



# Design Pack

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## Games and Learning

What if teachers could harness their creativity and knowledge to engage students in new and exciting ways? What if teachers supported each other in becoming designers of their own games for learning?

From the experts in game-like learning at Quest Schools, this design pack will immerse you in learning about Quest's game design tools and exciting collaborative curriculum team model.

**Games drop students into accessible, inquiry-based, complex problem spaces that are leveled to deliver just-in-time learning and that use data to help student players understand how they are doing, what they need to work on, and where they need to go next.**

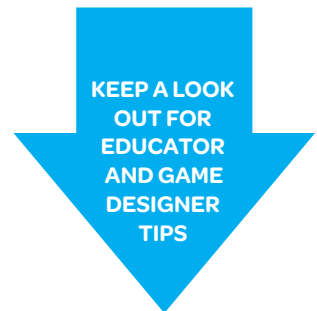


# How to Use This Design Pack

At our Quest schools, we create innovative ways to engage students in learning. We invite you to explore this design pack and experiment with using it within your own particular contexts. This design pack includes the following sections:

- **Setting the Groundwork (p.4)**
- **Intro to Game Design (p.9)**
- **Game Design Toolkit (p.16)**
- **Quest Curriculum Team Model (p.43)**
- **Going Further (p.47)**

If you are an educator, game designer, or professional developer, we suggest you follow the pathway identified for you below.



**EDUCATOR TIP**

**GAME DESIGNER TIP**



**Educator**

This design pack will help you build skills and knowledge about how to work collaboratively to design games for your classroom. Your suggested pathway is:

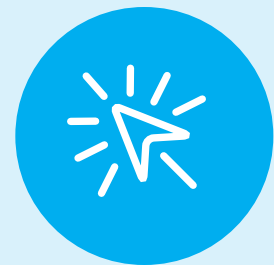
- **Setting the Groundwork**
- **Intro to Game Design**
- **Game Design Toolkit**
- **Quest Curriculum Team Model**
- **Going Further**



**Game Designer**

This design pack will help you build knowledge and skills about working collaboratively with educators to create games aligned to their students' learning needs. Your suggested pathway is:

- **Setting the Groundwork**
- **Quest Curriculum Team Model**
- **Game Design Toolkit**
- **Going Further**



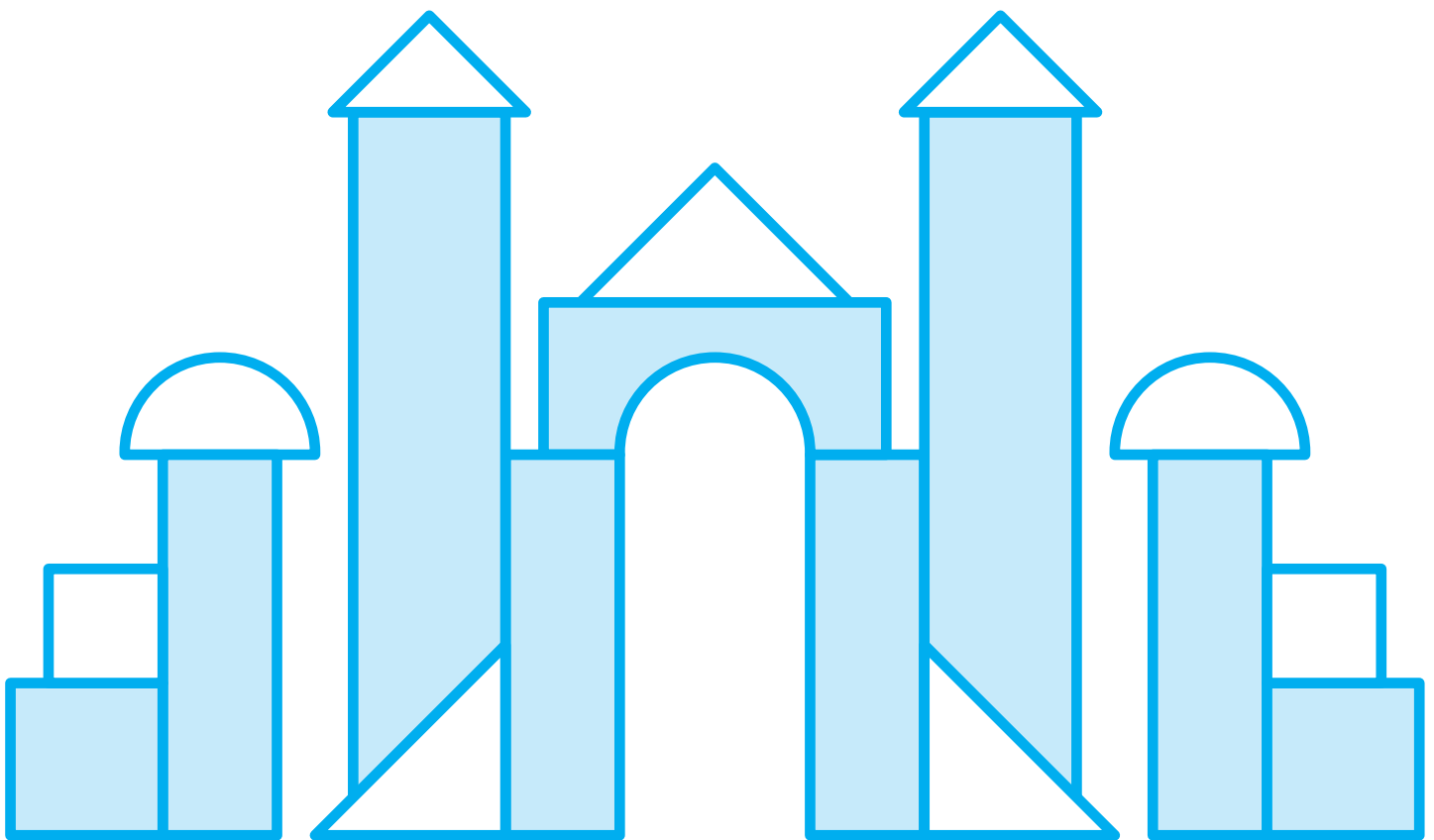
**Professional Developer**

This design pack will help you create contexts in which teachers can collaboratively design games. Your suggested pathway is:

- **Setting the Groundwork**
- **Intro to Game Design**
- **Quest Curriculum Team Model**
- **Game Design Toolkit**
- **Going Further**

# Setting the Groundwork

Understanding why games and game design are valuable to students and teachers is the first step in building your expertise in games and learning.



# Why Use Game Design in Schools?

Youth love playing games for hours on end. Why not bring characteristics of games and their design into classrooms?

*"Games allow you to experience material much more powerfully than just reading or hearing about it."*  
- Quest Game Designer



6th grade students review the order of operations by playing PEMDAS.



Students play Input/Output in 7th grade math classes to learn about functions.

**One unique aspect of Quest schools** is that students often play games to learn. Even more unique is that Quest teachers are part of the game design process.\*

A great game engages people so deeply in play that the real world of time, space, and responsibilities is temporarily lost from the minds of game players. Game designers create these amazing engagement spaces. In education, we know for effective learning to happen, high levels of engagement are essential. It seems natural to try and use the qualities of good game design to increase

engagement in learning. At Quest schools, game design is an integral part of teaching and learning. Quest teachers learn to create games that drop students into accessible, inquiry-based, feedback-rich, complex problem spaces.

Quest teachers have found they can use games in a multitude of ways in their classrooms. For example, they use them as:

- Sneak peeks for future material
- Introductions to new material
- Practice spaces for skill-building
- Review opportunities
- Assessments

## GAME DESIGNER TIPS

- Marry learning goals to the core game experience.
- Choose challenging and interesting learning goals.
- Find ways to integrate play into your classroom any way you can.
- Build relationships with students, teachers, and parents.

