



Game Design 209

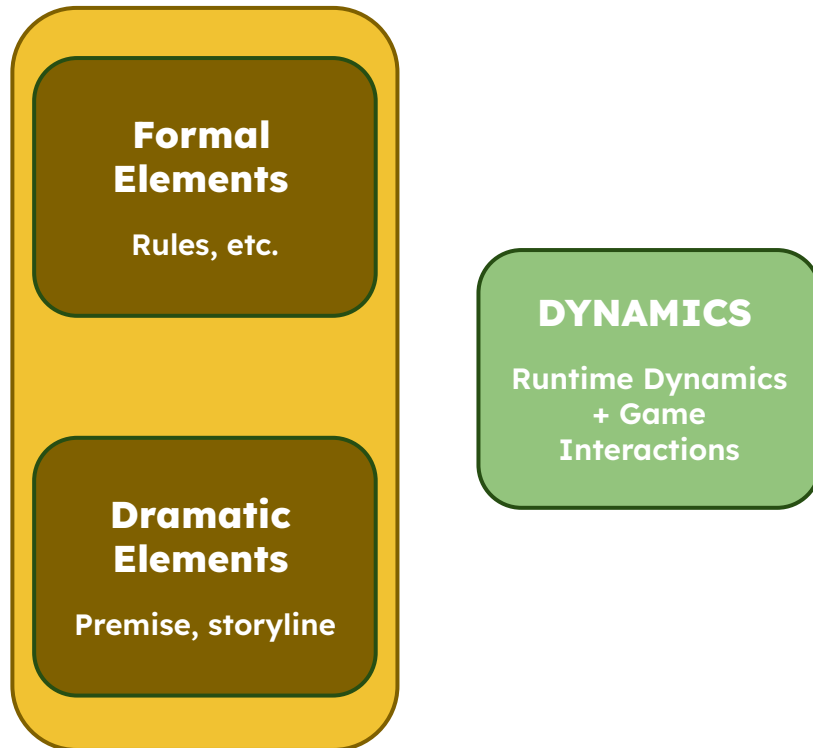
Prof. Diana Franklin

MDA Framework

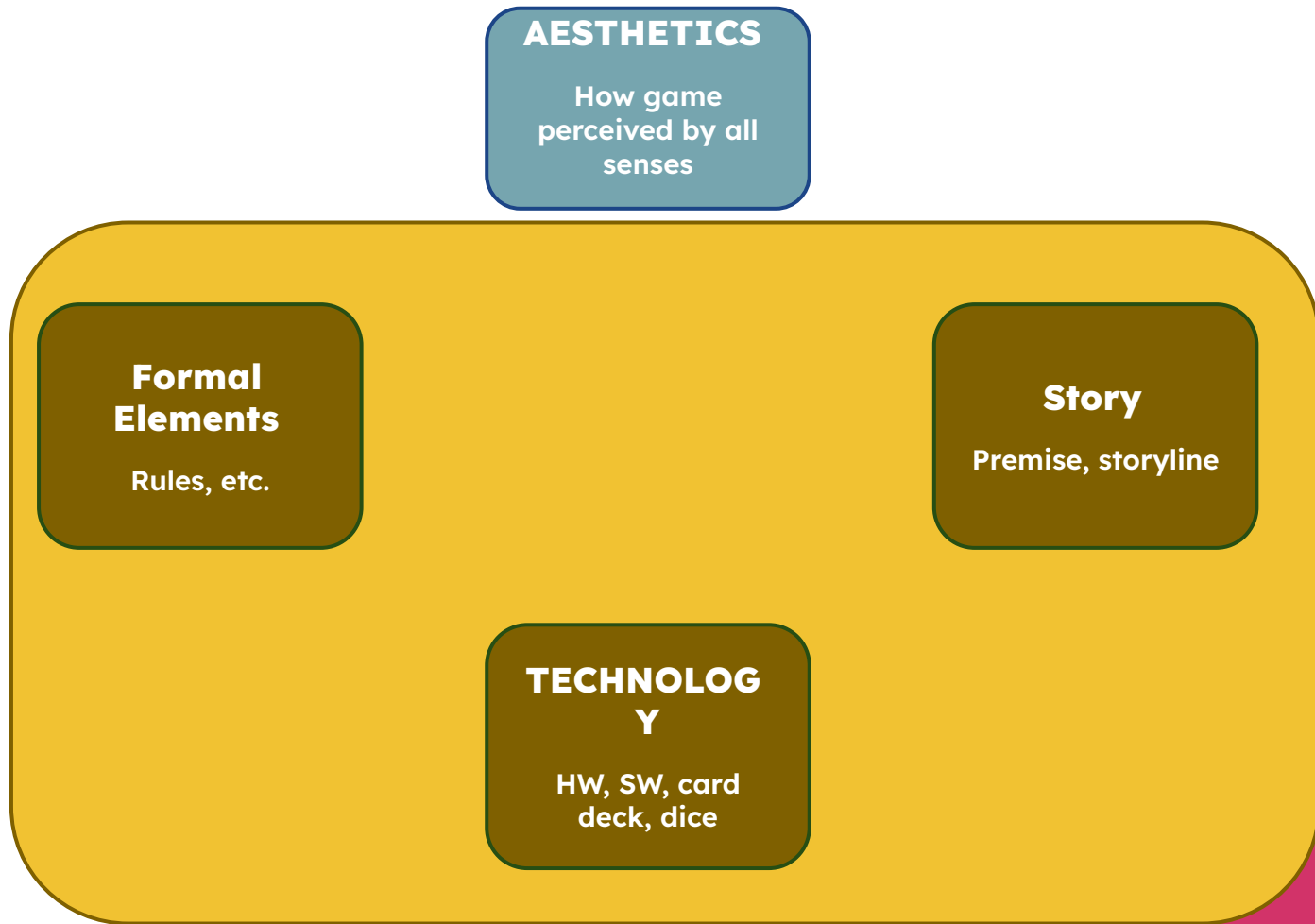


Modifying our day 1 card game changed the dynamics, which changed the emotions

Fullerton's Game Design Workshop



The Elemental Tetrad

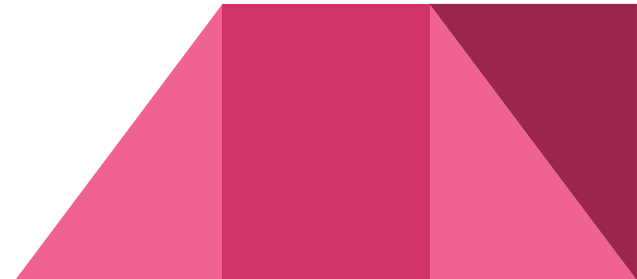


Game Development Outline

#1 - Learning through Formal Elements

#2 - Engagement through Dramatic Elements

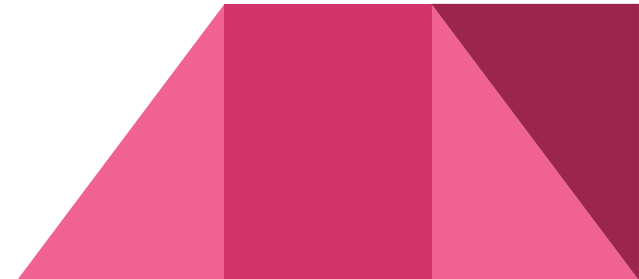
