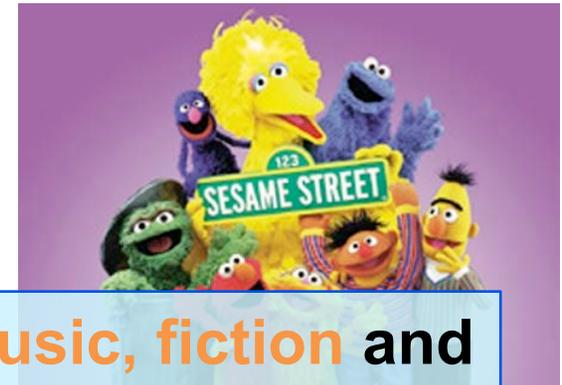


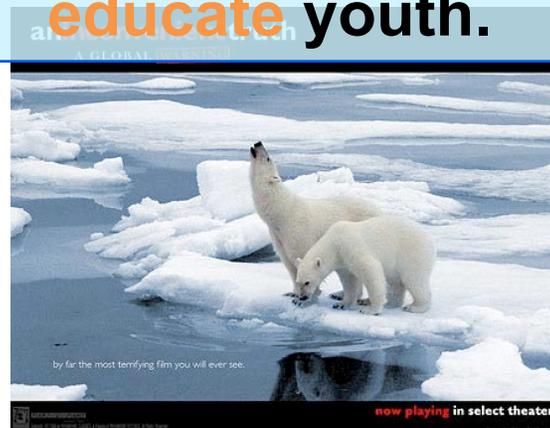
Gaming for Libraries

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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

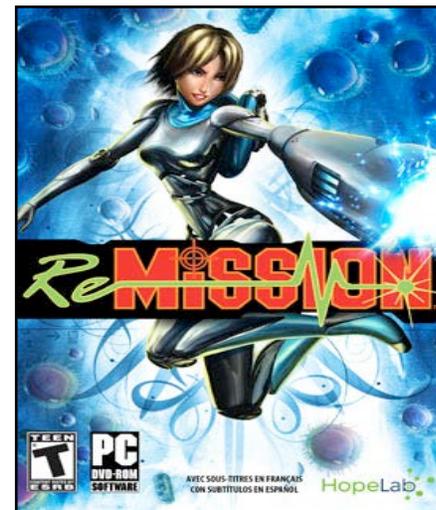
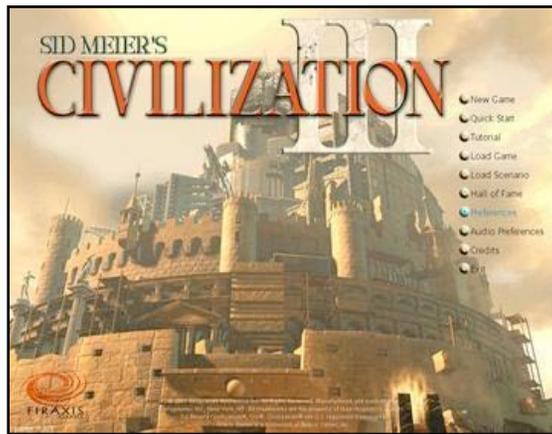
Playing and designing games is good for learning



“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



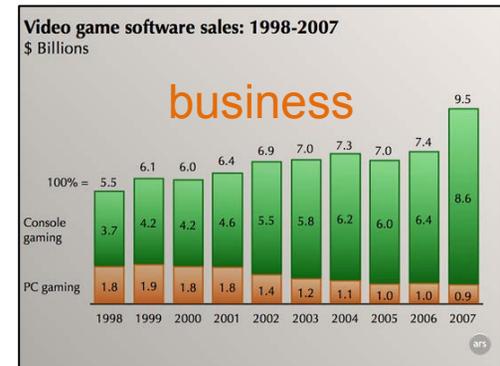
Games allow players to step into different roles and worlds, helping to develop **awareness**, **context** and **empathy**.