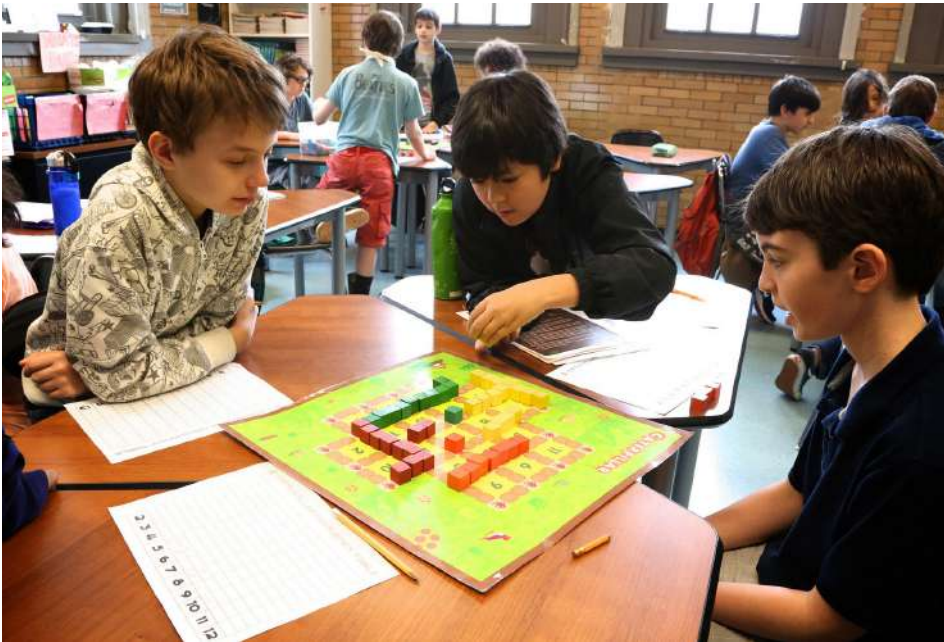
\* Go to the Appendix (p. 49) to get more information about the seven Game-Like Learning Principles that are the foundation for teaching and learning at Quest schools.



# All Teachers Can Become Game Designers

Design thinking + creativity = engaging and effective curricular tools

*"I've never been a writer in a creative space, but I really feel like the closest I've ever gotten to it is working at Quest to Learn."*  
-Quest Teacher



6th grade students play Caterpillar, a math game designed to help students learn about frequency and probability.



Quest students play games in middle school Wellness and History classes.

At Quest schools, we treat every teacher as a designer.\* Teachers design their curricula, classroom environment, routines, and many other aspects of education. We highly value quality design and the creativity that is sparked by it. We work to cultivate teachers' creativity as they design innovative curriculum and learning tools, like games, to engage and support students in learning.

Our schools have adapted the term "design thinking," from the worlds of engineering, technology, and business, for use in the education realm. For us, design thinking is a mindset relating to the process that designers use when

conceiving, planning, and producing an object or system.

Quest teachers become very familiar with design thinking—a highly iterative collaborative methodology—as they create curricula and games within our school model. Our design thinking process consists of five steps: empathize, define, ideate, prototype and playtest. The questions on the right will help guide you through the design thinking process.

Understanding design thinking is the first step in learning how to design learning games for classrooms.

## DESIGN THINKING GUIDING QUESTIONS

**Empathize** Who are my students? What are they doing? Why are they doing it?

**Define** Based on what I understand about my students, what is the design challenge that I face?

**Ideate** What are all the ideas that I have to solve the design challenge?

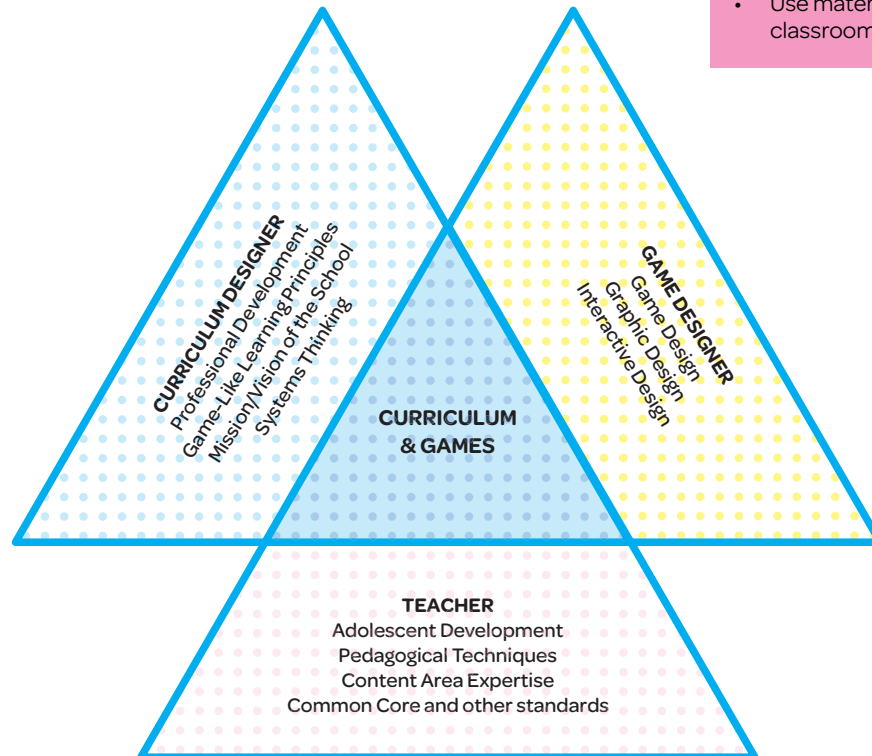
**Prototype** What can I create to test out my ideas with my students?

**Playtest** With what I know about my students now, does my solution really work for them?

\* See Appendix (p.50) for an overview of the model of seven dimensions of teaching that guide the design of professional development and support for our teachers.

# Collaboration and Game Design

Design, and specifically game design, requires a meshing of different expertise.



## GAME DESIGNER TIPS

- Keep teacher's learning goals in mind at all times.
- Keep games simple and elegant.
- Share ownership of design with other collaborators.
- Use materials already in the classroom as parts of games.

*The graphic illustrates what expertise is contributed by each team member.*

**When you think about** teams working together to design and develop curriculum and games, who do you think is on that team? What does each team member bring to table?

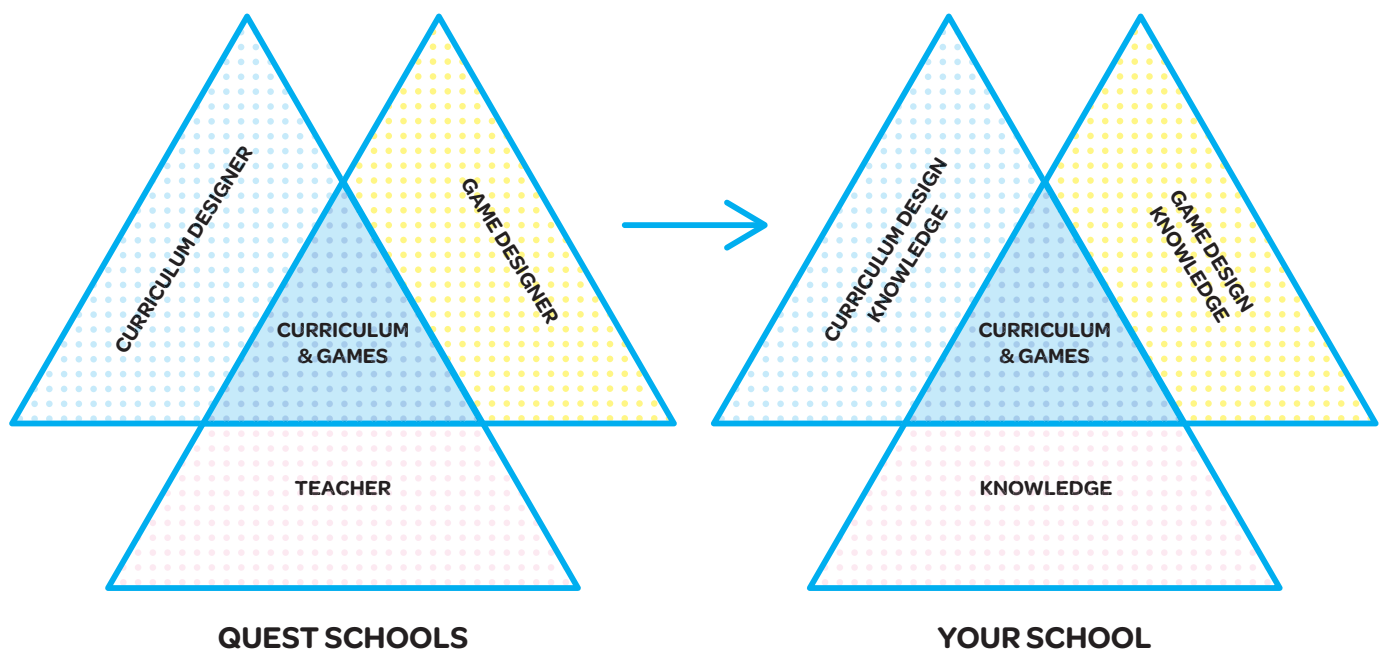
For Quest schools, our collaboration model works to expand the expertise of the team of people around the curriculum planning table. These teams are called curriculum teams and include a **teacher**, **curriculum designer**, and **game designer**. Each member

brings expertise to the team – teachers bring their knowledge of content and teaching practice, curriculum designers bring content and pedagogy knowledge from across disciplines, as well as skills in technology integration, and game designers bring knowledge and skills geared towards designing highly engaging learning spaces. Bringing these three individuals together inspires creativity and innovation that is much more powerful than if these three people worked independently.