#3 - Additional Motivational Factors



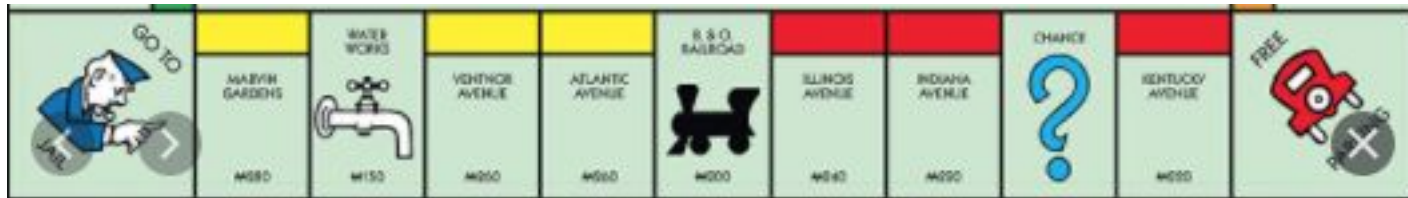
Element #1:

Formal Elements (Game Mechanics)

Distribute Handout



Monopoly



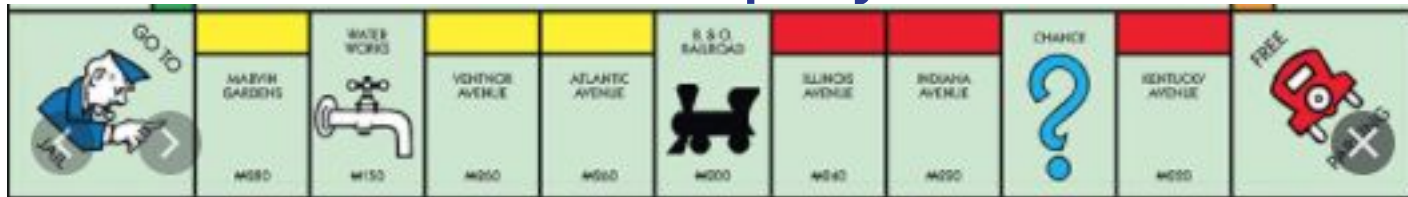
Level 1: Buy properties

- people pay you when they land on your property

TITLE DEED	
INDIANA AVENUE	
Rent	M18
Rent with color set	M36
Rent with 	M90
Rent with 	M250
Rent with 	M700
Rent with 	M875
Rent with 	M1050
Houses cost	M150 each
Hotels cost	M150 each (plus 4 houses)

