activity: Critical Thinking

How does Star Stuff or Bloomwood Stories: Block Party exemplify the Gee Learning Principle of Well-Ordered Problems, which presents players with a sequence of problems so that early problems lead to solutions that work for harder problems later.

9-12. Skills Through Games (CONTINUED)

Post-Visit Activity: Skill Identification *(6-8R4, 6-8W2)*

Identify 3 ways that games can help you develop or refine that skill.

- Teamwork
- Quantitative Reasoning
- Verbal Communication
- Curiosity

- Cultural Awareness
- Problem-Solving
- Written Communication
- Imagination

- Accountability
- Introspection/ Reflection
- Active Listening
- Flexibility

Grade 9 - 12

Post-Visit Activity: Skill Identification *(9-12W2)*

Create a definition for each of the skills listed and identify 3 ways that games can help you develop or refine that skill.

- Teamwork
- Quantitative Reasoning
- Verbal Communication
- Curiosity

- Cultural Awareness
- Problem-Solving
- Written Communication
- Imagination

- Accountability
- Introspection/ Reflection
- Active Listening
- Flexibility

In-Visit Activity:

How does Star Stuff or Bloomwood Stories: Block Party exemplify the Gee Learning Principle of **Well-Ordered Problems**, which presents players with a sequence of problems so that early problems lead to solutions that work for harder problems later.

Post-Visit Activity: Game Skill Journal *(9-12W2)*

As you play a game, write down the moments in the game where you are building each of the following skills. What is happening in the game? What is the game asking you to do to help you build that skill?

- Teamwork
- Quantitative Reasoning
- Verbal Communication
- Curiosity

- Cultural Awareness
- Problem-Solving
- Written Communication
- Imagination

- Accountability
- Introspection/ Reflection
- Active Listening
- Flexibility

13. Connecting With Community - Overview

This section of **The Great Connector** explores how young people use video games to connect with the people and communities around them.

Journey to the places where gamers play, get introduced to the brilliant minds behind today's gaming innovations, and explore resources about the many gaming communities right here in the city.

Play past winners of the Games For Change Award, which promotes games that help players think through social issues impacting society. Or play games that highlight how social bonds form when people join together in play.

As you explore the exhibits, you may find yourself asking:

How do games connect me with others and the world around me?

14. The Games For Change Award Arcade

Games are recognized for their ability to entertain, educate, and affect change. The nonprofit Games for Change strives to bring together voices in the gaming industry to advance community engagement. Every year, the organization celebrates some of the best games that foster learning, confront social issues, and that push the boundaries of interactive media. They also host an annual Student Challenge, for educators and students to bring social impact game design to their schools.

This section features two recent entries recognized by Games for Change: SweetXheart, a game created by Catt Small, that puts players in the shoes of a modern young black woman, and a community building and economy management game called Common'Hood developed by the Plethora Project. Discover how video games can go above and beyond their perceived domains to alter our understanding and reality.

SweetXheart
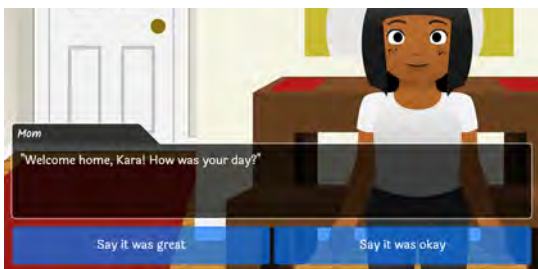
SweetXheart (pronounced "sweetheart") asks: Can you get through a week in the life of a modern Black woman? The game follows Kara, a 19-year-old Black girl from the Bronx seeking success in life, school, and her career. Over five fictional days, her stress level changes based on interactions with other characters. Decisions made by the player lead the character to communities around New York City, including Harlem.

The game was developed by Catt Small, a Bronx native. Small is currently a Staff Product Designer at Dropbox, as well as a game designer and developer. She started coding around the age of 10 and, by age 15, was designing video games independently. Small has degrees from both the School of Visual Arts and New York University.

COMMON'HOOD

Common'hood is a community simulation game that tackles inequality and economic challenges. Play as Nikki, a character on the brink of homelessness, leading a group of squatters in revitalizing an abandoned factory. The game prompts players to rethink economic models, exploring self-provision and DIY initiatives for community growth. Common'hood fosters a positive atmosphere of mutual aid and solidarity, prioritizing diverse contributions for a caring and prosperous community.
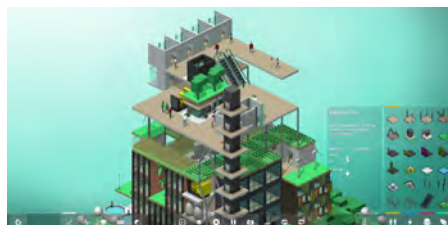
Common'hood was developed by the Plethora Project, an interdisciplinary indie studio based in Detroit, Michigan. Studio Director Jose Sanchez, an architect and researcher, led two dozen individuals in a research project investigating video games' impact on addressing urban and ecological issues in our society over the past six years.

