

All Fun and Games Workshop: Interactive Tools that Measure 21st Century Skills

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The Institute pioneers **new models of learning and engagement**. We are a **non-profit design studio**, founded in 2007 by a group of game designers in New York City. We are now home to an interdisciplinary **team of designers, strategists and learning practitioners**.



**Our purpose is to
transform education
through play.**



Rules

Rock, Paper, Scissors Tournament

- 1. Play ONE ROUND of Rock, Paper, Scissors with a person next to you**
- 2. If you WIN, find another person who won and play them.**
- 3. As you win, continue to move toward the front.**



HOW DID **PLAY** **TRANSFORM** **THIS SPACE?**



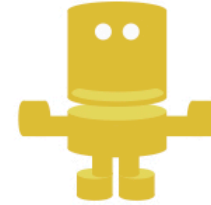
Goals for today

- Experience game-based learning in action
- Explore effectiveness of a learning game
- Participate in a Game Design Challenge

Classrooms must support students in developing 21st Century Skills



Critical Thinking



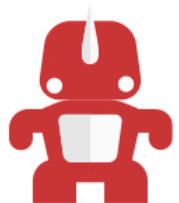
Problem Solving



Empathy



Collaboration



Creativity



Communication





Preliminary results from the **Connecting Youth: Digital Learning Research Project** at NYU indicate that Quest to Learn students demonstrate **significant learning growth** in the following areas:



**critical
thinking**



**analytical
skills**



**problem
solving**



**written
communication**

GAME LIKE LEARNING PRINCIPLES

Everyone is a Participant

Learning Feels Like Play

Everything is Interconnected

Learning Happens By Doing

Failure is Reframed as Iteration

Feedback is Immediate and Ongoing

Challenge is Constant



GAMES AND GAME-LIKE LEARNING: PEDAGOGICAL STRATEGIES

- Analog games (design and modding)
- Digital games (surrounded by analog experiences)
- Game-like activities
- Game-like units of study





Analog
Games

THREE REASONS FOR GAMES

- **INNOVATION AND PROBLEM SOLVING:** Game-based learning can bolster a child's creativity, innovative thinking, and problem solving abilities—all of which are 21st Century skills.
- **CHALLENGE LEVEL:** There are clear connections to game level design and the zone of proximal development, in which problems are ordered in increasing complexity (Vygotsky, 1978).
- **TESTING AND HYPOTHESIZING:** Players test and hypothesize solutions, applying the scientific method in the system of a game (Gee, 2007a; Shute, Ventura, & Ke, 2015).



MINDWARMER

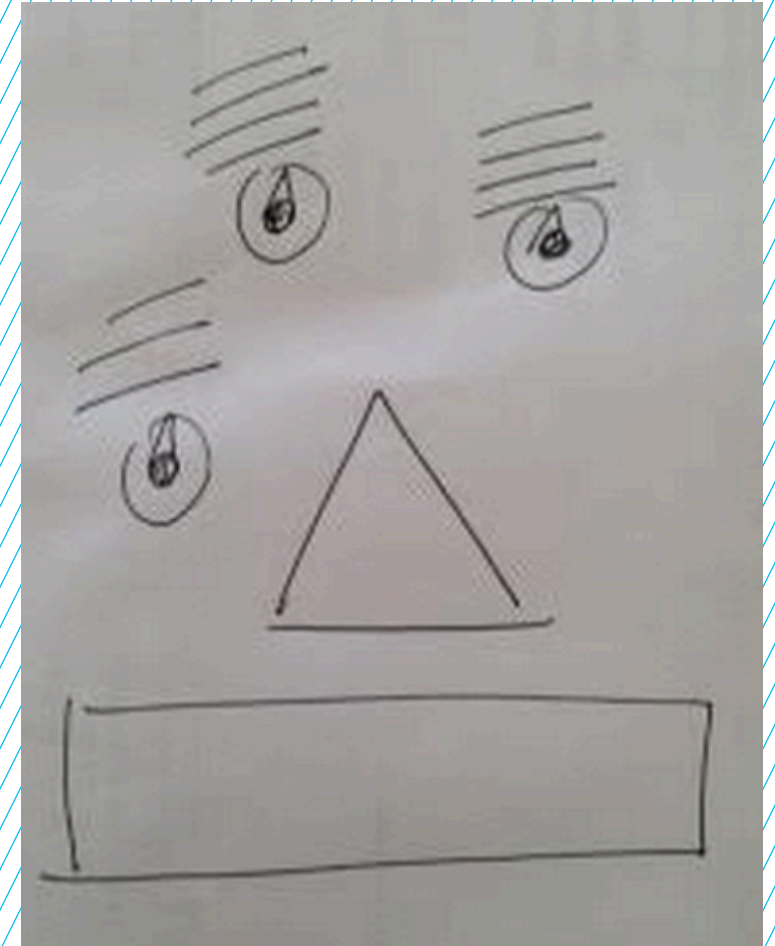
1. Draw a triangle
2. Draw some circles
3. Draw filled-in circles inside
4. Above each, draw an upside - down V
5. Above, draw a bunch of straight lines
6. Draw a rectangle below the triangle