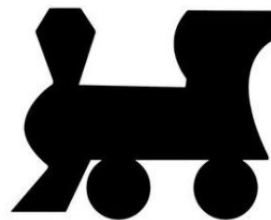
© 1985, 2013 HASBRO

Monopoly



Level 2: Strategically buy matching properties

TITLE DEED	
INDIANA AVENUE	
Rent	\$18
Rent with color set	\$36
Rent with 1 house	\$90
Rent with 2 houses	\$250
Rent with 3 houses	\$700
Rent with 4 houses	\$875
Rent with 5 houses	\$1050
Houses cost	\$150 each
Hotels cost	\$150 each (plus 4 houses)



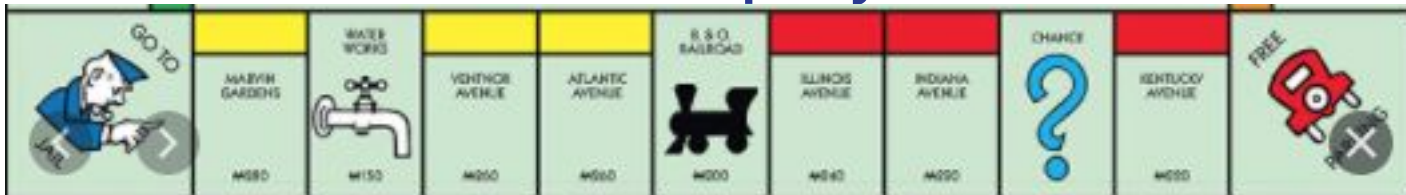
B. & O. RAILROAD

Rent	\$25.
If 2 R.R.'s are owned	50.
If 3 R.R.'s are owned	100.
If 4 R.R.'s are owned	200.

Mortgage Value \$100.

WATER WORKS	
If one "Utility" is owned rent is 4 times amount shown on dice.	
If both "Utilities" are owned rent is 10 times amount shown on dice.	
Mortgage Value	\$75.

Monopoly

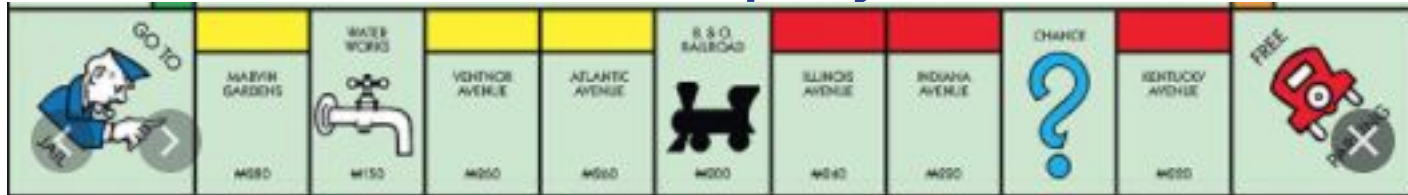


Level 2: Buy houses, hotels

TITLE DEED	
INDIANA AVENUE	
Rent	£18
Rent with color set	£36
Rent with 	£90
Rent with 	£250
Rent with 	£700
Rent with 	£875
Rent with 	£1050
Houses cost	£150 each
Hotels cost	£150 each (plus 4 houses)

© 1935, 2013 HASBRO

Monopoly

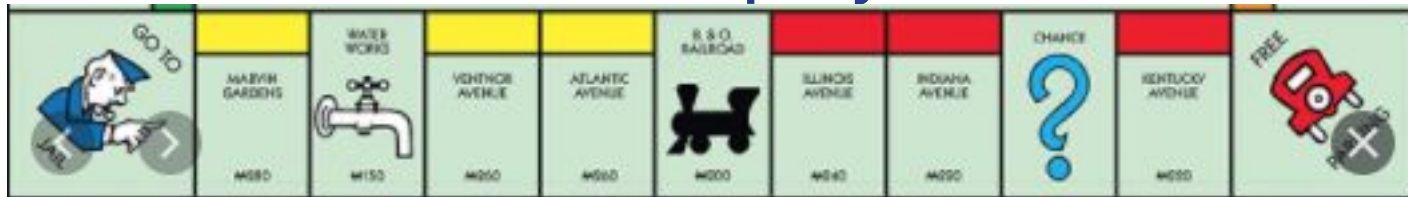


Can mortgage property

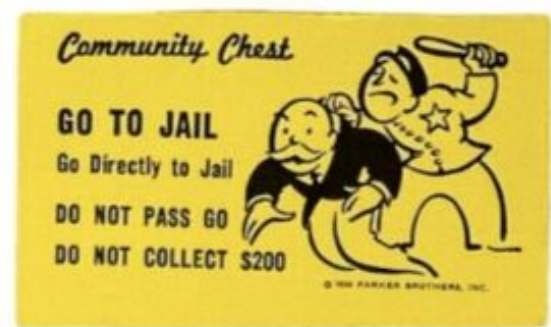
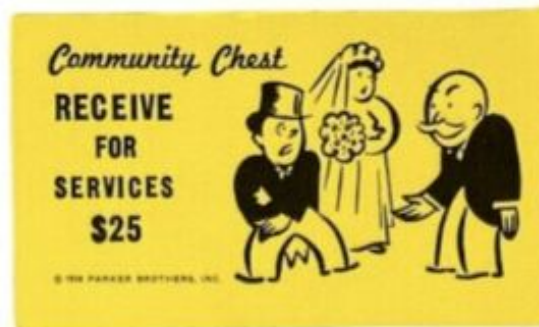
You get money for that, but no longer charge players for landing on it.