Jose Sanchez
Director
Screenwriter
Game Designer

Shuruq Tramontini
Lead Artist

Zach Day Scott
Lead Developer

14. The Games For Change Award Arcade (CONTINUED)

Grade 6-8

Pre-Visit Activity: Writing - Making Connections *(6-8W1, 6-8W2, 6-8W3)*

Gaming platforms have transformed to become social networks. We log in and connect with family, friends, and strangers to form communities around our interest in gaming. Even offline, we connect with people to discuss our opinions about the games we play. How do the games you play connect you with others and the world around you? Write a response and provide examples from your personal experience.

Post-Visit Activity: Writing - Problem Solver *(6-8W1, 6-8W2, 6-8W3)*

You've seen how games have been used to deliver meaningful messages. Write an essay identifying and describing a problem in your community. Explore how this issue has been portrayed in media such as film, television, music, and video games. Come up with a possible solution to the problem. Can gaming be used to support your solution? If so, how? If not, why?

Grade 9 - 12

Pre-Visit Activity: Writing - Reflection *(9-12SL1, 9-12R2, 9-12R3)*

Gaming platforms have transformed to become social networks. We log in and connect with family, friends, and strangers to form communities around our interest in gaming. Even offline, we connect with people to discuss our opinions about the games we play, but our opinions change over time. Investigate how your knowledge and views have changed over time in elementary, middle, and high school, and how you expect them to change in the future.

Place large pieces of paper around the room labeled *"Elementary", "Middle", High School", and "Future"*. On a post-it, explain your understanding of your role in your community during each phase of your life. Consider what you can remember about the expectations of others versus your own, your responsibilities at the time, your ambitions and goals, and the environment(s) you were in. Take time to read what other students wrote. Afterwards, discuss as a class to see what changed over time. Look for trends, outliers, and major factors of influence.

Post-Visit Activity: Writing - Two Sides, One Coin *(9-12W1, 9-12W2)*

Use examples from the exhibit to respond to the writing prompts about identity, diversity, justice, and action. What do you think is the intended message being conveyed by the gallery? Based on the exhibits, do you feel like the panels effectively supported the mission of the gallery? How can you deepen your interpretation of social issues by considering the theme and perspective of others? What - if any - is the value of opposing opinions?

15. Where Games are Played

There are almost 3.26 billion people worldwide who play video games - that's over 40% of the current global population. The revenue from the worldwide gaming market was estimated at almost $347 billion dollars, with over 89% of sales happening digitally. Games are everywhere and have grown to include people of all ages, using all sorts of devices including gaming consoles, computers, tablets, and phones. This sweeping embracement has allowed games to be played in almost any setting. Whether you're at home, on the bus, or in the waiting room at the doctor's office, chances are there is someone nearby who is part of the gaming community. Explore the people who made this world of gaming possible.

Gerald "Jerry" Anderson Lawson
Created the First Video Game Cartridge.

Jerry grew up in Brooklyn and Queens in 1940s moved and attended classes at Queens College and the City College of New York. As a child he had interest in Chemistry and spent a lot of time working on electronics. From repairing television sets to building his own ham radios (ala Dustin from the Netflix Series Stranger Things).

He moved to Palo Alto, California to join the Fairchild Semiconductor company as an engineer and eventually worked on the development of the Fairchild Channel F system, the first home console with changeable game cartridges. This paved the way for the development of games programs such as Sega, XBox, Nintendo, and Playstation.

Dr Mark Dean
Worked on the development of the PC.

Mark was born in 1957 in Tennessee and from a young age was interested in Math and Engineering. As a young person he was working with his father building tractors and spent time building radios, computers, and amplifiers. He attended the University of Tennessee, Florida Atlantic University, and eventually Stanford where he received his PhD in Electrical Engineering.

While working at IBM he worked on the invention of the personal computer (PC), the color PC monitor, and is responsible for three PC patents. He supported the development of the 1-Gigahertz chip in 1999, which promoted the development of increasingly complex PC games.

Mark used his passion for tinkering to build a career in engineering and built the foundation for computer technology. Where will your passions lead you?

15. Where Games are Played (CONTINUED)

Dr. Marian Croak

Worked on the development of Voice over Internet Protocol (VoIP).