Games motivate



Games engage players deeply through a delicate balance of **challenges/goals** and intrinsic / extrinsic **rewards**. Plus **failure is fun!**

More than just writing code



```

public class SetScore {
    private int[] gamesWon = {0, 0};

    public void gameWon(int player) {
        gamesWon[player-1]++;
    }

    public String getSetScore() {
        int leader = gamesWon[0] > gamesWon[1] ? 1 : 2;
        int leadersGames = gamesWon[leader - 1];
        int opponentsGames = gamesWon[leader == 1 ? 1 : 0];
        String setScoreMessage = null;
        if ((gamesWon[0] < 6 && gamesWon[1] < 6)
            || (leadersGames == 6 && opponentsGames == 5)) {
            setScoreMessage = "Player" + leader + " leads " +
                leadersGames + " - " + opponentsGames;
        }
    }
}
    
```

programming & engineering

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

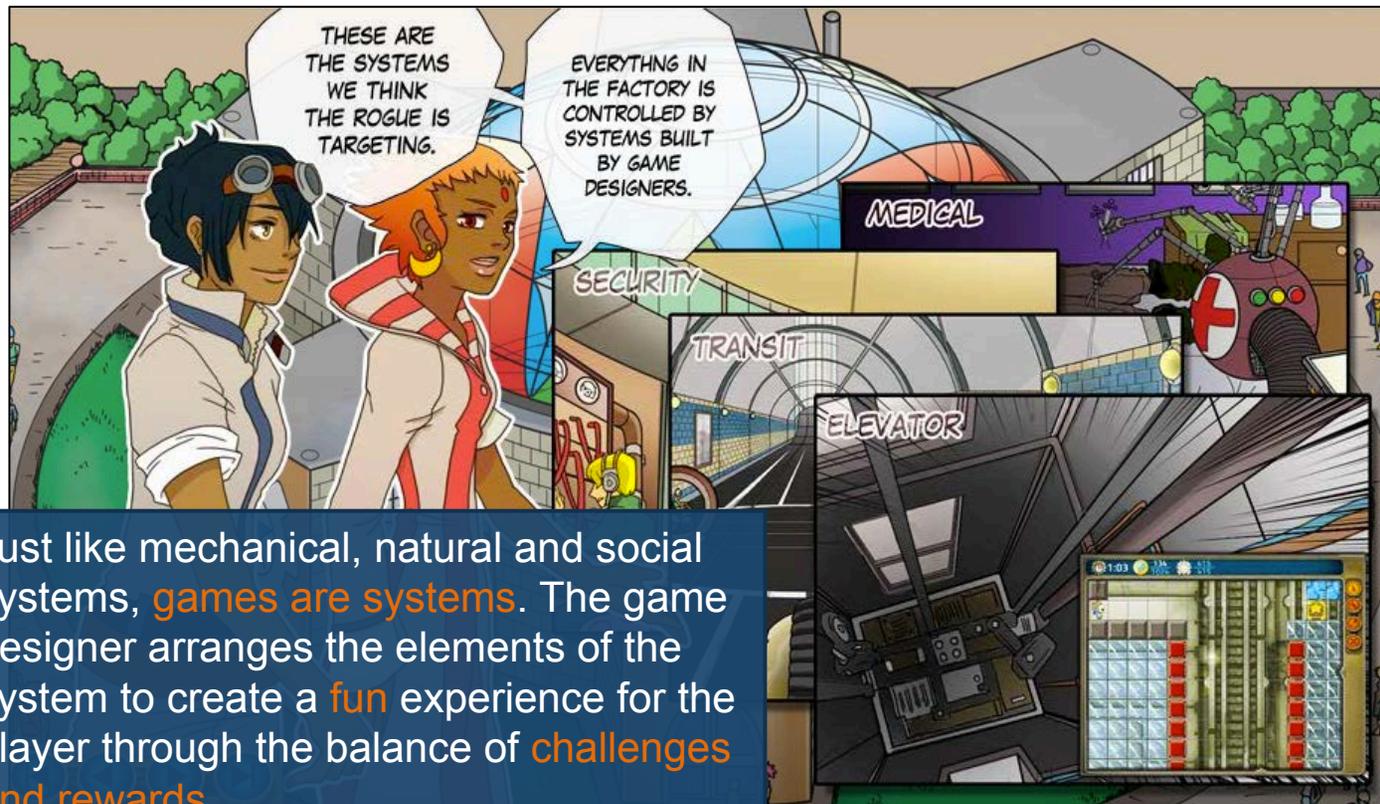


Grown ups care about kids designing games



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**.