At least others don't get property
sell / buy property to/from players

Monopoly

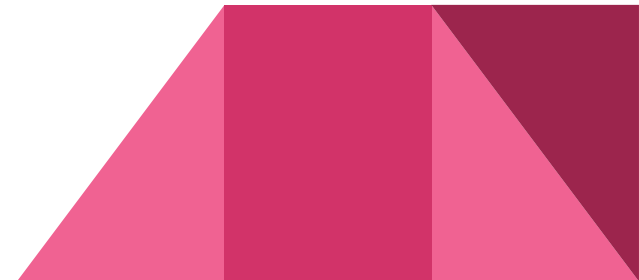


Randomness: Chance, Community Chest, Die rolls



Activity #1: Analyze Monopoly

Identify Learning Goals & Supporting Game Mechanics



Activity #1:

LT's and game mechanics

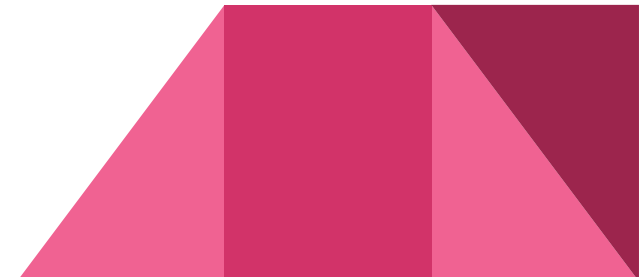
Balancing current cash vs future investment potential

Negotiation - you can trade things as when someone needs cash

Competitive decision making - buying all properties of a color, or buy other peoples' colors so they can't have a monopoly

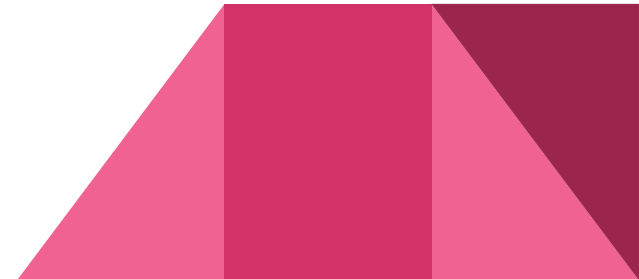
Math - being the banker and making change

Randomness means that there are no guarantees



Activity #2:

Redesign Monopoly for 5 year olds



Activity #2:

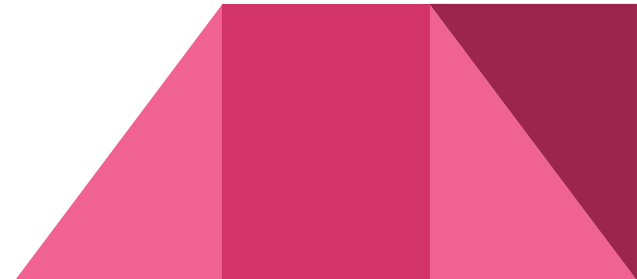
Redesign Monopoly for 5 year olds

Only use \$1 bills

Make the buildings apple trees that produce apples

Remove utilities and railroads

If you own all of one color, rent is doubled



Activity #2:

The real monopoly Jr

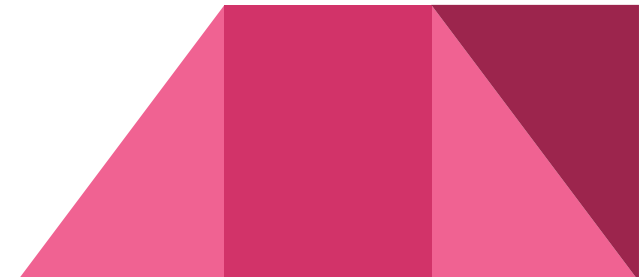
No houses or hotels

Remove utilities and railroads

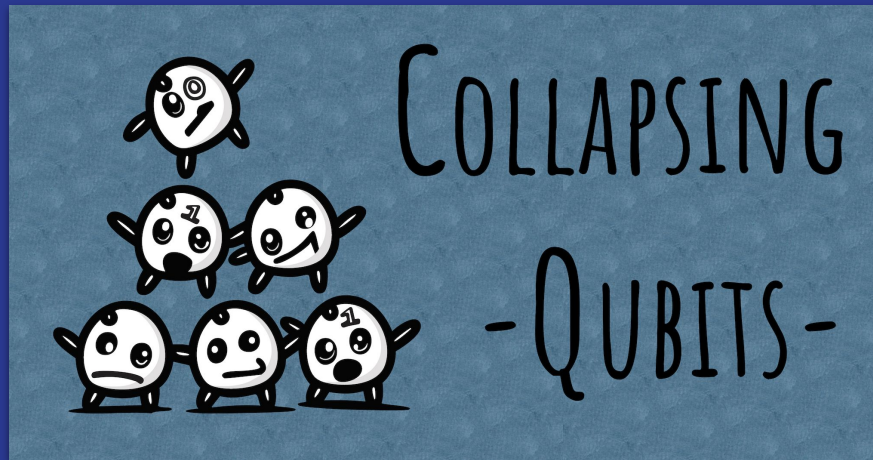
If you own all of one color, rent is doubled

No choice - if you land somewhere, and no one owns it, you are required to buy it

Simplified property values



Play Collapsing Qubits!