Marian was born in 1955 and raised in New York City. As a young person she would watch the electrician, plumbers, and other skilled laborers who would come to her home and fix things when they needed repair. She was inspired by her high school math and science teachers and her father who supported her STEM interests by building her a home chemistry set.

Marian attended Princeton University and eventually received her PhD in social psychology and quantitative analysis from the University of Southern California. She applied her expertise at Bell Labs in the Human Factors research division, understanding how technology could be used to positively impact people's lives. She later went on to work on network engineering, where she conceptualized and designed new ways for digital telecommunications.

Her work led to the development of Voice over Internet Protocol (VOIP) which enabled remote work, online conferencing, and voice chat features in gaming. The technology converts the voice into a digital signal allowing verbal communication over the internet. Marian joined Google in 2014, and is the Vice President of Engineering and leads the Research Center for Responsible AI and Human Centered Technology.

Marian used her interest in human behavior and technology to develop new ways for people to communicate with one another, allowing us to play and talk with our friends across the world. How can you combine your passions to build a career?

Jesse Eugene Russell

Worked on the development of cellular wireless technology.

Jesse was born in 1948 in Tennessee and attended Tennessee State University where he received a degree in Electrical Engineering and Stanford University for a Masters in Electrical Engineering.

While working as an Engineer at Bell Labs he led that team that created the concept for the cell phone. He designed the first mobile phone that could transmit signals between handsets and cell phone towers, allowing for on-the-go communication and network access. This technology allows phone users to access networks and set the stage for being able to use your phone for gaming.

Jesse started his own company, incNetworks, in New Jersey, which works in broadband wireless communication systems that focuses on 4G technologies.

Jesse used his ability to generate solutions to problems and his engineering expertise to develop new technologies that have revolutionized our world through mobile communication and network access. How can you use your expertise to develop new solutions and technologies? What might you imagine?
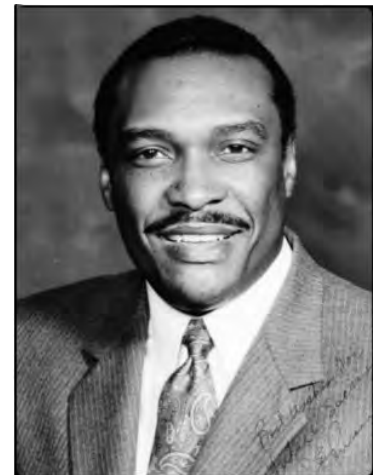
Grade 6-8

Pre-Visit Activity: Data Collection and Analysis

Keep a journal for one week recording all of the instances you witness people gaming. This can be on the bus, subway, in school, or at home. For each instance, record the time of day, the location, a brief description of the person playing, and the device they were playing on. After collecting your data, create a bar graph to illustrate your findings. Write out your results to explain your data and draw conclusions from your findings. Relying on your data alone, write down inferences about what time of day most people play games, what age group plays games the most, and what device is used more to play games. Explain why your results might misrepresent gaming. What can be done to make your results more realistic? Compare your findings with your classmates.

In-Visit Activity: Connections with our Favorite Games

What is one thing that you learned about each of the 4 inventors highlighted in the digital interactive?

- Jerry Anderson _____
- Dr Mark Dean _____
- Dr. Marian Croak_____
- Jesse Eugene Russell _____

Post-Visit Activity: Gaming Oral History Project

Many people have played games at different points in their life. Develop a set of questions to learn about someone's experience with video games. Interview members of your family using the questions you develop that are older than you. Record the conversation.

After interviewing them answer:
- What did you learn from their experience with video games?
- How is your experience similar or different from theirs?

Grade 9 - 12

Pre-Visit Activity: Research & Writing - Put It In History *(9-12W2, 9-12W5)*

It's believed that games were created thousands of years ago, dating back to ancient humans. Research the history of games as it leads up to modern gaming to help you create a timeline of important events that have shaped gaming as we know it today. Provide a brief description of the events you've selected. Think about the range and period of time that these events took place to provide additional context.

In-Visit Activity: Connections with our Favorite Games

- Jerry Anderson _____
- Dr Mark Dean _____
- Dr. Marian Croak_____
- Jesse Eugene Russell _____

Post-Visit Activity: Gaming Oral History Project

Many people have played games at different points in their life. Develop a set of questions to learn about someone's experience with video games. Interview members of your family using the questions you develop that are older than you. Record the conversation.

