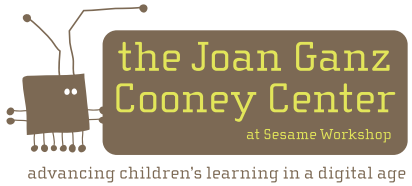
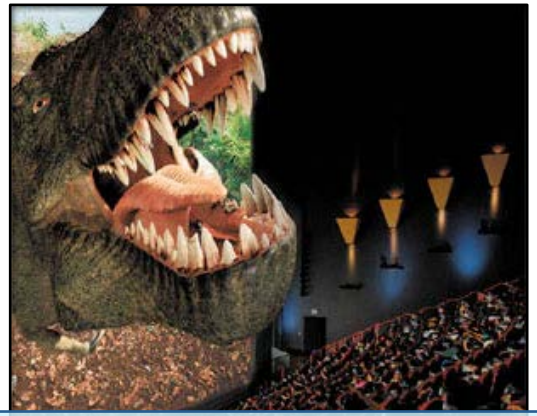


Gaming for Museums

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

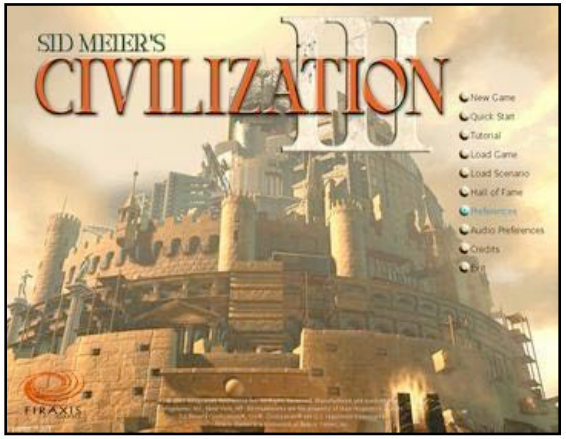
-Pew research

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.

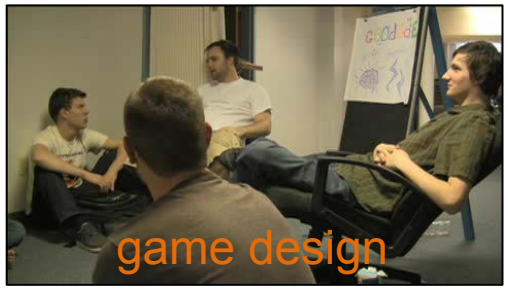
Games let players explore different identities

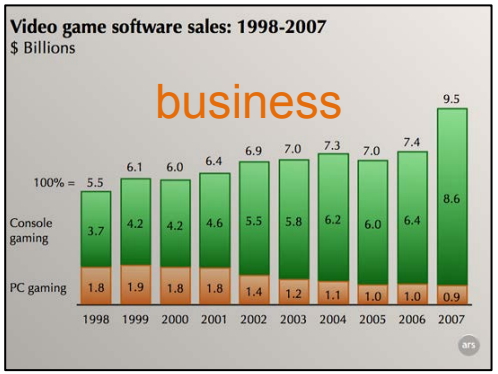
Games allow players to step into different roles and worlds, helping to develop awareness, context and empathy.