What did you come up with?

Hold up your drawing!

- What do you notice about everyone's drawings?
- What made these instructions ambiguous?
- What might the purpose of this exercise be and what types of conversations could it initiate?

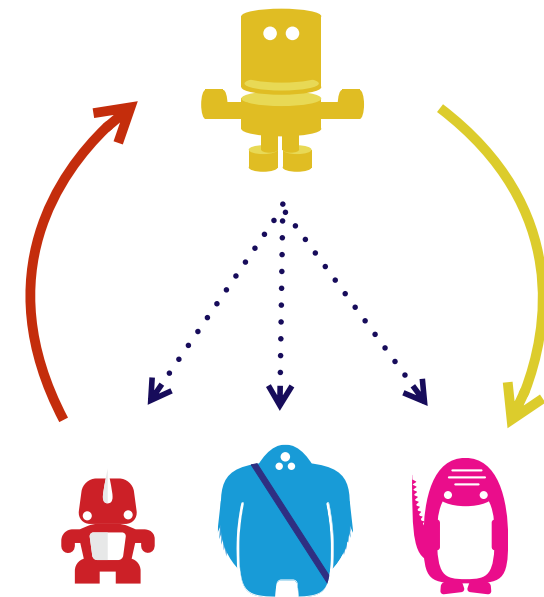


Picture Talk

Rules:

- The describer draws a card. S/he may use **any** words to instruct the copiers how to draw the picture.
- The copiers are not allowed to speak.
- When all copiers are finished, the describer reveals the original drawing and copiers reveal what they drew.