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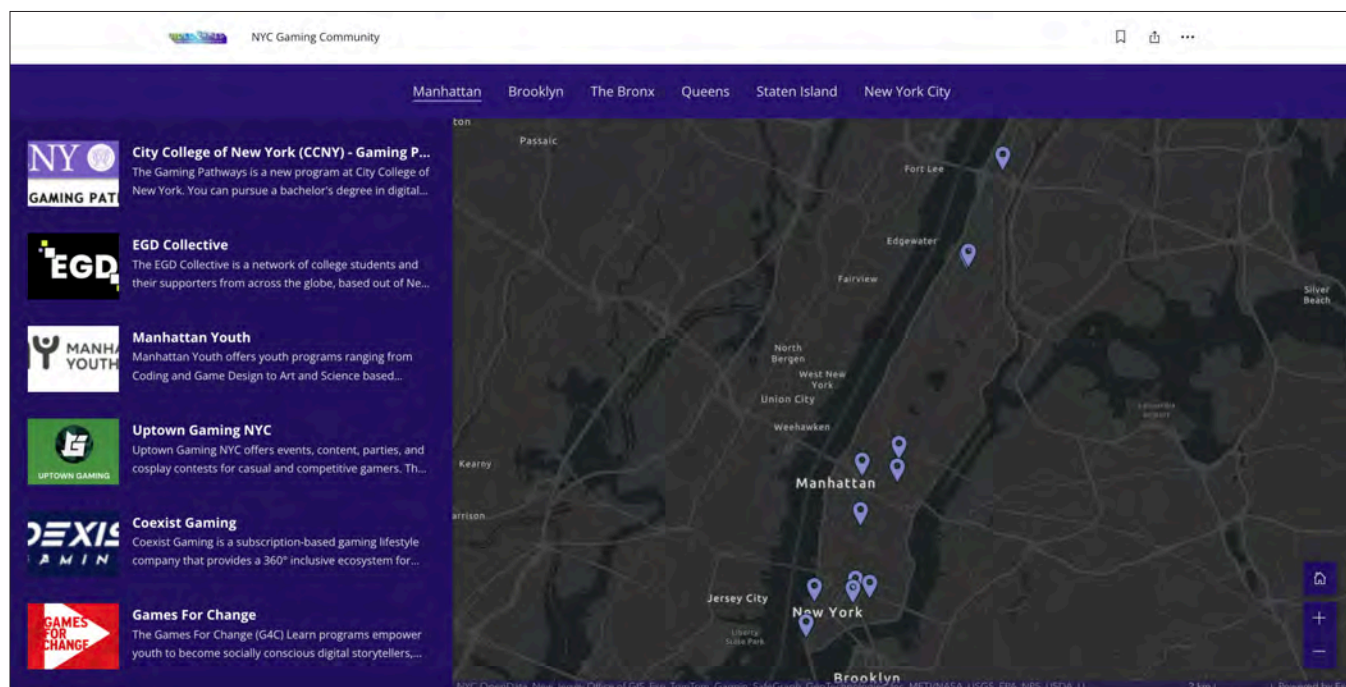
16. NYC Gaming Community Map

Fun fact: New York City was once the capital of the United States. Now, it's considered the economic, fashion, and cultural capital of the nation - and even the world. The city is also striving to become a global hub for technology and digital gaming. A recent study from the Mayor's Office of Media and Entertainment states that the games sector in NY accounts for 7,600 jobs and that number is expected to steadily grow.

Gaming communities develop both online and in-person. People can venture to locations in almost every borough to find a space that offers high-end gaming computers, consoles, and devices to play together. These spaces offer environments to build and grow long-lasting friendships and communities around shared interests in gaming. Explore New York City's gaming culture throughout the five boroughs.

Use the NYC Gaming Map to explore the ever-expanding network of groups, organizations, and programs that make up NYC's gaming communities.

Think about what communities you want to join or where you might want to start your own.

16. NYC Gaming Community Map (CONTINUED)

Grade 6 - 8

Pre-Visit Activity: Play SimCity 4

Ask the students to build and manage their city. What decisions did they have to make? What made the game challenging? How did you distribute resources throughout your city? Did you feel your resources were distributed fairly?

In-Visit Activity: Think Critically

Explore the NYC Gaming Community Map.
- What borough has the highest concentration of organizations? _____
- What borough has the least? _____

Post-Visit Activity: Writing *(6-8W1, 6-8W2, 6-8W3)*

Write an essay answering the Think Critically questions: What borough has the highest concentration of organizations? What borough has the least? Why do you think that is? What do you think should be done about it?

Grade 9 - 12

Pre-Visit Activity: Play SimCity 4

Ask the students to build and manage their city. What decisions did they have to make? What made the game challenging? How did you distribute resources throughout your city? Did you feel your resources were distributed fairly?