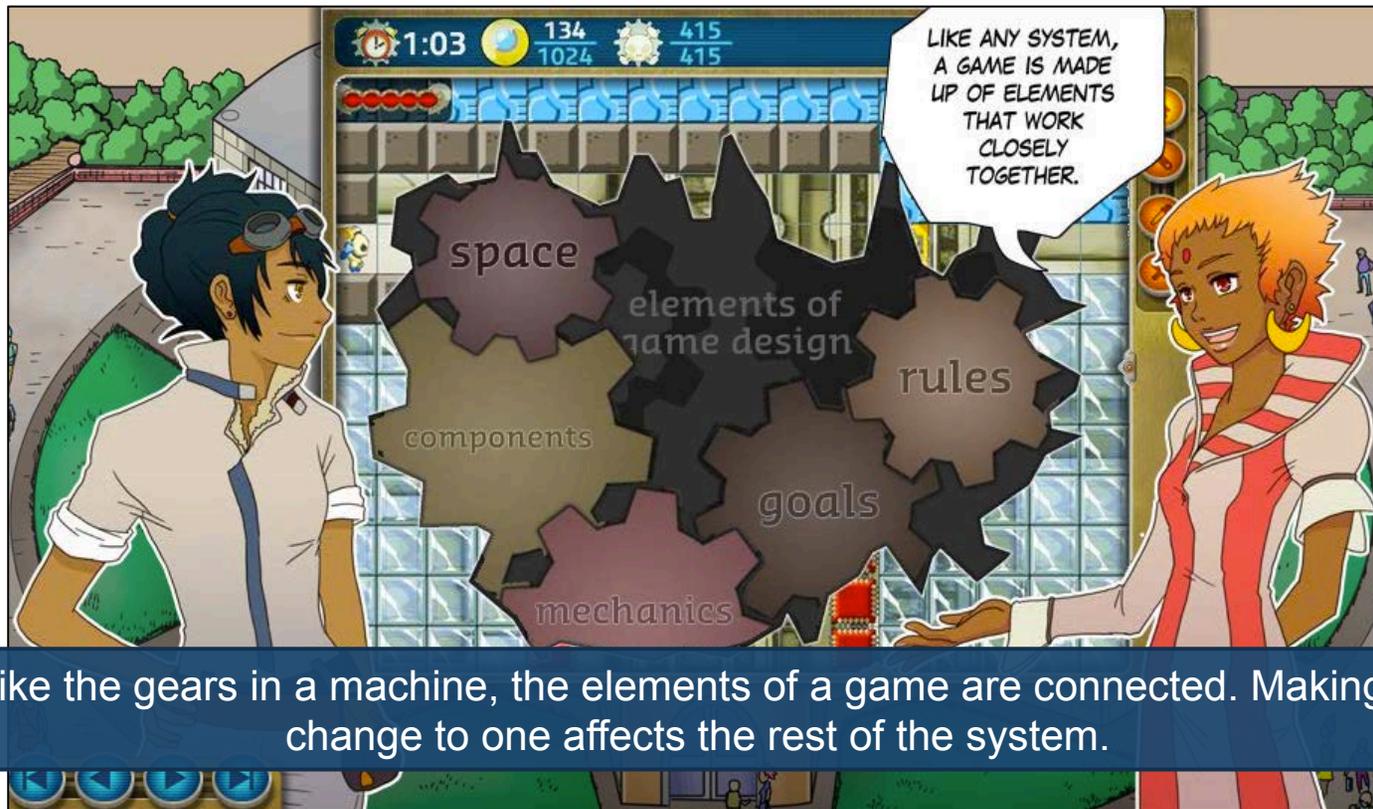
Elements of a game system



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*



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 Libraries

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**



Library 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**



Collection Tie-Ins



- Create gaming experiences that **connect** to collection content
- Custom game design exercises that challenge youth to **draw on collection content** as they create games
- Opportunity to extend library 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: Brooklyn Public Library

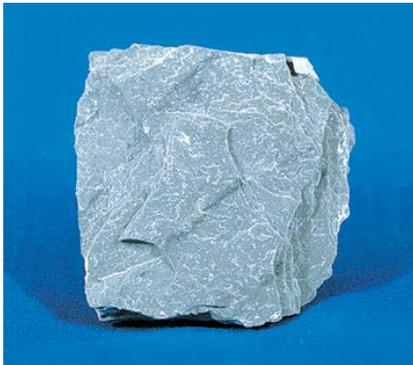
Brooklyn Public Library received a New York State Library Family Literacy Grant in 2011 to fund a **GameSpace** project.

Purchased enhanced **gaming equipment** for 12 branches: Wiis, PS3s, games and other equipment.

Partnered with Global Kids to do **workshops for teens**, using the library's teen interns to facilitate the workshops (building digital and physical games, storytelling).