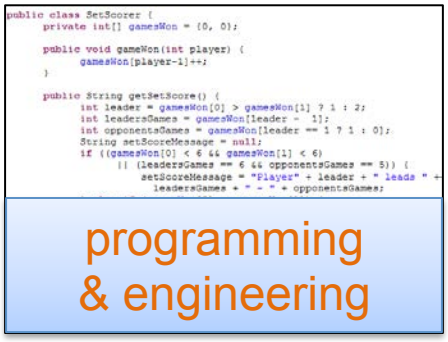
Games motivate

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

TIME FOR KIDS

CNN

edWEEK

U.S.News & WORLD REPORT

WIRED

Game Design 101

Games are systems

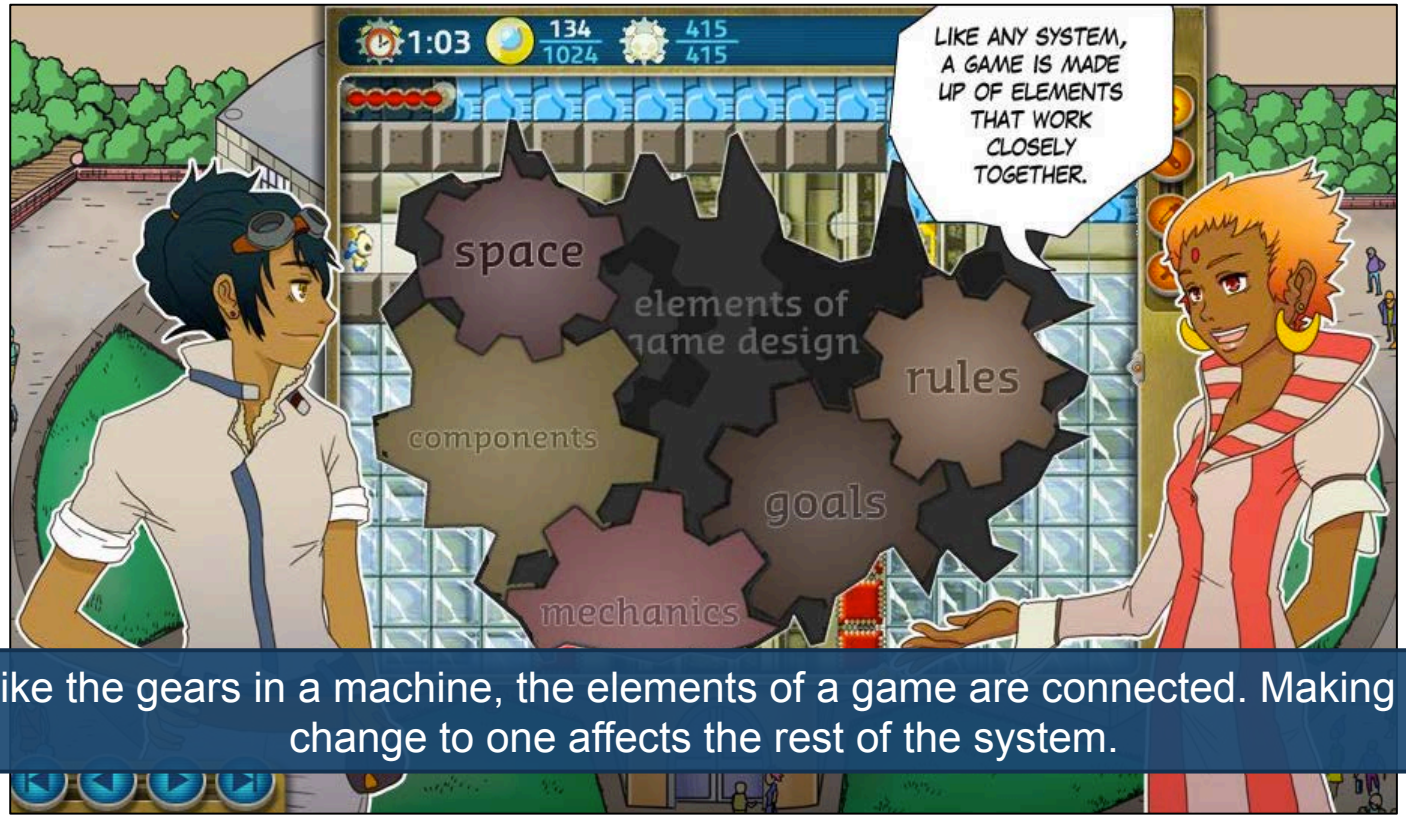
Just like mechanical, natural and social systems, games are systems. The game designer arranges the elements of the system to create a fun experience for the player through the balance of challenges and rewards.