In-Visit Activity: Think Critically

Explore the NYC Gaming Community Map.
- What borough has the highest concentration of organizations? _____
- What borough has the least? _____

Post-Visit Activity: Writing *(9-12W1, 9-12W2, 9-12W5)*

Write an essay exploring the following questions:
How do the dynamics of power and privilege influence access to and distribution of resources and opportunities within New York City? How does society support or suppress our individual identities? Develop your argument by including relevant personal experience, data from the NYC Gaming Community Map, and other sources.

Definitions

Privilege operates on personal, interpersonal, cultural, and institutional levels and gives advantages, favors, and benefits to members of dominant groups at the expense of members of target groups. Privilege is characteristically invisible to people who have it.

Power is the ability to influence and make decisions that impact others.

17. Pico Park

Games aren't just a solo activity. Many games require players to work collaboratively to accomplish the mission. This exhibit requires players to work together to solve increasingly complex puzzles in the game Pico Park (2019) learning that effective communication and cooperation are keys to success.
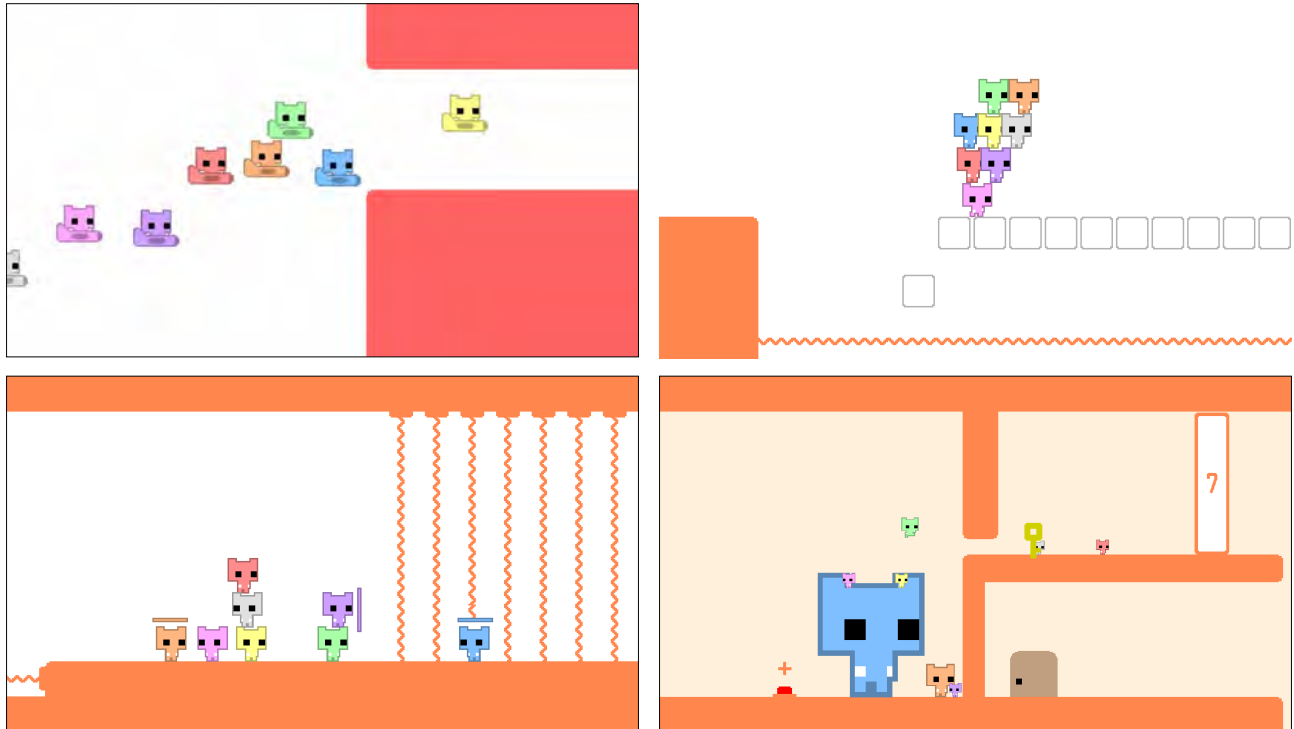
Screenshots of "Pico Park"

Grade 6 - 8

Pre-Visit Activity: Speed Bump *(6-8SL1)*

Rearrange the classroom to create a randomly spread obstacle course, specifying a start and finish line. Split the class into groups of 4. Taking turns, blindfold one of the team members. The rest of the group will stand at the finish line and guide their blindfolded member through the obstacle course using verbal instructions alone. Time each group to see who completes the course the fastest.
Extension discussion - What were some of the challenges you faced during the activity? What was the benefit of being the last group to perform?

