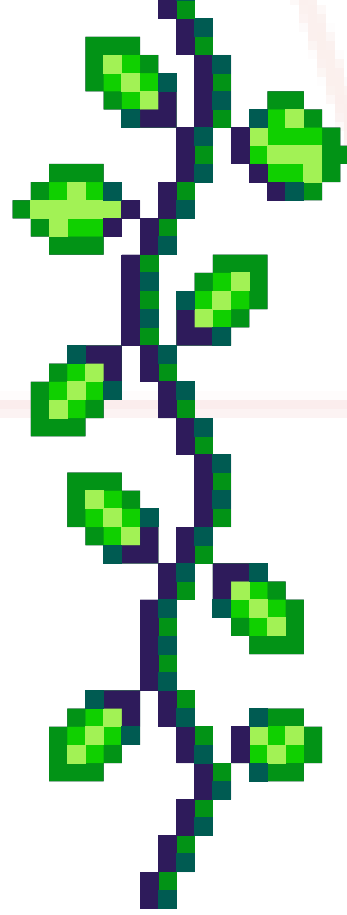
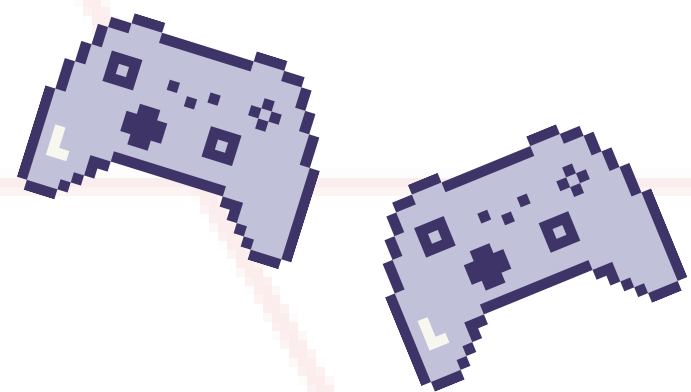


Stop By!
play a game [or two]



THE SCRATCH ARCADE

Deeper Learning & Authentic Engagement through Sustained Design & Collaboration



Free Lesson Plans

Download, adapt, use, and share!



OVERVIEW

Students design, build, test, and showcase arcade games using Scratch, culminating with a class game fair.

- **Duration:** ~12 elective class periods
- **Grade Level:** Middle school, introductory CS
- **Standards:** 8.1.8.AP.1, 8.1.8.AP.3, 8.1.8.AP.6, 8.1.8.AP.8, 8.1.8.AP.9, 8.1.8.ED.2, 8.2.8.EC.2

PROJECT PACING

See detailed pacing suggestions as well as daily class agendas in the provided documents!

- **Day 1:** Explore existing games
- **Day 2:** Blueprint arcade game concepts
- **Days 3-7:** Program Scratch game
- **Day 8:** Peer review, beta testing
- **Days 9-10:** Incorporate feedback and finalize
- **Day 11:** Class arcade/carnival celebration
- **Day 12:** Reflections & debrief discussion

GRADES & SCORING



Sample rubrics with point distributions are provided in the lesson resources.

- **Preparedness & Engagement:** Daily check-in reflections
- **Classwork:** Scratch exploration, Beta testing feedback
- **Assessment:** Final project, Post-project reflections

TECHNICAL REQUIREMENTS

- 2+ sprites (player + game character)
- 2+ costume changes per sprite
- 2+ stage backgrounds
- 2+ variables used
 - [one for game logic, one for player score]
- 1+ repeat (loop) block
- 1+ if (conditional) block
- 1+ extension block (sound, pen, music)
- A reasonable scoring system
 - [awards players between 1 - 3 tickets]