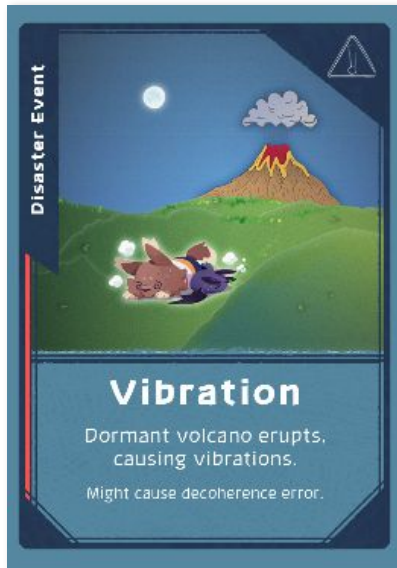


Building intuition
for the major quantum phenomena
involved in quantum computing

COLLAPSING -QUBITS-

GOAL

Be the last player with a working quantum program!

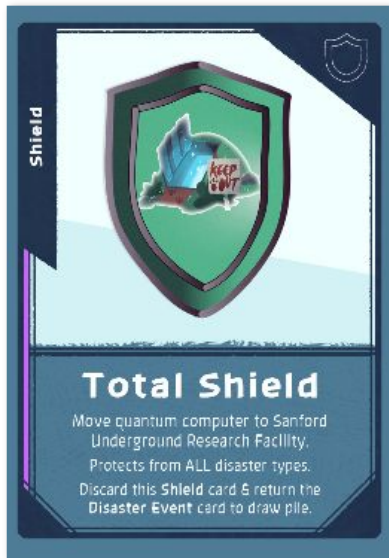


Avoid DISASTER EVENTS, which collapse your qubits!

COLLAPSING
-QUBITS-

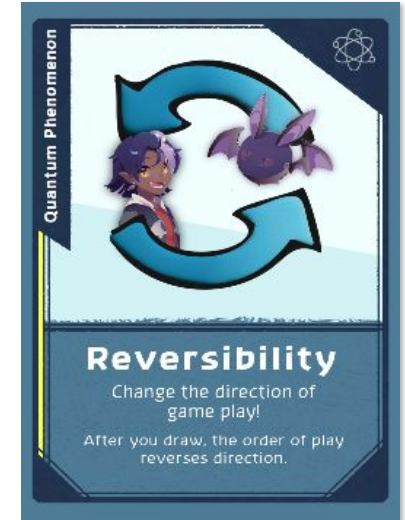
TIP!

The total shield protects against ALL disasters!



Use SHIELDS, to protect your qubits!

COLLAPSING -QUBITS-



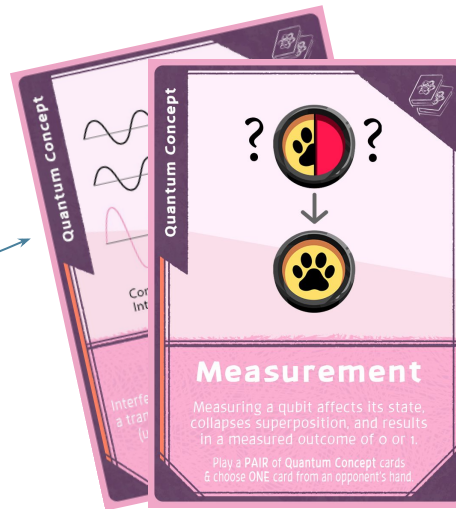
Use QUANTUM PHENOMENA to:
Thwart other players
Improve your chances

COLLAPSING -QUBITS-

RULE! Make sure to check the card type!
Only pairs of the same **type** count



GAME CARDS



CONCEPT CARDS



COMPUTER PARTS

Use pairs of pink cards with the same type
to steal a card from your opponents!

COLLAPSING -QUBITS-



PLAY ANY CARDS YOU WANT

PRO TIP!
TRY TO SAVE YOUR CARDS UNTIL
YOU NEED THEM!

DRAW A CARD

(UNLESS YOU PLAYED A CARD THAT LETS YOU SKIP!)

DID YOU DRAW A DISASTER?!?



YES

CAN YOU USE A SHIELD?