One describer

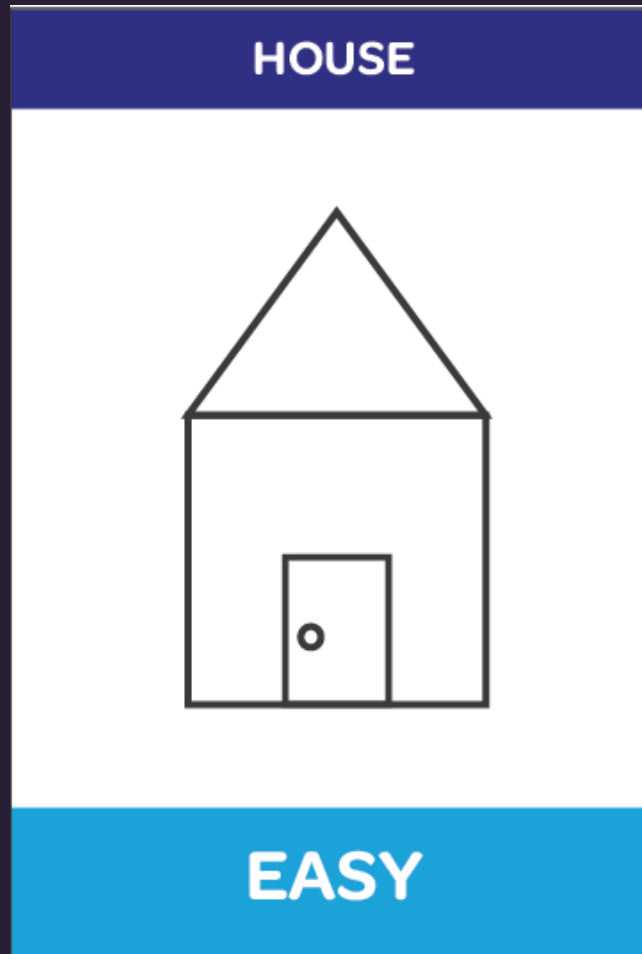


Copiers



PICTURE TALK

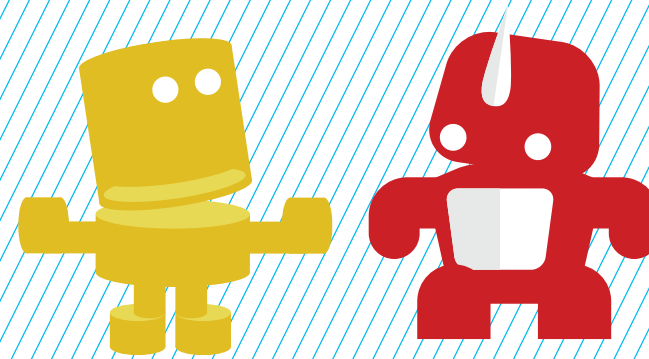
Is this what you got?



Picture Talk Mod

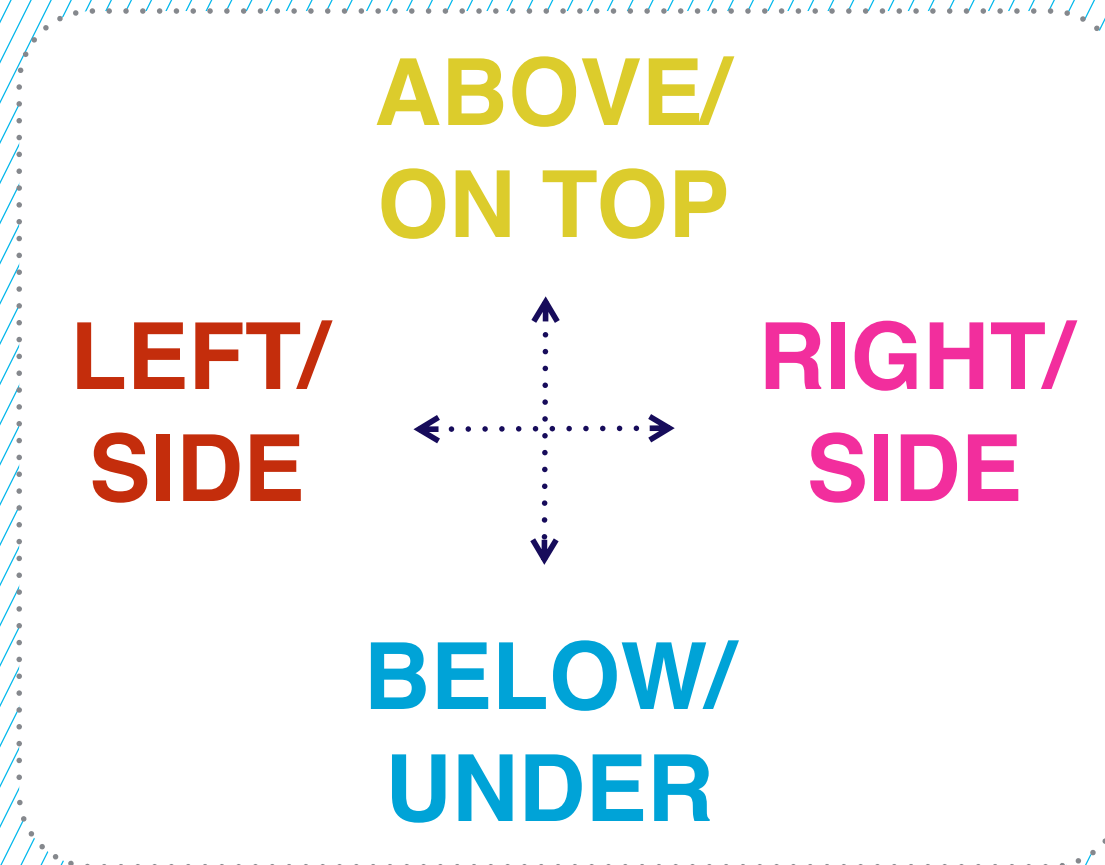
Let's Mod Picture Talk together.