Although your school might not have curriculum teams like those in Quest schools, you can build a similar collaborative team with diverse expertise (especially after learning how to design games from this design pack). By collaborating with like-minded educators and using design thinking, teachers can design learning games of their own.

# How to Design Games for Learning Anywhere

With the right tools, teachers can add game design to their repertoire of creative ways to engage their students in learning.



**We believe that** all teachers can create their own learning games. By building a foundation of game design knowledge and combining it with their curriculum design and general teaching knowledge, they will have all they need to design games.

At Quest schools, we know we are very lucky to have game designers embedded in our schools. We also know, from our work with teachers outside of our schools, that groups of like-minded

teachers can create exciting and powerful learning games on their own.

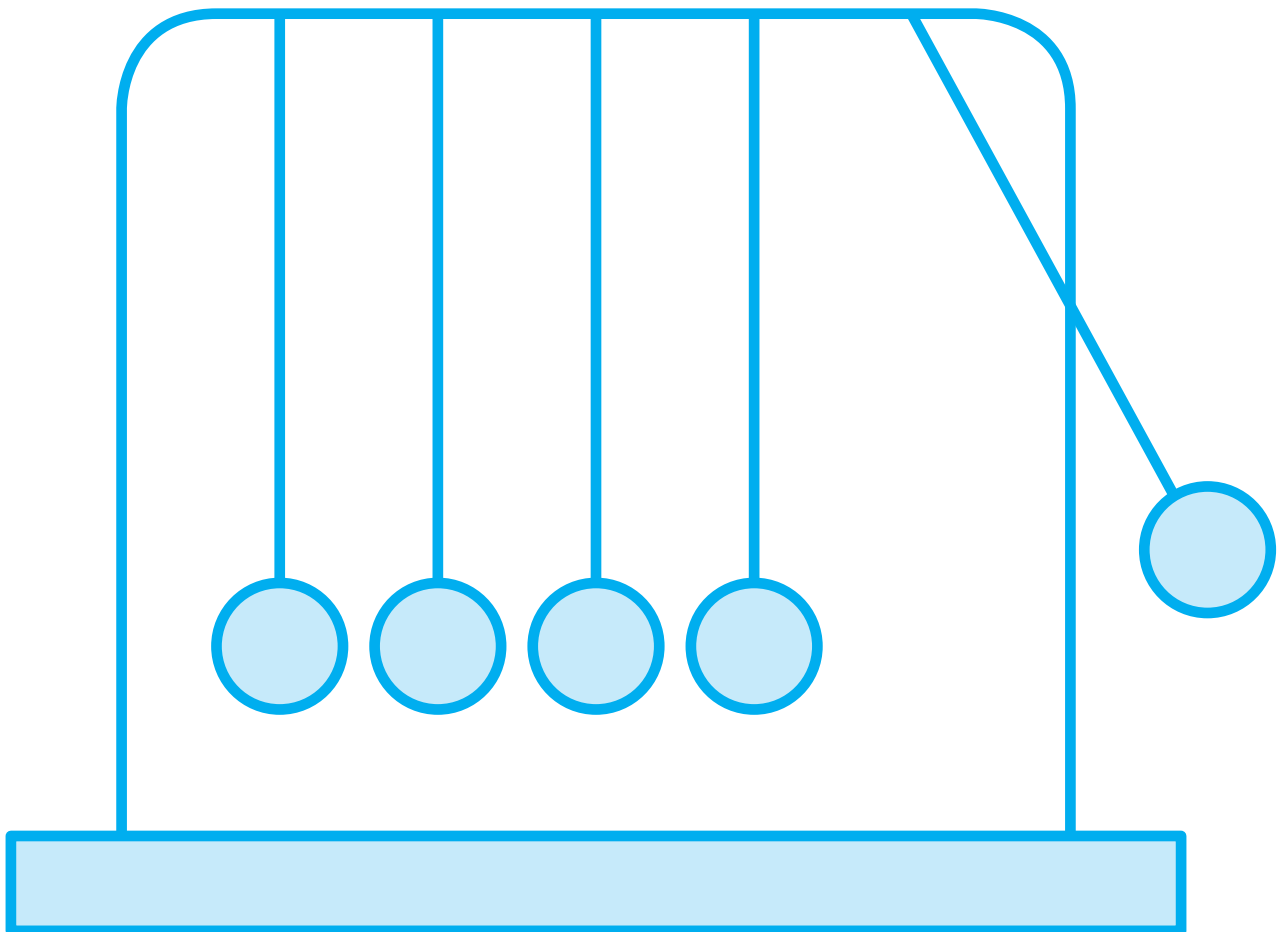
If game design feels overwhelming, first think of games as another learning tool to use to engage students, like science experiments and peer editing sessions. Secondly, if you work with other teachers to design games aligned to specific learning goals, the process will be easier (and more fun).

You can also use games as an assessment tool. Oftentimes students don't realize they are being assessed when they play games, which might give you even more learning data. Lastly, designing effective learning games takes practice, so be ready to learn a lot as you start on this exciting adventure to add game design to your teaching repertoire.



# Intro to Game Design

This section will teach you more about game design and set you up to design your own learning games.








# Quest Designed Games

Many successful games have been designed at Quest schools by collaborative teams of teachers, game designers, and curriculum designers. Each game has gone through extensive

playtesting before being played in classrooms, and continues to be revised and improved after class game play. Below is an introductory list of games from different content areas.

### EDUCATOR TIP

The learning goals of all of our games are aligned with Common Core and state standards.

|  |   |   |  |
|--|---|---|--|
|  <p><b>HUMANITIES</b></p> | <p><b>GAME</b><br/>Rank Your Source</p> <p>Socratic Smackdown</p> | <p><b>CONCEPT(S)</b><br/>Identifying bias</p> <p>Practicing argumentative skills in a discussion format</p> | <p><b>COMMON CORE STANDARDS</b><br/>Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.</p> <p>Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.</p>   |
|  <p><b>MATH</b></p>       | <p><b>GAME</b><br/>Absolute Blast</p> <p>Caterpillar</p>          | <p><b>CONCEPT(S)</b><br/>Absolute value</p> <p>Frequency and probability</p>                                | <p><b>COMMON CORE STANDARDS</b><br/>Understand that positive and negative numbers are used together to describe quantities having opposite directions or values and understand ordering and absolute value of rational numbers.</p> <p>Summarize numerical data sets in relation to their context, such as by giving quantitative measures of center and variability, as well as by describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.</p> |
|  <p><b>SCIENCE</b></p>  | <p><b>GAME</b><br/>Punnett Puppies</p> <p>Rock the Rock Cycle</p> | <p><b>CONCEPT(S)</b><br/>Phenotype and genotype</p> <p>Rock cycle</p>                                       | <p><b>COMMON CORE STANDARDS</b><br/>Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</p> <p>See above.</p>  |
|  <p><b>WELLNESS</b></p> | <p><b>GAME</b><br/>Emotion Motion</p> <p>Chemical Awareness</p>   | <p><b>CONCEPT(S)</b><br/>Empathy and expressing emotion</p> <p>Drug use</p>                                 | <p><b>COMMON CORE STANDARDS</b><br/>Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.</p> <p>Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p>   |
|  <p><b>SPANISH</b></p>  | <p><b>GAME</b><br/>Mi Amigo GPS</p> <p>Las Comidas</p>            | <p><b>CONCEPT(S)</b><br/>Giving directions</p> <p>Food vocabulary and me gusta</p>                          | <p><b>COMMON CORE STANDARDS</b><br/>Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.</p> <p>See above.</p>  |

**All effective classroom games are designed with specific learning goals in mind. Before you can design games focused on specific learning goals, you need to learn about game design. This section will help you build a basic set of game design knowledge and skills.**

**GAME DESIGN IS...**

- An iterative process
- Honed with practice and over time
- Mostly collaborative
- Participatory (players are part of the process)
- Intentional

# What is a Game? What are Parts of a Game?

**“A game is a play activity with rules that involves conflict.”\***

The above definition is over-simplified because you can probably think of a game that doesn't necessarily fit that definition. When you try to define a game, you'll find that it is hard to do. Many types of games are played in all different cultures. The prevalence and love of games throughout the world supports the idea that games are powerful tools to use to support learning.

A better way to examine what is a game might be to look at parts of a game. Throughout time and across cultures, most games have the same six parts – a goal, a challenge, core mechanics, components, rules, and space. The table on the right explains each part in more detail.