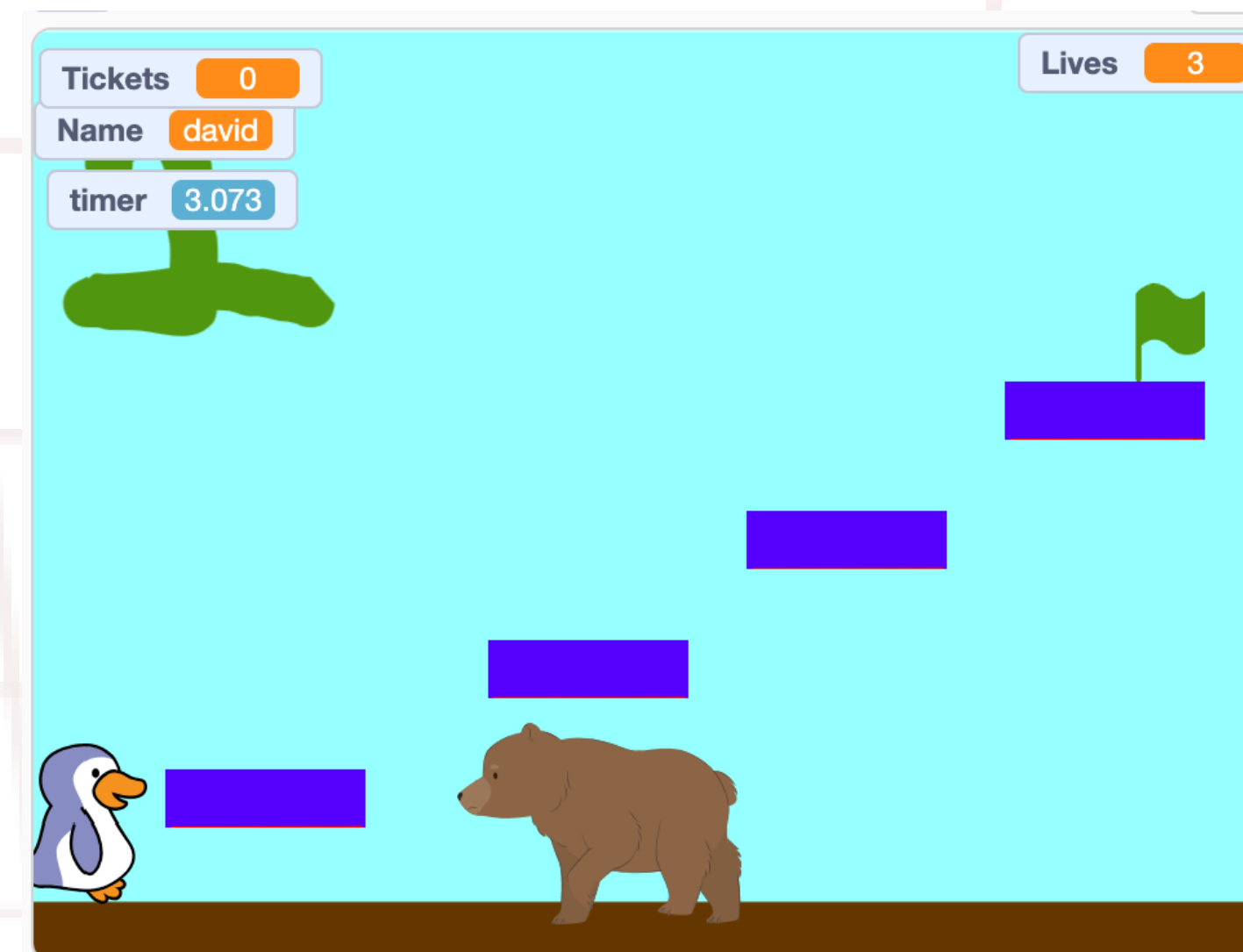
KEY PROJECT PRINCIPLES

1. Authentic Engagement
 - Students create games for real audiences
 - Carnival format provides meaningful context
 - Ticket system adds gamification element
2. Sustained Learning
 - Multi-week project allows deep exploration
 - Daily check-ins track progress and challenges
 - Scaffolded support throughout development cycle
3. Collaborative Construction
 - Paired programming encourages peer learning
 - Beta testing phase builds feedback skills
 - Shared carnival creates community experience

GAME TYPES:

Flappy Bird, Road-Crossing, Platformer, Clicker Game, Mazes, Escape Room, Puzzles, Word Games, Trivia, Golf, Sports, Racing, Snake Game, Reaction Time Games