Constraint: Limit what the describer can and cannot say.



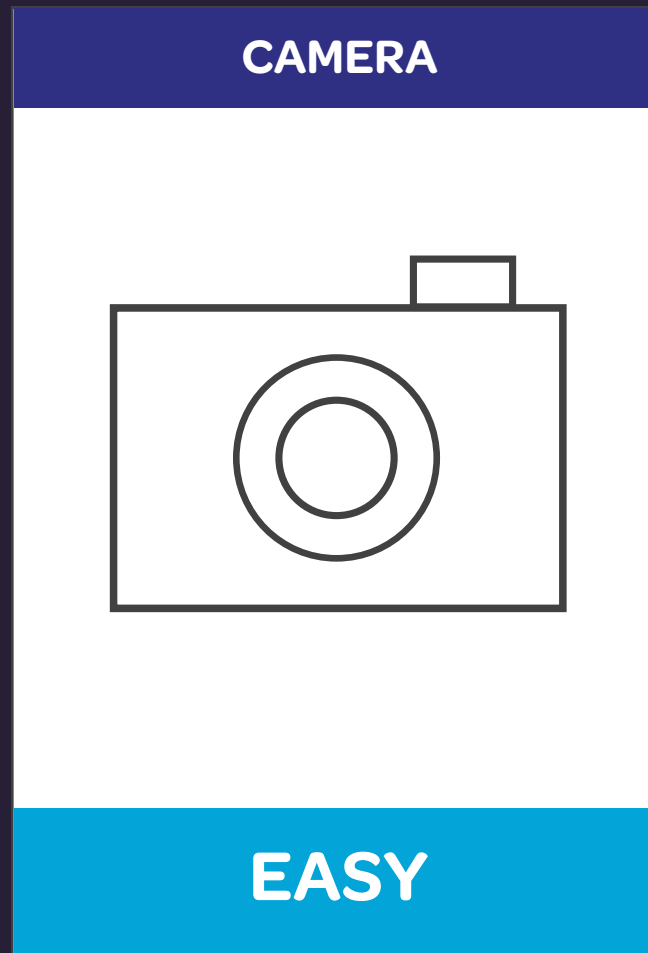
Picture Talk Mod

Same basic rules and goal, but 1 new rule: You **can't** say...