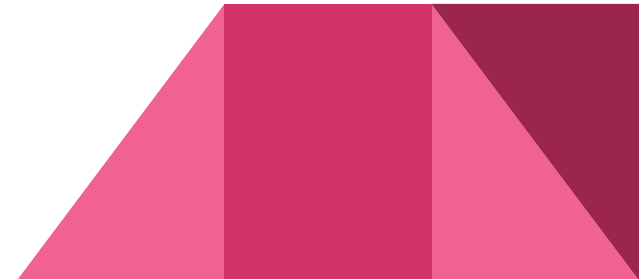
No

No

YES

YOU LOSE :(

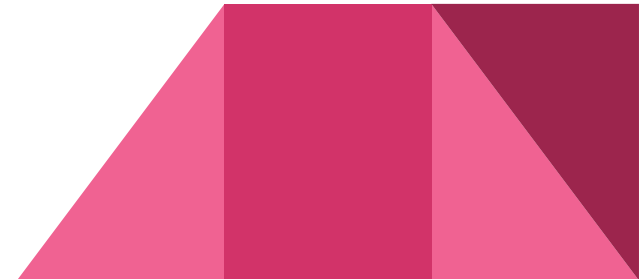
NEXT PLAYER'S TURN.



GETTING READY

Before starting make sure to:

1. Remove all the **total shield** and **disaster** cards from the deck
2. Deal 5 cards to each player
3. Distribute 1 **total shield** card to each player
4. Shuffle the remaining **total shield** and **disaster** cards back into the deck



COLLAPSING -QUBITS-



PLAY ANY CARDS YOU WANT

PRO TIP!
TRY TO SAVE YOUR CARDS UNTIL
YOU NEED THEM!

DRAW A CARD

(UNLESS YOU PLAYED A CARD THAT LETS YOU SKIP!)

DID YOU DRAW A DISASTER?!?



YES

CAN YOU USE A SHIELD?

No

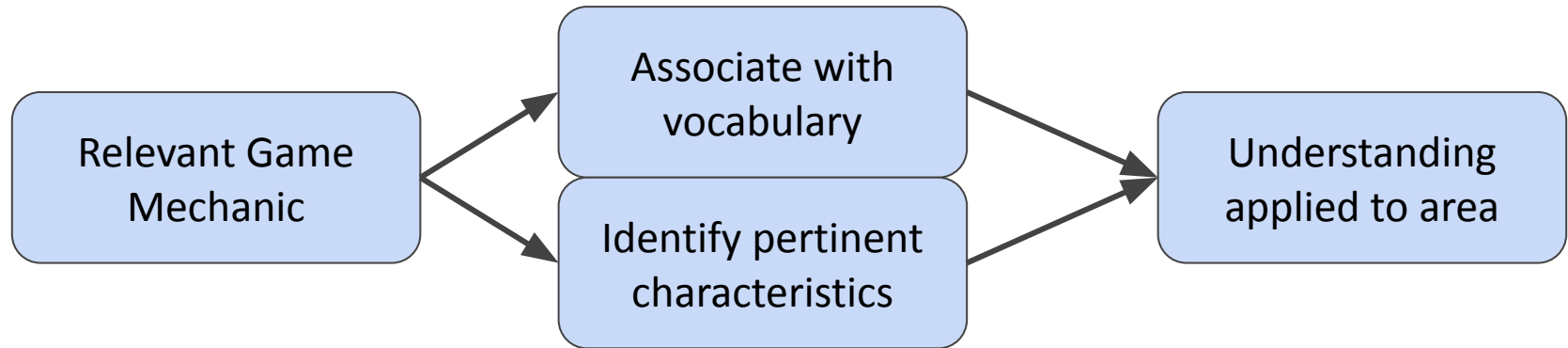
No

YES

YOU LOSE :(

NEXT PLAYER'S TURN.

Activity #3: Analyze CQ



Write down:

- 1) the vocabulary words you remember,
- 2) the associated game mechanics
- 3) a guess as to what might be true about that vocabulary word.

Activity #3: Analyze Collapsing Qubits

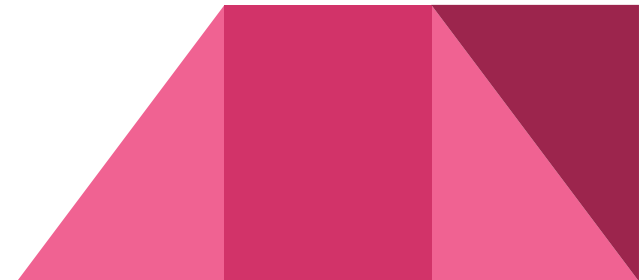
What you remember

Quantum phenomenon - superposition,

Quantum components (qubits) might be susceptible to environmental factors

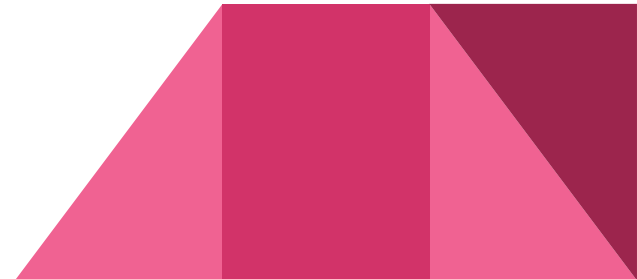
Disasters: Vibration, heat, radiation, magnetism

