Gaming for Museums

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Why Game Design?
Popular media like **film, television, music, fiction** and **graphic novels** have long been used to engage and **educate** youth.
Museums and libraries lead the way in empowering youth to engage with educational media first hand.
Why not with **gaming**?
Games are engaging and relevant

97% of tweens and teens regularly play computer and video games

-Pew research
Playing and designing games is good for learning

“The success of complex video games demonstrates that games can teach higher-order thinking skills such as strategic thinking, interpretative analysis, problem solving, plan formulation and execution, and adaptation to rapid change. These are the skills U.S. employers increasingly seek.”

-Federation of American Scientists
Games are participatory

Games are interactive and ‘lean forward.’ Players make decisions with consequences and experience agency.
Games let players explore different identities

Games allow players to step into different roles and worlds, helping to develop **awareness, context and empathy**.
Games motivate

Games engage players deeply through a delicate balance of challenges/goals and intrinsic / extrinsic rewards. Plus failure is fun!
Games are more than just writing code

Making a successful game involves collaboration across a combination of artistic, technical, business and other disciplines.
The game design learning pathway builds a motivation for STEM learning and careers

Designing a successful game involves

- Systems thinking
- Creative problem solving
- Art and aesthetics
- Writing and storytelling
- User experience design
- Communication and collaboration
- Cultural literacy
Grown ups care about kids designing games
Game Design 101
Games are systems

Just like mechanical, natural and social systems, games are systems. The game designer arranges the elements of the system to create a **fun** experience for the player through the balance of **challenges and rewards**.
Elements of a game system

Like any system, a game is made up of elements that work closely together.
Elements of a game system

• **Space** – the part of the world where the game takes place. Can be part of the real world (e.g. soccer field) or virtual (as in video games).
• **Goals** – what players try to achieve to win the game.
• **Mechanics** – the actions that happen in the game. The ‘verbs’ of the game (e.g. running, jumping, racing, solving).
• **Components** – the things that are part of the game. Can be physical (e.g. ball, base, umpire) or virtual (e.g. avatar, enemy, power-up).
• **Rules** – indicate the things that can (and cannot) happen in the game.
The elements of game systems are connected

Like the gears in a machine, the elements of a game are connected. Making a change to one affects the rest of the system.
Designing games to model systems

Games are systems, and designing a game that models a real-world system builds understanding of the relationships, constraints and parameters of that system.
The iterative design process

Game design is an iterative process. Even the best designers don’t get it right on the first try: they play lots of games, plan their designs, make their games, get feedback from users, analyze data and use it to improve the game... over and over.
Game Design at Museums
Youth Design Workshops

- Introduces young people to game design
- Creates an interest-driven opportunity to invite young people into your space
- Lots of scaffolding and support available
- Opportunities to connect with mentors and game industry professionals
Museum Staff Workshops

• Build the next generation of game-savvy teachers
• Learn the principles of game design
• Make original games
• Learn techniques to effectively mentor youth in game design
Club Programs

• Build key skills while engaging youth over time
• Create an interest-driven opportunity to invite young people into your space
• Lots of scaffolding and support available
• Opportunities to connect with mentors and game industry professionals
Exhibition Tie-Ins

- Create gaming experiences that connect to exhibition content
- Custom game design exercises that challenge youth to draw on exhibition content as they create games
- Opportunity to extend museum experience outside the walls
Family Game Nights

- **Hands-on** activities with board, card or digital games
- **Intergenerational** play
- Great way to engage community and invite them into your space
- Promotes digital literacy, community engagement
Case Study: American Museum of Natural History

The American Museum of Natural History in NYC knows the value of game design for encouraging systems thinking and enabling meaningful systems modeling.

Museum's education department worked with E-Line Media to integrate their Hall of Ocean Life into a game design workshop. Participants first learned about game design principles, then toured the exhibit for inspiration, then created games with the program Gamestar Mechanic based on systems of ocean life.

Kids were invited back 2 weeks later to present their games to a panel of game design professionals and get advice in preparation for the STEM Challenge.
Activity to do at your own museum:
Play and remix the elements of Rock Paper Scissors

Lesson plan at: https://sites.google.com/a/elinemedia.com/gsmlearningguide/lessons-on-game-design/physical-game-exercises/rock-paper-scissors-activity
Activity to do at your own museum:
Design and iterate on a physical game

Design a game using only the objects in this bag

Lesson plan at: https://sites.google.com/a/elinemedia.com/gsmlearningguide/lessons-on-game-design/physical-game-exercises/game-kit-exercise
There are lots of great tools for learning game design and making games. Some are designed for beginners who want to learn (no programming!). Others let you make games like the pros!
2014 STEM Challenge Information
Inspired by the Educate to Innovate Campaign, President Obama’s initiative to promote a renewed focus on Science, Technology, Engineering, and Math (STEM) education, the National STEM Video Game Challenge is a multi-year competition whose goal is to motivate interest in STEM learning among America’s youth by tapping into students’ natural passion for playing and making video games.
Overview

• Game design competition for Middle and High School students
  • Grades 5-12
  • Individuals and teams (up to 4 members)
• Design and make original games
  • Playable games or written game designs
  • Games can be about any subject
• Win Prizes
  • Cash prize, as well as game design and educational software for student winners
  • Cash prizes for sponsoring organization
stemchallenge.org

2014 Challenge Important Dates

• Entry Period Opens – October 28, 2014
• Entry Period Ends – February 25, 2015
• Winners Notified – March 2015
• Winners Announced – May/June 2015
How to Enter

1. Visit www.stemchallenge.org to view the official rules and start your online application
2. Design your game
3. Return to www.stemchallenge.org and upload your completed game materials to complete your entry
Further Resources

Check out www.stemchallenge.org for more great game design learning resources including

• Game making tools
• Learning tools and platforms
• Webinars
• Toolkits for parents, teachers and mentors
• Events
• Challenge info
• More!