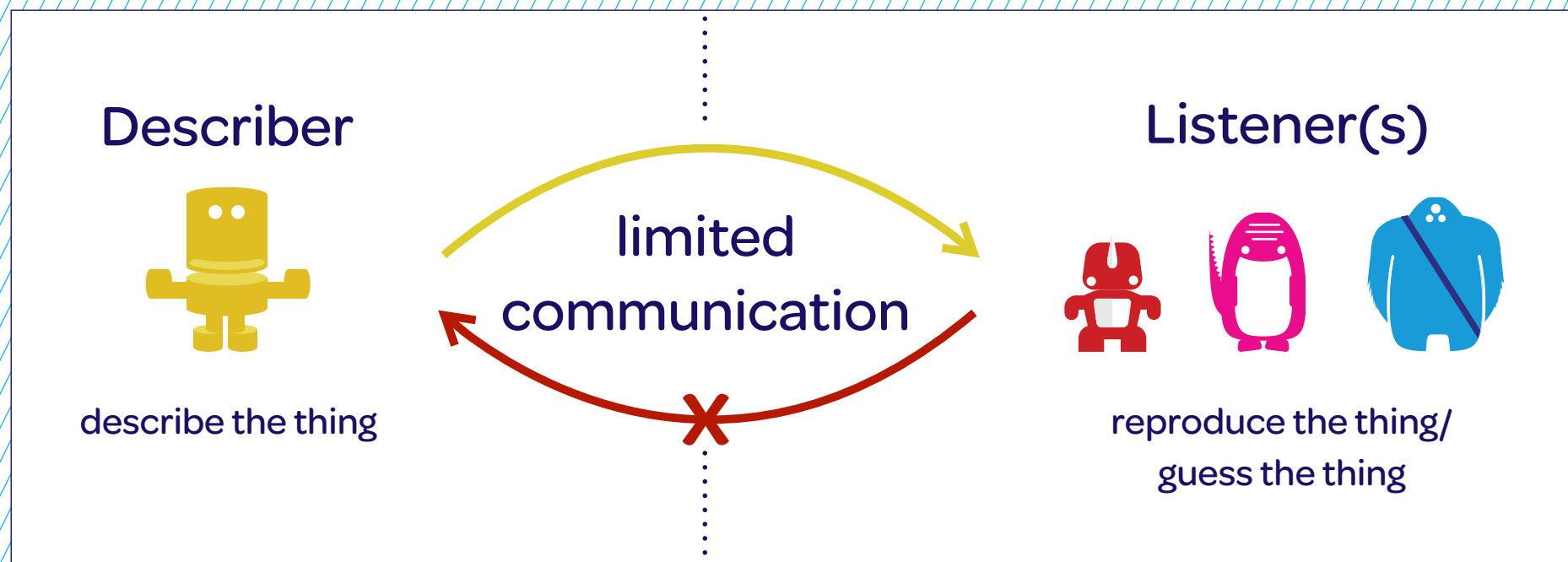


PICTURE TALK

Is this what you got?



“Talk” Structure



Inherent Learning Goals

Communicating clearly (giving clear directions)

Listening (following directions)

Empathy & Collaboration



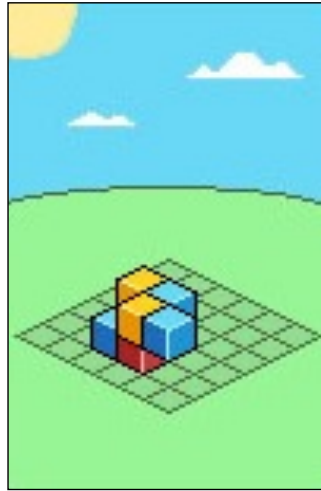
Evaluating Picture Talk

PLAYER ROLE <i>e.g. Pitcher, Catcher</i>	GAME ACTION <i>What do players DO in each role?</i>	LEARNING GOAL <i>Students will be able to...</i> <i>Students will understand...</i>
Describer	<ul style="list-style-type: none">• Giving directions• Analyzing	<ul style="list-style-type: none">• Communicate clearly• Collaboration• Label Geometric shapes
Drawer/ Copier	<ul style="list-style-type: none">• Drawing• Interpreting• Listening	<ul style="list-style-type: none">• Follow directions• Listen