Understanding parts of a game opens up the world of game design because with this knowledge, you can change one part of a game to create a new game (called modding) or design your own unique game by taking all six parts of a game into account.

## GAME DESIGNER TIPS

- Remember the difference between components and core mechanics—components are nouns and core mechanics are verbs.
- If...then...or you may...you may not... are good sentence starters for rule making.

\* Schreiber, Ian. <http://gamedesignconcepts.wordpress.com/2009/06/29/level-1-overview-what-is-a-game/>

## PARTS OF A GAME

### Goal

What does a player or team have to do to win?

Cross the finish line first, collect the most marbles, be the last one standing, etc.

### Challenge

What obstacles might you put in the player's way to make reaching the goal fun and interesting?

How is she being kept from reaching a goal? Her leg is tied to a teammate's, the marbles are hidden, getting hit with a ball ends game play.

### Core Mechanics

What core actions or moves does the player do to power the play of the game?

Jumping, wiggling, searching, solving clues, ducking, bobbing, weaving, dodging.

### Components

What parts make up the materials of play?

Bandanas? A grassy field, marbles, red rubber balls and a court?

### Rules

What relationships define what a player can and cannot do in the game?

Players' legs are tied together, they must start on the same line, all marbles must be gathered within 3 minutes, balls can only be thrown outside the line towards the midsection.

### Space

Where does the game take place and how does that space affect the game?

Basketball court? A circle? Classroom? The park?

## SAMPLE COMPONENTS

|         |         |        |         |
|---------|---------|--------|---------|
| Dice    | Top hat | Stick  | Key     |
| Spinner | Car     | Net    | Chair   |
| Ball    | Cloud   | Tile   | Barrel  |
| Rope    | Coin    | Stone  | Music   |
| Base    | Ghost   | Wicket | Referee |
| Hurdle  | Bat     | Mallet | Horse   |

## CORE MECHANICS

|       |         |        |        |
|-------|---------|--------|--------|
| Cue   | Balance | Shimmy | Swing  |
| Climb | Stretch | Kneel  | Roll   |
| Lift  | Spin    | Push   | Swivel |
| Crawl | Lunge   | Pull   | Relax  |
| Leap  | Bend    | Crunch | March  |
| Bound | Shake   | Rotate | Pump   |

# What are the Game Parts of Your Favorite Game?

Before designing a game, it is important to practice identifying parts of familiar games. In the example below, the parts of Rock, Paper, Scissors are identified. After you read the example, pick a game and try to break it down into its six parts.

| ROCK, PAPER, SCISSORS   | NAME OF YOUR FAVORITE GAME:  |
|---|------------------------------|
| <p><b>Goal</b><br/>To “throw” the winning shape: rock, paper, or scissors.</p>  | <p><b>Goal</b></p>           |
| <p><b>Challenge</b><br/>To anticipate which shape your competitor will throw—rock, paper, or scissors—so that you can throw the shape that beats it.</p>  | <p><b>Challenge</b></p>      |
| <p><b>Core Mechanics</b><br/>Players “throw” an object, meaning they make the shape of an object with their hand and extend their arm to “throw” it.</p>  | <p><b>Core Mechanics</b></p> |
| <p><b>Components</b><br/>Three shapes: rock, paper, and scissors; one hand from each player</p>   | <p><b>Components</b></p>     |
| <p><b>Rules</b><br/>-Each person throws a shape with one hand.<br/>-Rock (a fist) beats scissors (a V-shape made with index and second finger extended), scissors beats paper (flat hand), paper beats rock.<br/>-Whoever wins gets a point. If it is a tie, each person throws a shape again. Winner is the person who wins two out of three rounds.</p> | <p><b>Rules</b></p>          |
| <p><b>Space</b><br/>The space is anywhere enough space exists for two people to stand facing each other and extend one arm.</p>   | <p><b>Space</b></p>          |



# Become a Game Designer: Mod a Game

One entry point to learning how to design a game is to mod a game—change one part—to create a new game. Below is an example of a mod of Rock, Paper, Scissors. After reading the example, try to mod a game that you love.

## EDUCATOR TIPS

- Change only one or two things in a game when you mod it.
- Modding a game you know is a great way to start designing your own games.

## ROCK, PAPER, SCISSORS MOD

### Goal

To “throw” the winning shape: rock, paper, or scissors.

### Challenge

To anticipate which shape your competitor will throw—rock, paper, or scissors—so that you can throw the shape that beats it.

### Core Mechanics

Players “throw” an object, meaning they make the shape of an object with their hand and extend their arm to “throw” it.

### Components

Three shapes: rock, paper, and scissors. **Two hands** from each player.

### Rules

**Each person throws a shape with each of her hands.** Rock (a fist) beats scissors (a V-shape made with index and second finger). Scissors beats paper (flat hand). Paper beats rock. You have two chances to win by using two hands.

### Space

The space is anywhere enough space exists for two people to stand facing each other and extend one arm.

## NAME OF YOUR GAME:

### Goal

### Challenge

### Core Mechanics

### Components

### Rules

### Space

MOD

## PLAYTEST

Remember to always find players to playtest your modded game so you can determine whether your game “works.” Some questions to ask during a playtest are:

- What was your favorite thing about the game?
- What would you change about the game?
- What would you add or take out?

# Become a Game Designer: Design a Game

Now you are ready to design a game! Use the Simple Game Design Steps on the left to guide you as you create your game. To practice more game design, visit our Gamekit website ([beta.gamek.it](https://beta.gamek.it)) to get additional game design challenges.

## Simple Game Design Steps

### STEP 1

#### Gather 3 different types of materials.

Use any everyday items like coins, rubber bands, paper cups, paper clips  
[Ex. 4 coins, 2 rubber bands, 9 paper cups]

### STEP 2

#### Explore core mechanics.

Play with each object to get a sense of how you might use it in a game.  
[Ex. Rubber bands can stretch, coins can flip, cups can stack]

### STEP 3

#### Pick one core mechanic.

Build your game around this core mechanic.  
[Ex. Shoot rubber bands.]

### STEP 4

#### Pick a goal.

Give your players something to strive for with a win condition.  
[Ex. Shoot rubber bands into cups.]

### STEP 5

#### Create rules.

Use materials and rules to structure your game. [Ex. Need to figure out who goes first? Flip a coin.]

### STEP 6

#### Playtest your game.

Find a friend and play the game.

### EDUCATOR TIPS

- Keep your games simple.
- Playtest early, playtest often.
- Use yourself, students, game designers, teachers, or other people as playtesters.
- Make it fun.