Elements of a game system

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

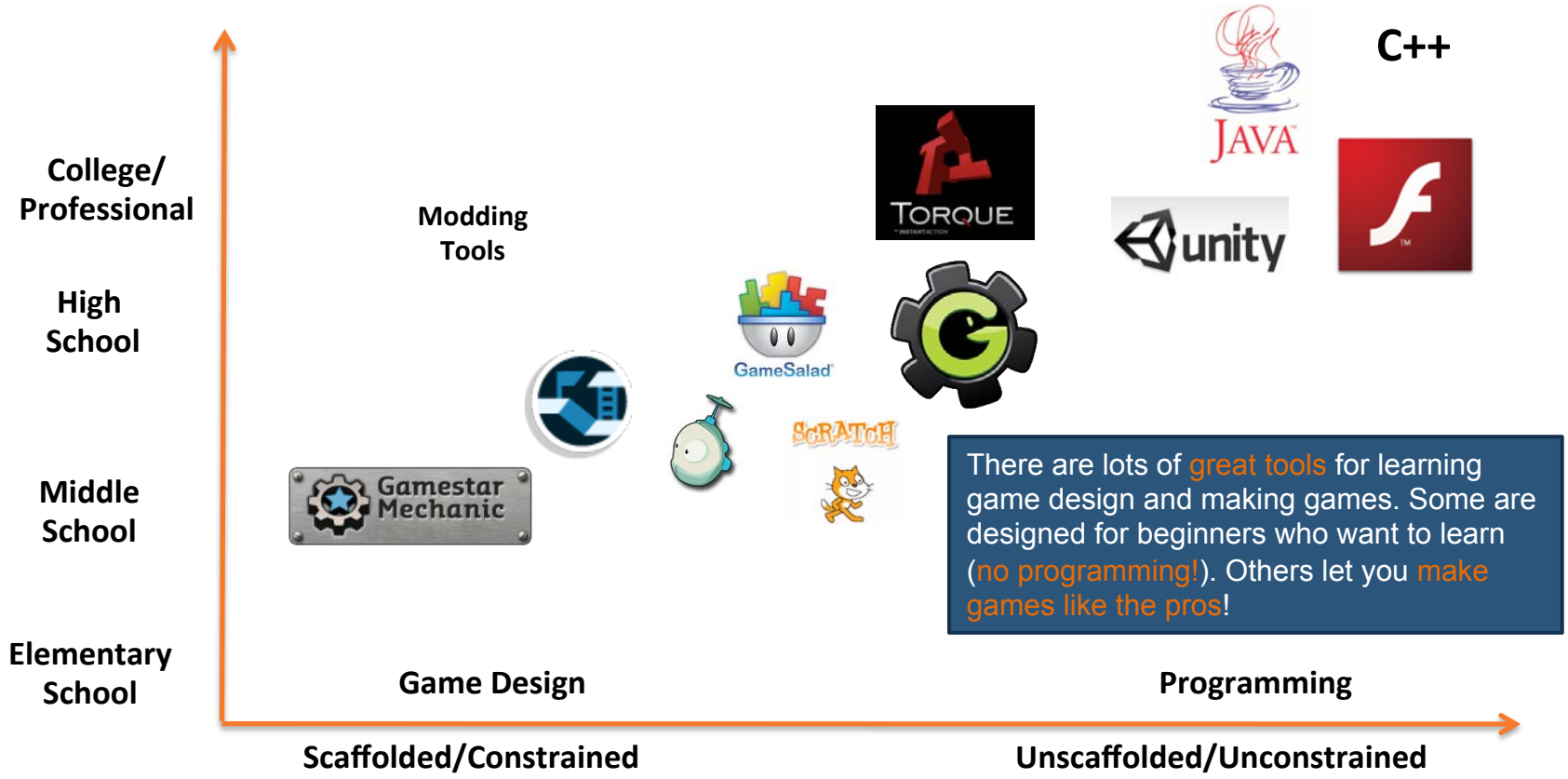
Lesson plan at: https://sites.google.com/a/elinemedia.com/gsmlearningguide/lessons-on-game-design/physical-game-excercises/rock-paper-scissors-activity

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-excercises/game-kit-exercise

Game Design Tools



2014 STEM Challenge Information

stemchallenge.org

Concept

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.

stemchallenge.org

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!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