In-Visit Activity: Think, Pair, Share

While watching groups play Pico Park, observe and take notes of the strategies they used during the game. What worked well? What didn't? What would you do differently? Discuss this with a partner. Then, put it into action by grabbing a controller and implementing your notes. After playing, go back to your notes and write down if your analysis helped you perform better.

17. Pico Park (CONTINUED)

Post-Visit Activity: Instructional Drawing

Split up into three groups. Choose one person in each group to be the artist. Assign each group an object - but the artist cannot know what the object is. The artist has to face the group so that they cannot see the drawing. They will give the artist instructions in order to draw a picture of their object without giving any revealing clues. The artist can ask questions to clarify the instructions but not about the object itself. The groups have 5 minutes to complete their drawings. Each of the artists should reveal the drawing to the group.

Materials

- Paper
- Pencil
- Stopwatch

Grade 9 - 12

Pre-Visit Activity: Marshmallow Challenge *(HS-ETS1-2)*

Split up into groups of 4. Using the given materials, build the tallest free-standing structure on a table in 18 minutes. Teams can break the spaghetti and cut the tape and string into any sized pieces. You don't have to use all the materials, but the structure must be able to support the whole marshmallow for at least 10 seconds. The marshmallow cannot be split into smaller pieces. The structure must stand on its own - it cannot be taped or tied to anything other than the given materials. The team with the tallest structure wins. The structure is measured from the base of the tower to the bottom of the marshmallow.

Materials

- 20 sticks of spaghetti
- One yard stick
- One yard of masking tape
- One yard of string
- Marshmallows
- Scissors
- Stopwatch

In-Visit Activity: Writing - Think, Pair, Share

While watching groups play Pico Park, observe and take notes of the strategies they used during the game. What worked well? What didn't? What would you do differently? Discuss this with a partner. Then, put it into action by grabbing a controller and implementing your notes. After playing, go back to your notes and write down if your analysis helped you perform better.

Post-Visit Activity: Discussion - Working Together *(9-12R2, 9-12R7, 9-12SL1)*

Read the Science Article - Collaboration for the Win by Elizabeth Pain
https://www.science.org/content/article/collaborating-win

- Why was collaboration important to the success of the projects described in the article and to completing the levels in Pico Park?
- What are the benefits to collaboration and working in a team?
- What does Earnshaw describe as risks to collaboration?

18. Connecting With Future - Overview

This section of **The Great Connector** explores how young people can prepare for a career in video games.

Gaming is a multi-billion dollar industry and continues to grow year after year. Companies across the world are looking for artists, engineers, storytellers, and more, who will design the games of the future.

Meet game designers and industry insiders. Learn why they chose a career in gaming and the skills they had to learn along the way. Explore how personal interests outside of gaming - like drawing or marketing - can inspire academic studies that lead to game-related jobs.

As you explore the exhibits, you may find yourself asking:

How can my interests lead me into a career in the gaming industry?

19. Take A Picture: Giant Nintendo Switch

Take A Picture in the Giant Nintendo Switch!

20. Unreleased Games Arcade

This interactive game station allows visitors to play games that have yet to be released and were developed by local game designers. Each week will feature new unreleased games and opportunities to meet the designers behind the game.

Grade 6 - 12

Pre-Visit Activity: Curiosity and Perception

Write down some things you have always wondered about how games are developed? What is your perception of what game developers go through when creating digital games?

In-Visit Activity: Make Note

As you play the game think about the following:

- What did you like about the game?
- What could be improved?
- What would you change if you could change anything about the game?

Post-Visit Activity: Leave a Review

Games are reviewed by critics letting readers know their thoughts and opinions about a game. Write a review or create a short video about the game you played.

- What game did you play?
- What did you like about the game?
- What could be improved?
- What would you change if you could change anything about the game?
- Are there other games that you have played that are similar?

21. Web of Interests

In this section of the exhibition visitors meet local gaming professionals and explore how their interests as young people shaped the trajectory of their careers.

Yiyi Zhang

Board of Directors | Gumbo Collective, Inc.
Community + PR Manager | Heart Machine, Inc.
Vice President | Arcade Commons

"I've always been interested in art, tech, gaming, and bringing people together. Now that I do public relations, community management, and marketing for a game company, I feel I'm in a career that has married those interests together."

Jaye "Letta J" Watts

CEO | Coexist Gaming

"I was and still am extremely passionate about music, both composition and singing ,as well as playing instruments. These loves led to my current work as an artist and musician."

Shawn Pierre

Assistant Arts Professor | NYU Game Center
Independent Games Festival | Chairperson

"Social interactions were important in all my activities and interests growing up. A lot of the games I'm working on now try to make people interact in ways they might not expect from the genre or medium, whether they do so in a group or solo."