## NAME OF YOUR GAME:

### Goal

### Challenge

### Core Mechanics

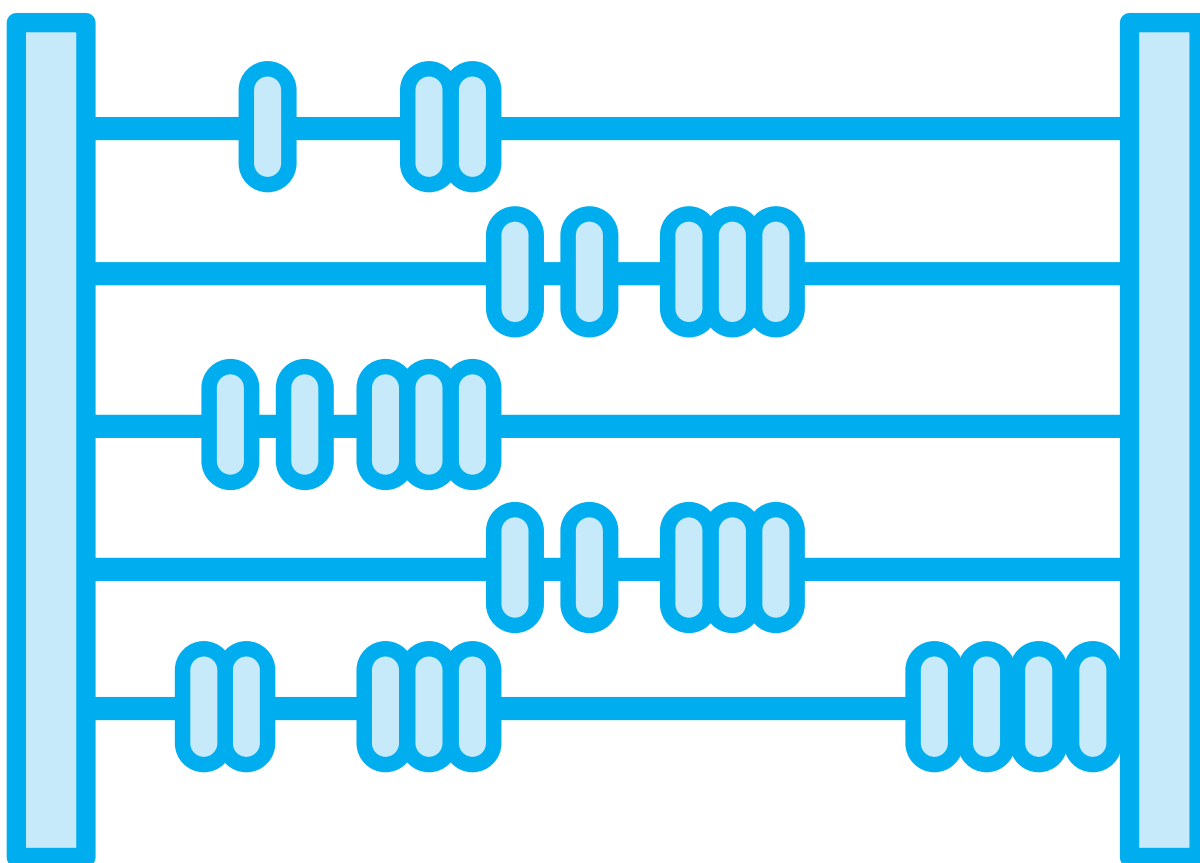
### Components

### Rules

### Space

# Game Design Toolkit

Use the following tools and guides with your game design knowledge and skills to help you design games focused on specific learning goals.



# Game Design in Action!

Quest students excitedly engage in learning difficult concepts when they play games.

*“Playing games in school is helping me learn better than in any other schools I’ve been to in my entire life.”*  
- Quest Student



A student anxiously waits for a fellow student to show him a Metric Mystery card.



After the Metric Mystery cards are dealt, a student marks down the cards she holds in her hand on her Top Secret sheet.

A student quickly shuffles through his cards to find the blue card with 1/1000 on it. He discretely shows it to his fellow student and she marks something down on a sheet of paper titled Top Secret. “My turn!” exclaims another student in the group as she rolls the die.

Who would have thought that 11- and 12-year-olds would be so excited about the metric system in their integrated science and math class? That is the power of creating engaging learning

environments with games. A science/math teacher, curriculum designer, and game designer collaborated to create this board game, Metric Mystery, to help students learn how to recognize and use different units of the metric system.

The spark for this game began with a teacher’s request for a game to help his students learn about the metric system – a challenging concept for 6th graders. With the learning goals in mind of helping students to be able to

identify different metric system prefixes and suffixes, and be able to convert units within the metric system, a game designer began to brainstorm game ideas. Since a metric unit (10 mL) can be broken into different pieces with its prefix (milli-), suffix (-liter), and quantity of a unit (10), and recombined in a myriad of ways, the game designer immediately thought about modding the well-known game Clue.

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Clue involves combining 3 different things—a murderer, a room, and a weapon—in a multitude of ways. So, the game designer took the game mechanics of Clue and created Metric Mystery.

After running a playtest with a smaller group of students to collect their feedback and make appropriate changes to the game, the day finally arrives to roll out the game with a whole class of students. When students finish their mindwarmer about different prefixes in the metric system, they all sit on the floor around the game board. The teacher explains the rules and models how to play with two other students.

The energy in the room rises and rises as students are more and more excited to play the game. As soon as students start playing, prefixes and suffixes like “milli,” “liter,” “grams,” and “kilo” fly back and forth across the classroom and continue to be talked about as students leave the classroom after the bell rings.

How can you design a game like Metric Mystery? This section of the design pack is filled with tools for you to use to help you design your own learning games. For each tool, we provide an example of how we used the tool in designing Metric Mystery.



Top: Metric Mystery game board  
Bottom: Student holds prototypes of game cards during a playtest of Metric Mystery.

**GAME DESIGNER TIPS**

- The process for designing classroom games with teachers is quick—about a 4-6 week turnaround.
- Know that your game might not engage all students when played for the first time.
- Learn about teaching from teachers and classroom observations.
- Be flexible with your ideas.





# Game Design Process

At Quest schools, our game design process has four phases and each phase requires a varying amount of worktime.

## EDUCATOR TIPS

- Find a like-minded colleague to be a collaborator.
- Get comfortable with game design being a trial and error process.
- Set a reasonable goal of designing one game per school year.

### PHASE 1: WORK TIME REQUIRED IS 2-4 HOURS



#### SPARK

Explore different subject matter with educators as possible game topics.



#### DEFINE

After specific subject matter is chosen, state specific learning goals for the game.



#### IDEATE

Brainstorm game ideas with a particular student population in mind (e.g. 6th grade) that are aligned with associated learning goals and metrics to assess learning.

### PHASE 2: WORK TIME REQUIRED IS 2-3 WEEKS



#### PROTOTYPE

Design and develop one or more paper prototypes of your game.

### PHASE 3: WORK TIME REQUIRED IS 2-3 WEEKS



#### PLAYTEST & ITERATE

Play your game prototype with small group of students to gather feedback. Refine your game based on student feedback.

### PHASE 4: WORK TIME REQUIRED IS 1-5 HOURS



#### ROLLOUT

Play your game with an entire class of students and gather observations of student play, responses, interactions, learning, etc.

## Game Design Process Organizer - Metric Mystery

We use the Game Design Process Organizer to help us keep track of the game design process. This is the first tool in our toolkit and it uses the example of Metric Mystery, a science and math game designed for Quest 6th graders to learn about the metric

system, to model how we use this tool. The rest of the tools in the toolkit also use Metric Mystery as an example. Following each example is a template (with a blue border) for you to use in your own game design process.

### EDUCATOR TIPS

- You can use this tool as a game development management tool to help you track progress throughout the game design process.
- Remember that a template for each tool follows the example for your use.

### PHASE 1



#### SPARK

During a curriculum team meeting with one of Quest's 6th grade science teachers, the teacher mentions that students consistently struggle with understanding and learning how to use the metric system. This statement sparks the development of a game...



#### DEFINE

The teacher shares the learning goals of the game:

- Students will develop an understanding of the modular nature of the metric system (i.e. combining metric prefix with metric suffix and a quantity);
- Students will develop greater ease and level of comfort with using metric system terms; and
- Students will develop skills of deduction.



#### IDEATE

We (the curriculum team) use the Game Idea Generator (p. 23) during the ideation stage of the game design process.

### PHASE 2



#### PROTOTYPE

We decide to prototype a game mod of Clue.

### PHASE 3



#### PLAYTEST & ITERATE

After a playtest, the game designer makes some adjustments to the game board and creates some supports for students to use to help them build deductive reasoning skills.

### PHASE 3



#### ROLLOUT

The rollout requires some time to be spent on helping students understand the rules. Since it takes a longer time for students to understand the rules, the teacher ends up playing the game during two class periods.

# Game Design Organizer Template

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**SPARK**



**DEFINE**



**IDEATE**



**PROTOTYPE**



**PLAYTEST &  
ITERATE**



**ROLLOUT**

# You are entering Phase 1

**APPROXIMATE WORK TIME REQUIRED: 2-4 HOURS**

## Game Idea Generator - Metric Mystery

We use the Game Idea Generator tool to help us brainstorm game ideas and keep learning goals in mind. The tool also keeps us thinking about how we will assess our students during and after game play

and how the assessments are aligned with learning goals. The example below shows how we used this tool with Metric Mystery.

### GAME DESIGNER TIPS

- Remember to make sure game ideas align to learning goals.
- Keep game ideas simple and avoid high levels of complexity.

### POTENTIAL LEARNING GOALS

1. Students will develop an understanding of the modular nature of the metric system (i.e. combining metric prefix with metric suffix and a quantity).
2. Students will develop greater ease and level of comfort with using metric system terms.
3. Students will use skills of deduction.

### GAME IDEAS (BASED ON LEARNING GOALS)

NOTE: the metric system is modular

- You can combine different prefixes, suffixes and quantities which mean different things—might inform core mechanic of a game.
- Mod Go Fish! and students combine metric terms as groupings.
- Mod Clue—hide three cards connected to metric system and have students guess what the cards are.
- One student chooses a prefix, suffix and quantity and other student can ask 10 questions to guess it (with the type of question having some constraints).

### HOW TO ASSESS

- Some sort of tracking worksheet that students use to track guesses and have space to write notes.
- Teacher tool to tally student use of metric terms during game.
- Students write scenarios based on the game with questions to give to each other as a check for understanding.
- Quiz on metric terms after game play.
- Teacher set of questions to ask each table of players to check understanding of metric system parts during game play.