Other events: Hungercraft, GameSpace staff trainings, STEM Challenge workshops

Activity to do at your own library: 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-exerciscises/rock-paper-scissors-activity>

Activity to do at your own library: Design and iterate on a physical game

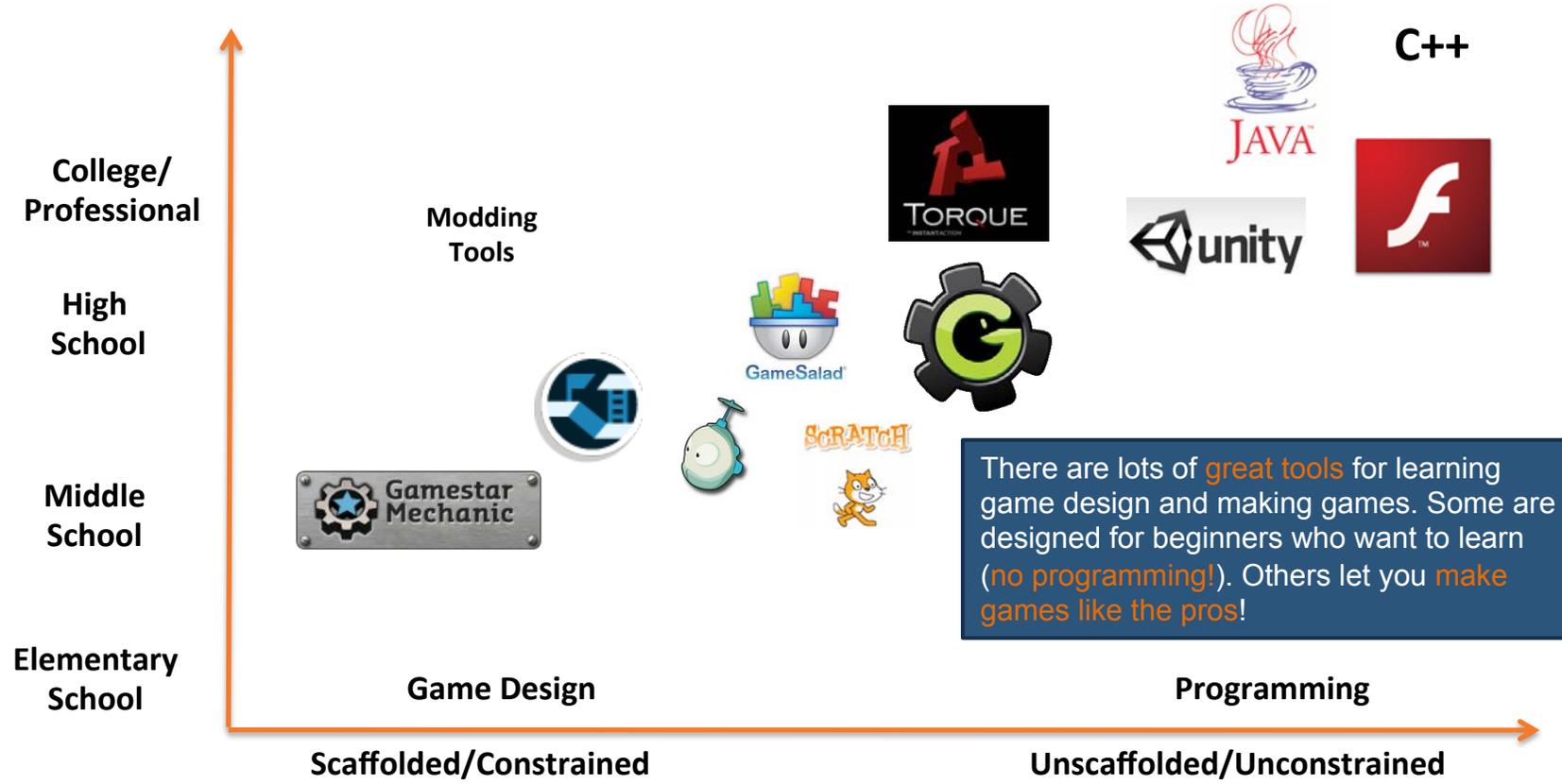


Design a game using only the objects
in this bag



Lesson plan at: <https://sites.google.com/a/elinemedia.com/gsmlearningguide/lessons-on-game-design/physical-game-exerciscs/game-kit-exercise>

Game Design Tools



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

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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