“Talk” Games

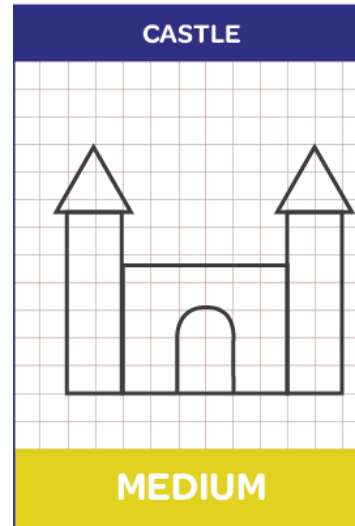
Block Talk



Learning Goals

- PEMDAS
- Communication

Graph Talk



Learning Goals

- X/Y axis
- Length/Width
- Diameter/Radius

Equation Talk

LEVEL 1

$$3 = x + 2$$

LEVEL 2

$$-7x = -49$$

LEVEL 3

$$4n + 2 = 18$$

LEVEL 4

$$n/7 - 2 = 0$$

Learning Goals

- Solving Equations
- Describing how to solve equations



Design Challenge

Game Vocabulary

GOAL

How do you win?

(For example: Cross the finish line, Collect the most marbles, Be the last one standing)

COMPONENTS

What materials are required to play?

(For example: Basketball, Basketball hoop, Marbles, 5 players)

CORE ACTIONS

What actions does the player take to power the game?

(For example: Running, Jumping, Dribbling)

RULES

What can and can't a player do in the game?

(For example: No holding the ball while running, If you score you get another turn)

CHALLENGE

What stands in the player's way of reaching the goal?

(For example: Guarded by an opponent)

SPACE

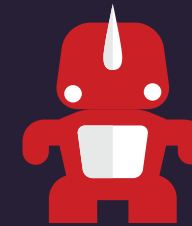
Where does play take place?

(For example: Basketball court, Park, In a circle, Computer screen, Super Mario World)



Design Challenge

Add a new **game action** to Picture Talk to create your own modification (mod). Choose ONE of the below:



1. Trading

2. Collaborating

3. Singing

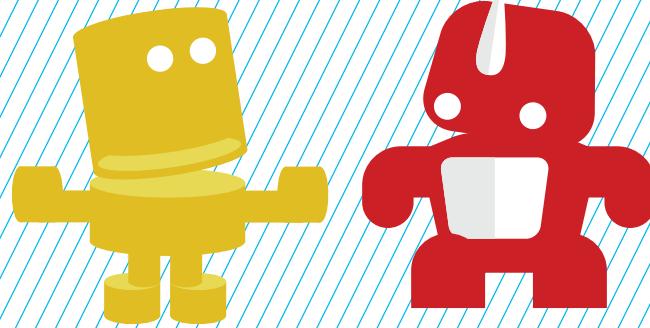
4. Jumping

5. Acting

6. Bluffing

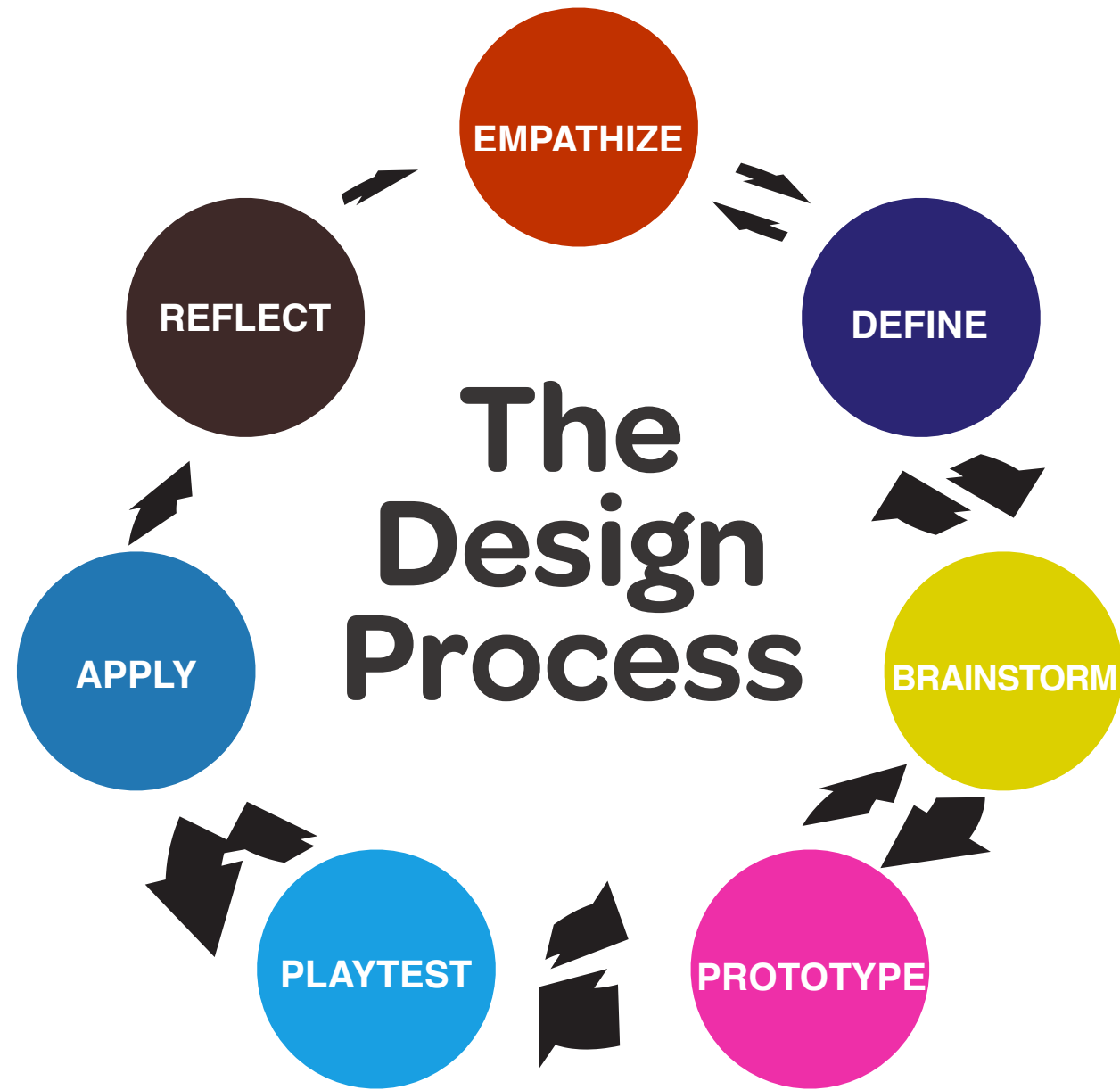
Reflection

- What did you change?
- What did you notice about the process you went through?
- How did your team collaborate?



PLAYTESTING

- How fun was this game? How challenging was it?
- How clear were the rules?
- What did you like least and most?
- What can students learn from playing the game?
- How much choice was there in the game?

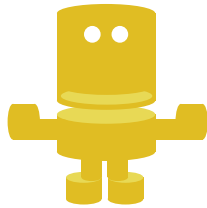


Design Roles



FUN CRITIC

You make sure to constantly monitor fun levels of the game. Don't be afraid to speak up if it's not FUN.



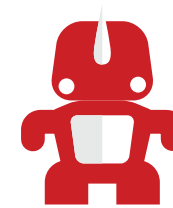
PLAYTEST FACILITATOR

You support the team in planning and implementing game rollout and feedback strategies.



INCLUDER

You make sure every voice is heard.



PLAY PROVOKER

You constantly provoke the group to jump in and test ideas.





Our goal is to re-envision the way teachers are taught and assessed, so that they can transform the world of students.





Re-Imagining Teaching Through Games And Play

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5 Secrets of Effective Game-based Learning



It's about the process, not the product.



Think of the game as more than just the actual moment of play



Find collaborators to help you design, evaluate, and test tools



Evaluate games for learning potential + engagement



Blend digital and non-digital to create rich learning experiences





Thank you.

LEARN MORE

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