There are specific technologies designed for different types of disasters



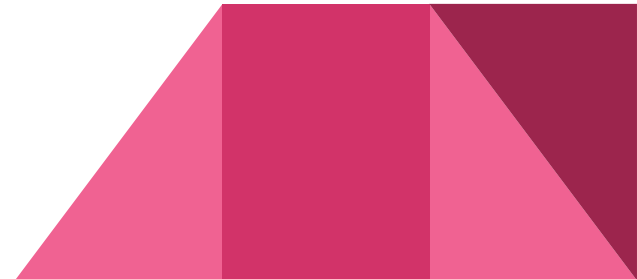
Activity #3: Analyze Collapsing Qubits

What events destroy quantum computing?



Activity #3: Analyze Collapsing Qubits

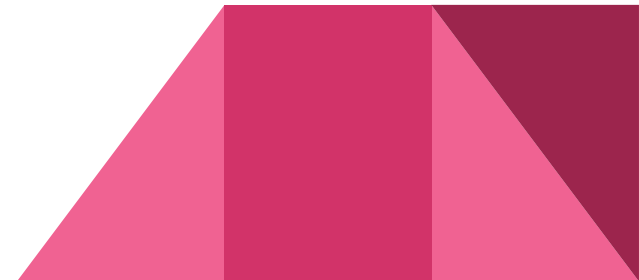
How do you protect quantum computers?



Qupcakery vs. Collapsing Qubits

Qupcakery dresses up quantum circuits

Collapsing Qubits has a variety of vocabulary & intuition, but farther from the true definitions and applications to QIS



Judging your game idea - how much is it a game?

Engaging

Learning



Acceptable Range



How much agency do the players have?

Is the content authentic? - Do they develop desired skills towards premise?

Quander



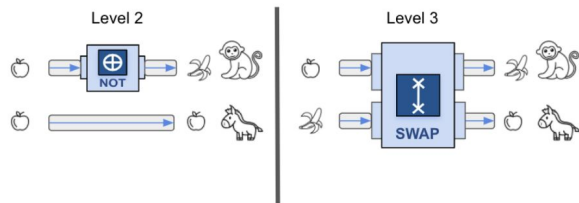
Molly: The main character of the Quander games. In Tangle's Lair she helps Tangle unlock doors by simplifying circuits.



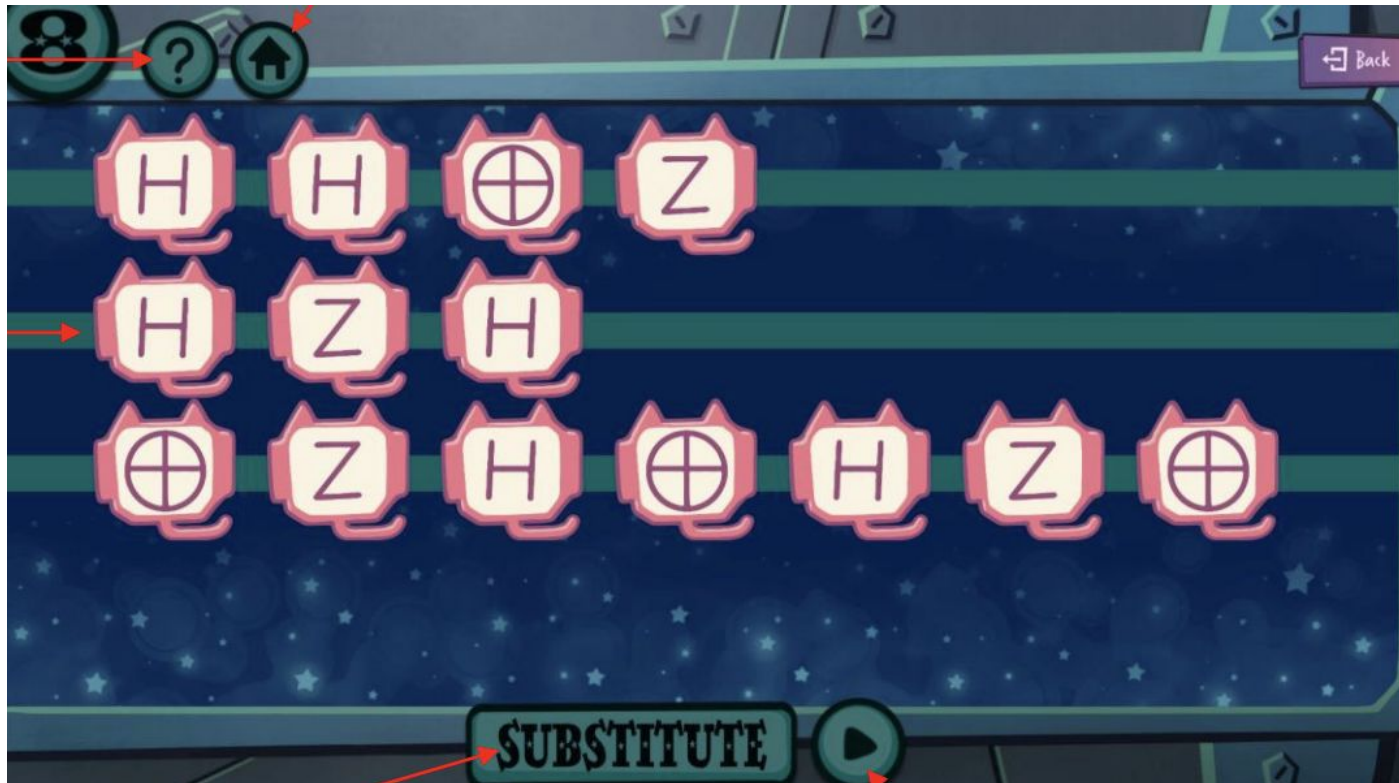
Tangle: Molly's best friend and cat. Caused an explosion while building a quantum computer and locked herself out of her lair.