# Game Idea Generator Template

POTENTIAL LEARNING GOALS

GAME IDEAS (BASED ON LEARNING GOALS)

HOW TO ASSESS

**GAME IDEA GENERATOR TIP**

Make sure that assessments align with the learning goals.

# You are entering Phase 2

**APPROXIMATE WORK TIME REQUIRED: 2-3 WEEKS**

## Parts of a Game - Metric Mystery

We use this tool to guide us in building a prototype of the game. The rules section is especially important because clearly written rules are essential for smooth game play in the classroom.

### NAME OF GAME: METRIC MYSTERY

#### Goal

Correctly identify three missing cards (prefix, suffix, and quantity).

#### Challenge

The three cards are hidden and you must use deductive reasoning to figure out their identities.

#### Core Mechanics

Eliminating, deducing, guessing, positioning (players choosing where to move on the board).

#### Components

Die, player pieces, 3 different sets of cards (prefix, suffix, quantity), Top Secret sheets, envelope, board.

#### Rules

1. Put the 3 hidden cards (1 suffix card, 1 prefix card, 1 quantity card) in the envelope.
2. Deal out all the cards to 2-4 players. Players should keep their cards hidden. Mark any cards that you have on your Top Secret sheet.
3. One player rolls the die and moves the number of squares shown on the die (in any direction).
4. When player lands on a square, he/she asks another player to show a card with a prefix, suffix or quantity shown on the square. If the asked player has none, the player can ask the next player to show a card.
5. Mark any card shown on your Top Secret sheet.
6. When you have eliminated enough suffix, prefix, and quantity cards, make a guess about the hidden cards. Look in the envelope. If you are right, you win. If you are not, you are eliminated from game play.

#### Space

6 x 6 square game board

# Parts of a Game Template

**NAME OF GAME:**

**Goal**

**Challenge**

**Core Mechanics**

**Components**

**Rules**

**Space**

# You are entering Phase 3

**APPROXIMATE WORK TIME REQUIRED: 2-3 WEEKS**

# Playtest Guide

This guide will help you plan how you will gather helpful and key feedback from students before you roll out a game with an entire class of students.

## CHOOSING PLAYTESTERS

1. Identify the number of students needed for the playtest.
2. Choose playtesters from different academic achievement levels. (You want to be sure the game is differentiated for all learners.)
3. Remember: being a playtester is a reward for hard-working students.

## WHERE AND WHEN

1. Choose a location and time for the playtest (prep or lunch periods are good options, as well as before or after school).
2. If the playtest is during your prep period, ask grade-level teachers to excuse selected students for the playtest.

## THE PLAYTEST

1. Welcome playtesters.
2. Tell the playtesters what you need from them (feedback about the game, its learning goals, the fun level, etc.)
3. Explain the rules.
4. Play.

## REFLECTION

1. Give students time to fill out a Playtest Reflection Form.
2. Ask the students to share their feedback using their Playtest Reflection Form as a guide.
3. Thank the students.
4. Note names of playtesters so you can choose different students for the next one.

## OTHER ROLES FOR PLAYTESTERS

1. Ask playtesters to help with whole class rollout of the game.
2. Have students video the game rollout.

# Playtest Reflection - Metric Mystery

We use this form to collect playtest feedback from students (note: you can also use this form for other playtesters, like teachers) to help us improve a game before we roll it out with an entire class of students. Know that students


are often concise in their answers so having them discuss their answers after they fill out the form will help you get more feedback than what is written on the form.


|                            |                     |
|----------------------------|---------------------|
| <b>Game</b> Metric Mystery | <b>Date</b> 4/30/12 |
| <b>Name</b> Jose Doe       | <b>Grade</b> 6      |


  


**Fun**


How fun was the game?  
*(Please circle a face)*

  
SO fun!

  
Fun!

  
I'm not sure

  
Not so fun


  
Epic fail

**Difficulty Level**

How difficult was the game?  
*(Please circle one)*

*Too easy*


  
Nicely challenging


*Too challenging*

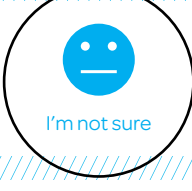
  


**Clarity of Rules**


How clear were the rules?  
*(Please circle a face)*

  
Perfectly clear!

  
A little clear

  
I'm not sure

  
Not so clear

  
Not clear at all

**What can your classmates learn from playing this game?**  
They can learn about how to use things like milli- or -liters.

**What would you change about the game? What would you add or take out?**  
Add more cards. There are not enough for all players to have the same amount.

**What was your favorite thing about the game?**  
Making guesses and the Top Secret form.

**What was your least favorite thing about the game?**  
Not having more cards.



# Playtest Reflection Template



**Game**

**Date**

**Name**

**Grade**

**Fun**

How fun was the game?  
*(Please circle a face)*



SO fun!



Fun!



I'm not sure



Not so fun



Epic fail

**Difficulty Level**

How difficult was the game?  
*(Please circle one)*

Too easy

Nicely challenging

Too challenging

**Clarity of Rules**

How clear were the rules?  
*(Please circle a face)*



Perfectly clear!



A little clear



I'm not sure



Not so clear



Not clear at all

**What can your classmates learn from playing this game?**

**What would you change about the game? What would you add or take out?**

**What was your favorite thing about the game?**

**What was your least favorite thing about the game?**

# You are entering Phase 4

**APPROXIMATE WORK TIME REQUIRED: 1-5 HOURS**

# Game Roll Out Planning Guide

We use this guide to remind us of what needs to be done before, during, and after game-play. If you want a more detailed planning guide, use the checklist on p. 34.



## PREP

What needs to happen before the game is played?



## RULES

What expectations and game rules need to be shared with students before game play?



## MODELING

How will you show students how to play the game?



## PLAY

How is game play structured?  
How will you know your students are learning?



## REFLECTION

How will your students reflect on the game and what they learned?

# Game Roll Out Checklist

After rolling out many games, we made this checklist to make sure we didn't forget any important steps. Feel free to use this checklist during the roll out of your games.

## EDUCATOR TIP

After you have experience rolling out games in your classroom, you might create a game roll out checklist designed for your own classroom and students.

## PREP

- Decide on game facilitators in advance.
- Decide who takes leadership on each phase of roll out.
- Get materials ready & organized.
  - Print rules.
  - Keep game materials stored until game play to keep students from being distracted.
- Materials should be easily accessible to players when the time comes to use them.

## RULES

- Set expectations for behavior, especially during setup. Playing the game is a privilege.
- Hand out a printed version of the game rules.
- Introduce the various components of the game (playing pieces, cards, etc).
- Explain the goal or object of the game. Seek out opportunities to link the game to the learning goals whenever possible.
- Explain how to achieve the goal.
- Explain other rules and obstacles.
- Have a brief questioning period, but remind students the rules will make more sense after seeing the game in action.

## MODELING

- Facilitator leads the class through an example game, possibly participating as a player.
- Optionally, choose students to participate in the model game (good incentive).
- Explain your actions while playing the game. Encourage the students modeling to do so as well.
- Continue to model the game until all major features have been demonstrated.

## PLAY

Depending on time constraints, this phase can take place on the same day or another day after Rules and Modeling steps. More complicated games might benefit from having Play on a different day to allow for a longer time spent Modeling. Play on a different day also allows for the classroom to be reorganized to facilitate game play.

- Facilitator structures and controls various activities and/or rounds, if necessary.
- Facilitator circulates around the room to clarify rules and answer questions.
- Facilitator observes groups of students and asks them questions to check for understanding.
- If multiple rounds of the game can be played, consider allowing the winners of previous rounds to face off against each other.

## REFLECTION AND BEYOND

- Have the students fill out the post-game reflection, either in class or as homework.
- If time allows, have students share out their experiences, strategies, and feedback on the game.
- Consider future play-sessions to allow students to experiment with strategy and deepen their understanding of the content.
- Consider a project where students create their own versions of the game with modded rules or components.
- Be sure to do a reflection on the game yourself.

# Game Play Reflection - Metric Mystery

The goal of this form is to gather feedback about whether the learning goals of the game were met and whether the game was user-friendly and appropriate levels of fun and challenge for students. Oftentimes, this form

includes questions referencing game play to assess student learning. The example below shows the reflection form from Metric Mystery.

## EDUCATOR TIPS

- This form can be used as an assessment.
- Use this reflection form as a data source for game effectiveness.
- Use the space at the bottom of the template (p.36) for your own questions about content and game play.