Marcelo D. Viana Neto

Game Design Professor | CUNY Hostos Community College

"I've always been creative and wanted to express ideas through my artwork. I've always loved collaborating with other people, learning new things, feeling challenged and inspired by the people and ideas around me. Making games allows me to do all of the above."

Geneva Heyward

Teaching Artist | DreamYard

"I had always been interested in creating stories, but I just didn't know how I wanted to get them to people. I played around with writing stories, making comics, animations, and then eventually games. Games happened to have everything I wanted and more when it came to creating a story and having viewers interact in new, interesting ways."

Grade 6-12

Pre-Activity: Identifying Interests

We all have the interests that motivate us everyday. Identify and write down activities and interests that you have. What do you enjoy about them?

In-Visit Activity: Interests of Designers

As you watch the videos about the Game Designers write down the interests they had when they were younger.

GAME DESIGNER	WHAT WERE THEIR INTERESTS?	WHAT EXCITES THEM ABOUT THEIR WORK?
GENEVA HEYWARD		
MARCELO D. VIANA NETO		
YIYI ZHANG		
JAYE "LETTA J" WATTS		
SHAWN PIERRE		

What are some of the things the game designers had in common? Do any of your interests overlap with those of the game designers?

Post-Visit Activity: Incorporating Interests in Game Development

Look up programs around the city that align with your interests. How do you apply or join the program?

22. Gaming Skills Tree

This exhibit provides an introduction into careers in the gaming industry and the skills necessary to pursue those careers. Visitors complete an aptitude test at the GameIn Grill which provides recipes and instructions for a wide range of roles in the gaming industry.

Welcome to the GameIn Grill, serving up recipes for a wide range of roles in the gaming industry: programmer, game designer, marketer, sound designer, producer, and artist.

Take our aptitude test to learn what ingredients you'll need to cook up your own tasty career.

Grade 6-12

Pre-Visit Activity: Gaming Roles

There are a wide variety of roles in the Gaming Industry. When we play games we often ignore the credits at the end of the game highlighting the people who make our games possible. Here is a list of Game Roles. Write down what you think each of these roles does? Bring your list to the exhibition and see if you are correct.

- Narrative Designer _____
- 2-D Artist _____
- Animator _____
- Sound Designer _____
- Quality Assurance Tester_____
- Producer _____
- Gameplay Programmer _____

In-Visit Activity: Aptitude Test

After completing the aptitude test, consider whether this career interests me. Would I enjoy doing this as a career?

Post-Visit Activity: Career Map

Find out more information about the role you were assigned by searching online. Explore programs, clubs, or events that you can attend that would help you build skills or further pursue your interests. Identify colleges that have degree programs that connect to the career you would like. Develop a map or a plan that you can follow to reach your goal.

23. Game Developer Cosplay

Picture yourself working in the gaming industry.

- **Artists:** bust out your tablets.

- **Sound designers:** grab your headphones.

- **Narrative designers:** pitch your scripts.

Find the object that represents your future career and strike a pose!

24. Learning Standards

Next Generation Science Standards

MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

HS-ETS1-2. Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

HS-PS2-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

HS-PS2-2. Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Next Generation Mathematics Learning Standards

NY-6.RP: Ratios and Proportional Relationships.

NY-6.EE: Expressions, Equations, and Inequalities.

Next Generation English Language Arts Learning Standards

6-8R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings.

6-8SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.

6-8SL2: Analyze the purpose of information presented in diverse formats and evaluate the motives behind its presentation.

6-8W1: Write arguments to support claims with clear reasons and relevant evidence.

6-8W2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

6-8W3: Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.

6-8W4: Create a poem, story, play, artwork, or other response to a text, author, theme or personal experience; explain divergences from the original text when appropriate.

9-12R2: Determine one or more themes or central ideas in a text and analyze its development, including how it emerges and is shaped and refined by specific details; objectively and accurately summarize a text.

9-12R3: Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

9-12R7: Analyze how a subject/content is presented in two or more formats by determining which details are emphasized, altered, or absent in each account.

9-12SL1: Initiate and participate effectively in a range of collaborative discussions with diverse partners on complex topics, texts, and issues; express ideas clearly and persuasively, and build on those of others.

9-12SL2: Integrate multiple sources of information presented in diverse formats, evaluating the credibility, accuracy, and relevance of each source.

9-12W1: Write arguments to support claims that analyze substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

9-12W2: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

9-12W3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

9-12W4: Create a poem, story, play, artwork, or other response to a text, author, theme or personal experience; demonstrate knowledge and understanding of a variety of techniques and genres. Explain divergences from the original when appropriate.