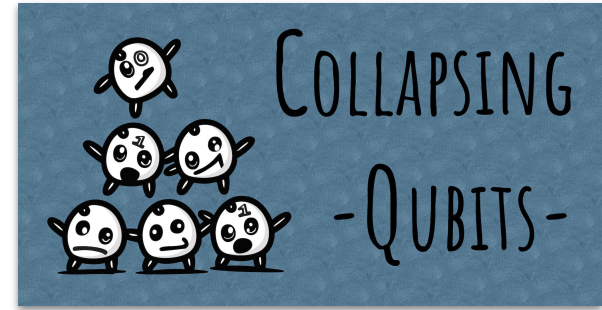
Qupcakery - quantum flavor modifiers to fix absent-minded chef's mistakes



Tangle's Lair - locks guarded by inefficient quantum circuits



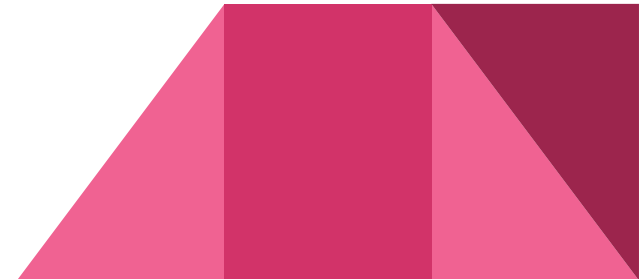
Collapsing Qubits



You are competing for the first quantum program that completes without error

You need to protect about environment effects

Use quantum phenomena to increase your success / thwart others'



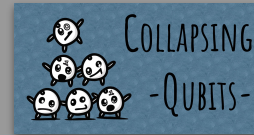
Judging your game idea - how much is it a game?

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Acceptable Range



How much agency do the players have?

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Inauthentic Integration: Prodigy



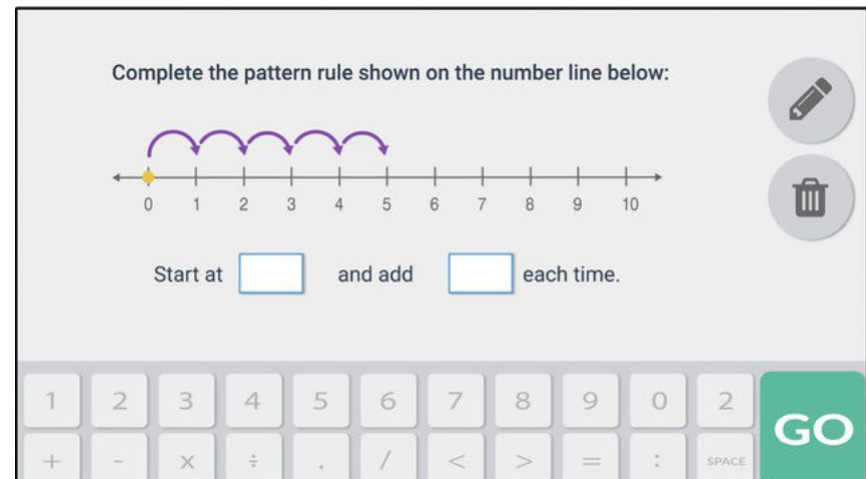
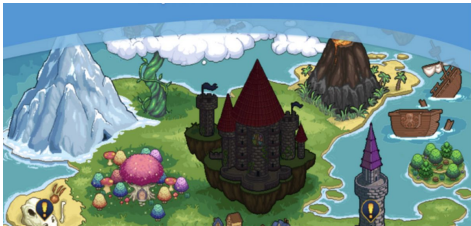
Inauthentic Integration: Prodigy



Inauthentic Integration: Prodigy



Inauthentic Integration: Prodigy



Analysis

Positives

- Bright colors, fun design, good for kids
- They don't need to redesign for different content
- Easily adjust the difficulty

Negatives

- There's no relationship between technical content and game content

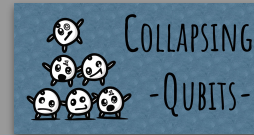
Judging your game idea - how much is it a game?

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