SAMPLE PROJECTS & PEER FEEDBACK



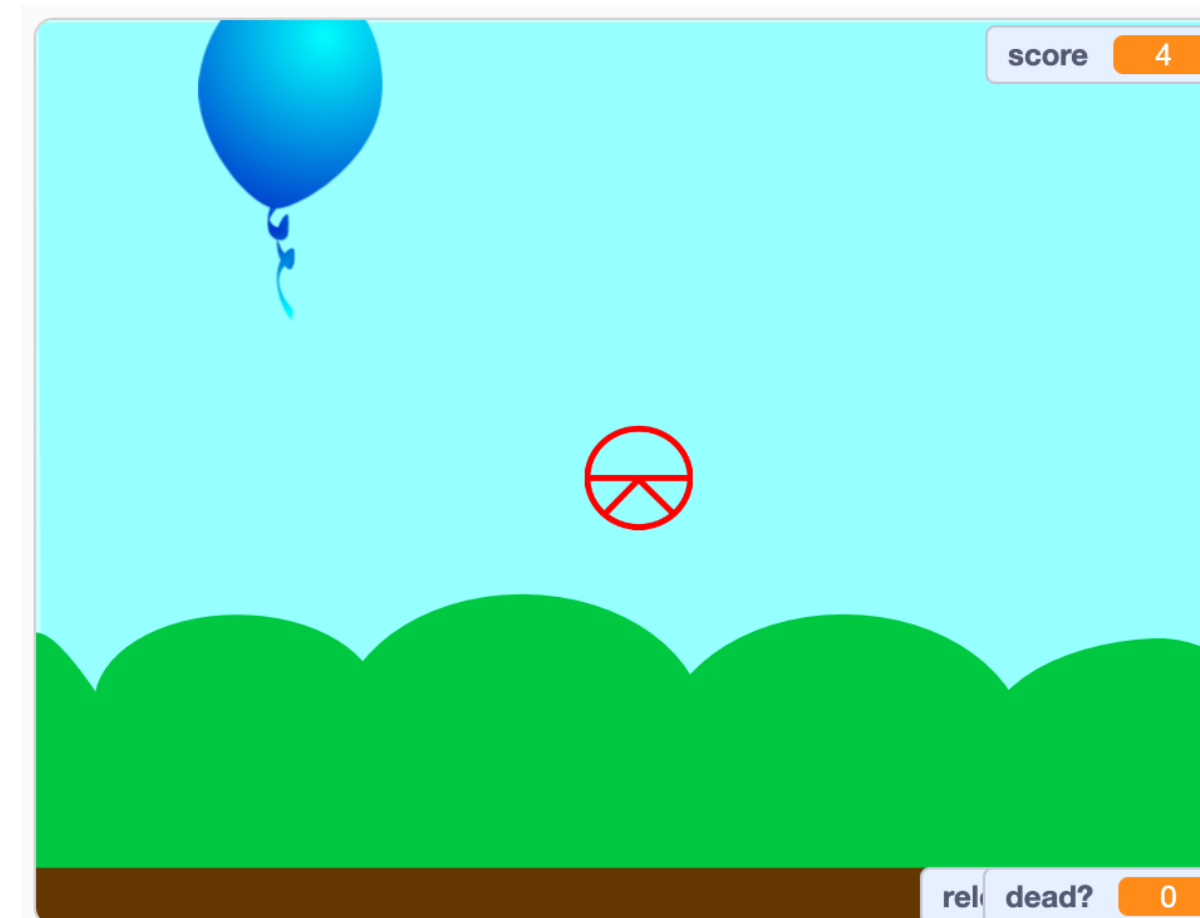
Xpertise

The directions and guidance is helpful
I struggled with level 2. How do you get around the faces?
Maybe remove the timer, it is a little distracting.
Maybe add power-ups to make the game more interesting.