**Game:** Metric Mystery **Date:** 5/15/12

**Name:** Iris **Grade:** 6

---

**Fun**

How fun was the game?  
*(Please circle a face)*

SO fun!
  Fun!
  I'm not sure
  Not so fun
  Epic fail

---

**Difficulty Level**

How difficult was the game?  
*(Please circle one)*

Too easy
  Nicely challenging
  Too challenging

---

**Clarity of Rules**

How clear were the rules?  
*(Please circle a face)*

Perfectly clear!
  A little clear
  I'm not sure
  Not so clear
  Not clear at all

---

**What did you learn from playing this game?**  
 About the metric system. There are prefixes, milli-, kilo- and centi- and suffixes, -grams, -liters, -meters that we can combine. They mean different amounts of stuff.

**How did you help others learn from playing the game?**  
 I showed the right cards during the game. I helped Ty when asked for the same card twice in a row.

---

**Why are three different types of cards (prefix, suffix, quantity) part of the game?**  
 Because you need to mix up the cards to make different amounts. prefix + suffix = metric system. 36 milliliters or 59 kilograms.

**If you found these three hidden cards in the envelope—25, gram, milli—what do they tell you? And is this amount big or small? How do you know?**  
 25 milligrams—small amount because milli is 1/1000.

**What patterns did you see on the game board?**  
 Bigger amounts of things are on the outside of the board.

# Game Play Reflection Template

**NAME OF GAME:**

**Game**

**Date**

**Name**

**Grade**

**Fun**

How fun was the game?  
*(Please circle a face)*



SO fun!



Fun!



I'm not sure



Not so fun



Epic fail

**Difficulty Level**

How difficult was the game?  
*(Please circle one)*

Too easy

Nicely challenging

Too challenging

**Clarity of Rules**

How clear were the rules?  
*(Please circle a face)*



Perfectly clear!



A little clear



I'm not sure



Not so clear



Not clear at all

**What did you learn from playing this game?**

**How did you help others learn from playing the game?**

# Classroom Observation Guide - Metric Mystery

We use this guide to help us determine what data we want to collect from classroom observations during game play. At Quest schools, before the game is rolled out in the classroom, this guide is filled out by a team (involving the teacher who designed the game) and all observers. After completing this form, the team can use it to fill out the Classroom Observation form (p. 39).

## EDUCATOR TIP

Ask fellow teachers, administrators, or parents to help you observe the game play during a classroom lesson.

## NAME OF GAME: METRIC MYSTERY

### OBSERVATION GOAL

To evaluate how the design of the Metric Mystery game allows for students to learn science/math content (Does it meet core **learning goals** for the domain?).

Subgoals:

- To evaluate how the game allows for students to be **engaged and enjoy** game play.
- To evaluate how the design of the game facilitates learning (rules, materials, etc).

### GAME LEARNING GOALS

#### (SCIENCE/MATH CONTENT AND SKILLS)

1. Students will develop an understanding of the modular nature of the metric system (i.e. combining metric prefix with metric suffix and a quantity).
2. Students will develop greater ease and level of comfort with using metric system terms.
3. Students will develop skills of deduction. [Goals 1 and 2 were taught, so the game should help reinforce them].

### QUESTIONS TO CONSIDER WHILE OBSERVING THE GAME

1. **Does the Game achieve the learning goals?**
  - b. Do students use the language of the metric system correctly? (Learning Goal #1)
  - c. Do students recall and use terms with more ease as the game progresses? (Learning Goal #2)
  - d. As the game progresses, are students making choices more quickly on the board? (Learning Goal #3)
  - e. Are students having conversations around the content? (Learning Goals #1, #2, and #3)
  - f. Are students helping each other? (Look for student interaction)
2. **Design of Game**
  - c. How much time does it take for kids to start playing the game?
  - d. How many times do students ask for help in clarifying rules?

### OBSERVATION GUIDELINES

1. Each observer should sit with one group of students.
2. Do not interact with students. If they ask a question about the game, please tell them they need to ask the teacher.
3. Strive for low-inference (objective) observations.
4. Use the template as a guide, and refer back to the observation goal to keep you focused.



# Classroom Observation Guide Template

**NAME OF GAME:**

**OBSERVATION GOAL**

**GAME LEARNING GOALS (SCIENCE/MATH  
CONTENT AND SKILLS)**

**QUESTIONS TO CONSIDER WHILE OBSERVING THE GAME**

**OBSERVATION GUIDELINES**

1. Each observer should sit with one group of students.
2. Do not interact with students. If they ask a question about the game, please tell them they need to ask the teacher.
3. Strive for low-inference (objective) observations.
4. Use the template as a guide, and refer back to the observation goal to keep you focused.

# Classroom Observation - Metric Mystery

We use this template to gather evidence of effective student learning and game design. We use questions from the Classroom Observation Guide (p.37) to help us determine what types of evidence we need to collect.

## NAME OF GAME: METRIC MYSTERY

### DESIGN OF GAME

- How much time does it take group to start playing the game?
- Make tally mark for each time students ask for help with directions/game play.

- On average, students took about 3-5mins to start the game.
- Groups that took longer had trouble figuring out which student should go first or how to use the Top Secret sheet.
- For next year, use a random way to choose which student goes first (closest birthday to April 30th?) and spend extra time explaining the Top Secret sheet.
- 5 students asked for help with game play.

### LEARNING GOALS #1 AND #2 - RECALL AND USE OF TERMS

- Make tally mark for each time students use metric terms.
- Record notes on use of metric terms.

- ALL students used the metric terms by the end of class!
- Students seemed very comfortable with metric suffixes, but had more trouble with prefixes.
- After I wrote a hint on the board arranging prefixes from smallest to largest, students got the hang of using prefixes quickly.

### LEARNING GOAL #3 - DEDUCTION

Make tally mark for each time students use Top Secret form to inform guesses.  
Record length of time it takes students to make choice on the board. (Does it seem to get faster as game goes on?)

- Does student utter any comments (or use) body language that reveals how confident they are in their choices?

- # of students using Top Secret sheet to inform guesses - IIII IIII (by halfway through game play)
- Because not as many students were using the Top Secret sheet, I stopped game play and re-explained how to use it. After that, all students were using it.
- Students definitely sped up in the choices, so their understanding about how where they landed could help with their guessing speed increased.
- At least half the students smiled, excitedly moved their pieces, or exclaimed something when they moved - indicates they were confident.

### PARTICIPATION AND COLLABORATION

- Note number of students participating in game play.
- Note each time students have conversation around content. (What are they saying?)
- Note when students help each other.

- One student didn't want to participate, but when everyone was playing and having fun, he joined when a new round started.
- No student was having off-topic conversations during game play that I heard.
- Students left the classroom talking about the metric system.
- 5 out of 7 groups of students showed they were helping each other by gently asking questions like "Why did you move there?" and "Did you ask for that card before?"

# Classroom Observation Template

**NAME OF GAME: METRIC MYSTERY**

**DESIGN OF GAME**

**LEARNING GOAL**

**LEARNING GOAL**

**PARTICIPATION & COLLABORATION**

# Teacher Reflection - Metric Mystery

We use this tool to gather evidence about the effectiveness of our game. This tool also helps us improve the game for the next time we play the game.

## EDUCATOR TIPS

- Use student reflection and observation forms as data sources.
- Collecting data about game effectiveness will also strengthen your game design knowledge and skills.

## NAME OF GAME: METRIC MYSTERY

This game enabled all students to participate.

1 2 3 4 **5**

### HOW DO YOU KNOW?

All students participated based on observations and I had 100% completion of game reflection forms.

This game gave students immediate feedback about their learning.

1 2 3 **4** 5

### HOW DO YOU KNOW?

Students gave feedback to each other. Showing cards to each other during game play gave feedback to students about their potential guesses.

Students were constantly challenged during the game.

1 2 3 **4** 5

### HOW DO YOU KNOW?

60% of students marked nicely challenging on reflection form; 25% marked too challenging and 15% circled too easy.

Students reached all learning goals by playing this game.

1 2 3 **4** 5

### HOW DO YOU KNOW?

100% of students wrote they learned the different parts of the metric system and how to use them. 5 students wrote down that they learned how to guess better. I will need to work on making deductive reasoning a more explicit learning goal to really see if students reached that learning goal.

Students shared their learning with peers.

1 2 3 **4** 5

### HOW DO YOU KNOW?

90% of students gave examples of helping their peers on reflection form. I also observed the majority of students helping other students.

Students were able to fail and try again during the game.

1 2 3 4 **5**

### HOW DO YOU KNOW?

No students gave up when they didn't get something right. And students who guessed wrong stayed engaged in game play because they knew they would be able to play in the next round.

Students had fun during game play.

1 2 3 4 **5**

### HOW DO YOU KNOW?

100% of students checked Fun! or SO fun! on the reflection form.