9-12W5: Draw evidence from literary or informational texts to support analysis, reflection, and research.

25. The Achievery

Introducing a free online learning platform for students in K-12 schools

Scan QR Code

Urban Arts teaches students the art and technology of game development through computer science, coding, animation, music, and storytelling.

The videos are part of Achievery, created by AT&T and featuring lessons developed by national nonprofits. The Achievery features over 700 video lessons and worksheets across a variety of subjects, all aligned to nationally-recognized academic standards.

Use the QR code to check out 54 free videos from Urban Arts for developing game design literacy for middle and high school students (each with a downloadable lesson plan).

To begin, you need to create a free Achievery account. Follow the steps below to create an account.

Step 1 - Create account

Students aged 13 and older, parents, and teachers can create a free account. Parents or caregivers can also create sub-accounts for children who are under age 13. Begin by scanning the QR Code then click on e. In the upper right-hand corner is an option to Sign-up for a new account.

Step 2 - Search lessons

Search by subject, grade-level or academic standard. With content from over 20 nonprofit organizations, you can also explore lessons by organization.

Step 3 - Start learning

Click on your favorite lesson and start watching the accompanying video. When you're done watching, download a PDF worksheet and follow the instructions for the activity.

Schedule a workshop

Urban Arts is offering in-person and virtual workshops that explore many of the video game design lessons and activities featured on the Achievery platform. Groups of up to 40 students are welcome to visit their Learning Lab to learn all about video game design and digital artmaking. To learn more and schedule your workshop, contact:

Zingi Mkefa
Email: zingi@urbanarts.org
Telephone: 917 - 543 - 9559

26. What's Next? - Other Activities

EXHIBITION LINKS

David jones article

https://amsterdamnews.com/news/2024/01/04/urban-agenda-from-video-game-consumers-to-video-game-producers/

UA/ATT

https://www.schoolofinteractivearts.org/general-7

The Achievery and Urban Arts

The videos are part of Achievery, created by AT&T and featuring lessons developed by national nonprofits.

Scan QR Code

Interactive Map

NYC Gaming Community

Explore New York City's vibrant gaming culture with organizations, programs, and communities throughout the five boroughs.

https://arcg.is/mbq4P

NYC Video Gaming Resources

A map of additional video game resources available through the five boroughs.
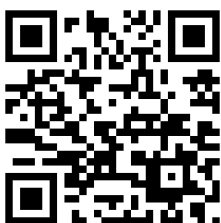
Scan QR Code

Battle of the Boroughs 2024

https://schools.nyc.gov/minecraft

Battle of the Boroughs

Showcases the potential of gamification in education through digital literacy, civic leadership and collaboration.

Scan QR Code

More Information on Exhibition

http://harlemvideogamespopup.org/

Video Games: The Great Connector

To learn more about the Exhibition.

Scan QR Code

Video Games: The Great Connector is presented by:
The Harlem Gallery of Science

This exhibit has been made possible through the generous support of:

The City College of New York

Harlem Community Development Corporation

Council on the Arts

The Ellen M Violett And Mary P R Thomas Foundation Inc

The Hyde and Watson Foundation

Brian Schwartz & Teri Black

Stan & Claire Altman

urban arts

NYC Cultural Affairs

SIMONS FOUNDATION

Curatorial Staff:	*Exhibition Design Staff:*
Nick Martinez	Mariano Desmarás
Ashlyn Sparrow	Marlyka Williams
Barry Joseph	

Advisory Members:

This exhibition was developed in close collaboration with three groups of advisories. One was a Youth Advisory composed of New York City teenagers. The second was a Community Leaders Advisory composed of individuals from learning institutions in and around Harlem. The third was a Games Expert Advisory composed of game designers, academics and others promoting the pro-social use of digital games in NYC.

Christopher Grant	Laura Ozoria	Anthony Casasnovas	Geneva Heyward
Ohany Villa	Julie Itwaru	Susan Perkins	Jaye "Letta J" Watts
Maria Shahbain	Kimira Colson	Mashfiq Ahmed	Shawn Pierre
Kgari Kgama-Gates	Samantha Moreno	Yiyi Zhang	Marcelo D. Viana Neto
Tadeos Stover	James Horton	Hessvacio Hassan	Kyra Wills-Umdenstock

This exhibit was also made possible through partnerships with:

Urban Arts
Harlem School of the Arts
The Strong National Museum of Play
Cecilia Gamo & Suchitra Sherpa
Games For Change
The GEE! Award

All of the many game designers and artists whose work is featured throughout the exhibit