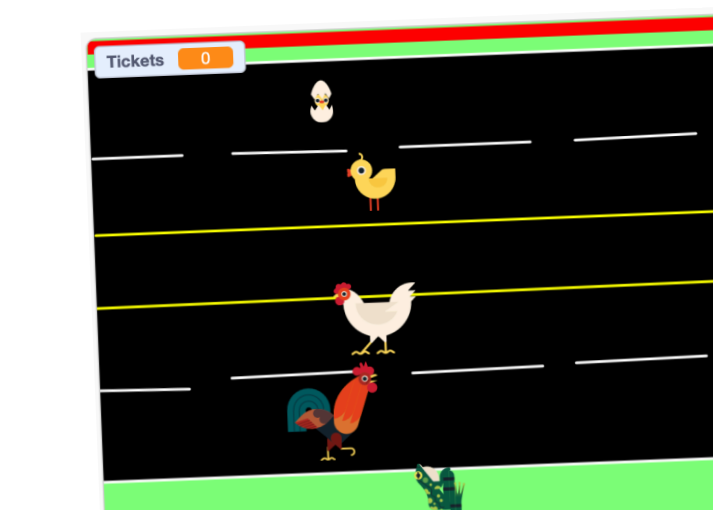
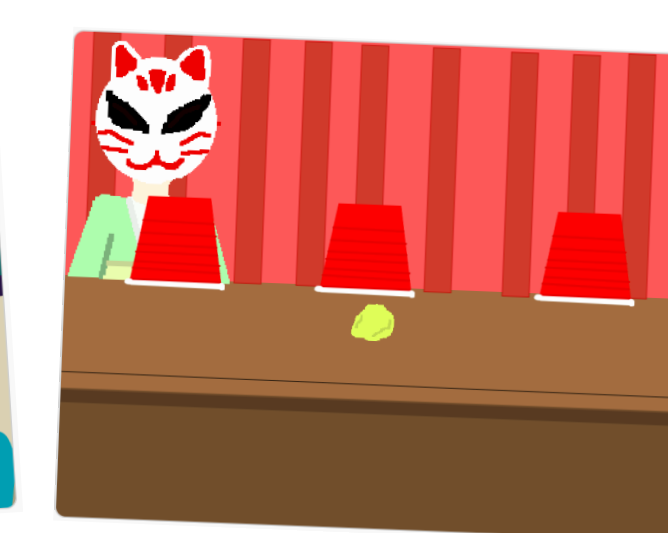
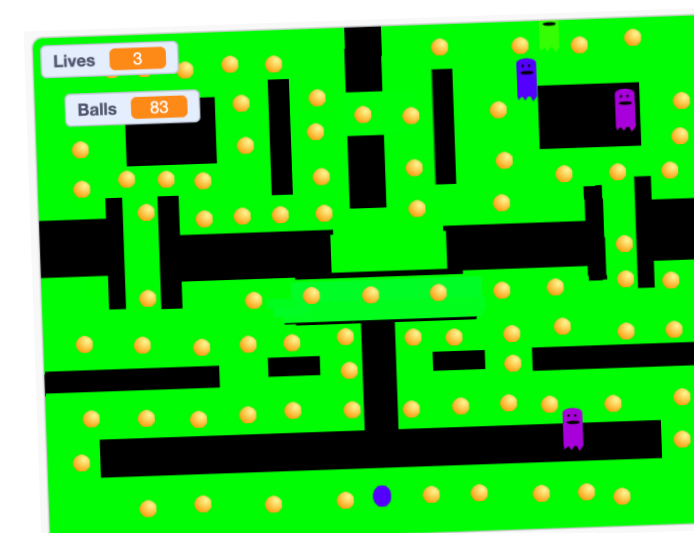
Quidditch

The music and sound effects were cool and gave a good vibe to the game.
Please give better instructions. I didn't know what to do.
It took me some time to figure out the controls, but then it was a cool setup.
The players are a little small to see.



Balloon Popping

Loved the pew pew sounds but wish the balloons popped or changed when I got them
Add instruction - didn't realize I had to hit the space bar to start
Add more balloons or making it more fast - too much waiting
It would cool to have more than one balloon at once, maybe different points or one's that cause you to lose points.



DIFFERENTIATION

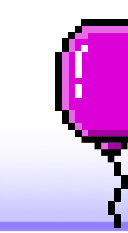
For struggling learners:

- Providing Scratch code shells
- Pre-made sprite libraries
- Modified technical requirements

For advanced learners:

- Custom sounds and animations
- Modified technical requirements
- Creating custom blocks (functions)

CONNECTIONS AND EXTENSIONS



Core computer science topics:

- Programming fundamentals (sequential programming, loops, conditionals, variables)
- Persistence, testing, and debugging!
- Constructive peer feedback and code review
- Documenting and writing about code
- The *algorithms* of games!

Cross-curricular opportunities:

- Art & Design: visual design, user interface, character creation, digital storytelling
- Mathematics: variables, coordinate systems
- ELA: technical writing (documentation and user instructions), written and verbal communication skills, reflective writing

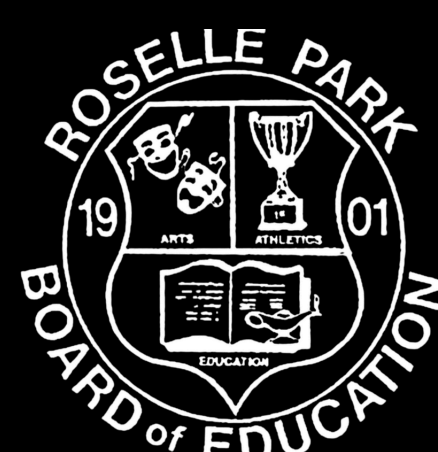
Great in-class discussions:

- What are the positive and negative impacts of gaming on our lives? Communities? Health? The environment?
- How has gaming *technology* changed over time? How has this affected the *games* themselves?
- What makes a game fun? How challenging should it be? How complicated should the rules be?



Ready for Level Two?

For more information and resources, visit the online drive at go.rutgers.edu/scratcharcade



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