## ADDITIONAL QUESTIONS

1. How do you know students reached learning goals?
2. What were the most successful parts of the game?
3. What were the challenging parts?
4. What would you change?

# Teacher Reflection Template

## NAME OF GAME:

This game enabled all students to participate.

**HOW DO YOU KNOW?**

1 2 3 4 5

This game gave students immediate feedback about their learning.

**HOW DO YOU KNOW?**

1 2 3 4 5

Students were constantly challenged during the game.

**HOW DO YOU KNOW?**

1 2 3 4 5

Students reached all learning goals by playing this game.

**HOW DO YOU KNOW?**

1 2 3 4 5

Students shared their learning with peers.

**HOW DO YOU KNOW?**

1 2 3 4 5

Students were able to fail and try again during the game.

**HOW DO YOU KNOW?**

1 2 3 4 5

Students had fun during game play.

**HOW DO YOU KNOW?**

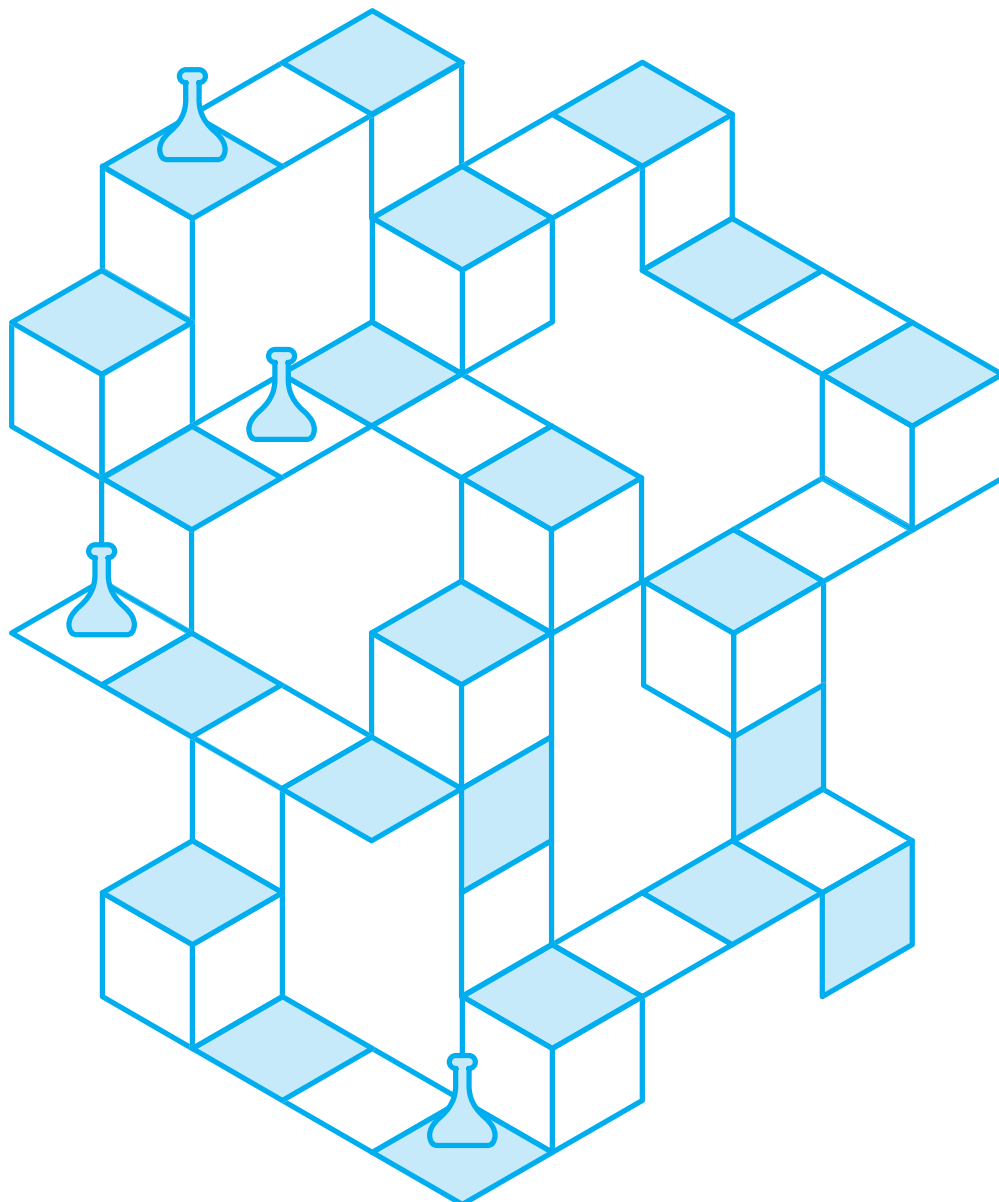
1 2 3 4 5

## ADDITIONAL QUESTIONS

1. How do you know students reached learning goals?
2. What were the most successful parts of the game?
3. What were the challenging parts?
4. What would you change?

# Quest Curriculum Team Model

How do Quest curriculum teams work and why are they effective?



# Curriculum Team Model in Action

How do Quest curriculum teams work and why are they effective?

*"[A curriculum team meeting is a] place where teachers can be creative and are encouraged to be creative."  
-Quest School Leader*



A game designer, curriculum designer, and middle school teacher meet to design curriculum for a media, technology and game design course.

## EFFECTIVE PROFESSIONAL DEVELOPMENT IS

- Collaborative
- Focused on Student Learning
- School-Based
- Embedded in the Daily Work of Teachers
- Continuous

Click on this text to see a video about our curriculum team model.

**Collaboration at Quest schools** is at the heart of curriculum team meetings. And this collaboration has resulted in the development of an amazing number of learning tools, especially games. In the last four years, Quest to Learn and ChicagoQuest curriculum teams have created more than 80 games across content areas in grades 6-9. A big question is what makes our curriculum team model work?

The **collaborative** nature of the team is powerful in itself because it enables

all team members to be both teachers and learners as they share their expertise and learn new knowledge and skills. Then they, as a group, truly feel ownership over what they design together. Also, the idea for a game can come from any team member (not just game designers). The beauty of the team's collaboration is seen when a new game idea is put on the table. All members begin to brainstorm and share their ideas about how to design and develop this potential game.

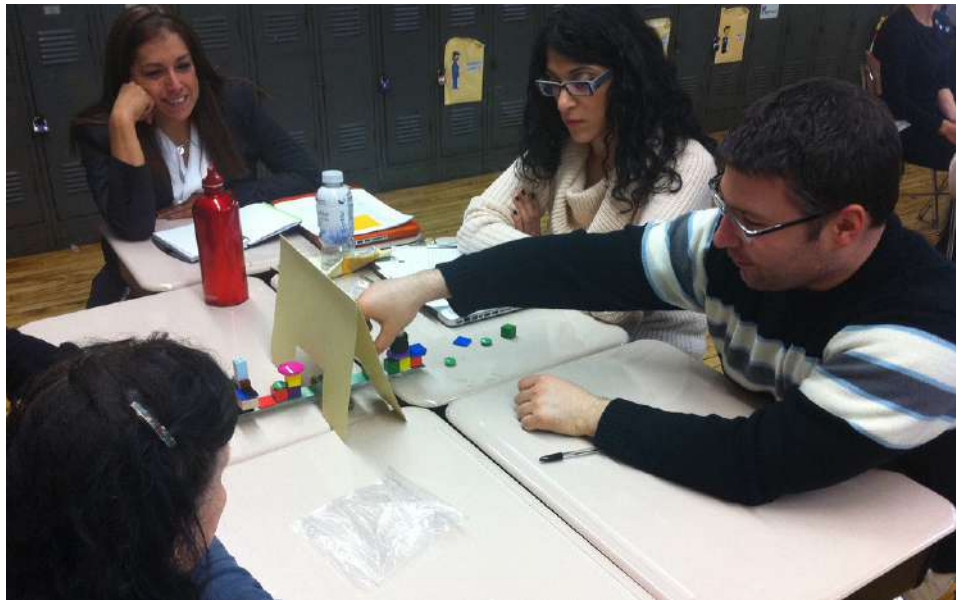
All work in curriculum teams is **focused on student learning**. With student learning goals placed at the center of all curriculum team work, the team then focuses on designing, developing and implementing curricula, games, and other innovative learning experiences using different technologies or out-of-school locations.



Curriculum teams meet once or twice a week during the school day (depending on a teacher's experience teaching at Quest schools) in classrooms. Allocating time and space are the first steps to making a professional development program in a school successful. Because curriculum meetings are **school-based** and **embedded in the daily work of teachers**, teachers see this team work time as a support rather than a burden.

At Quest, the design of curriculum and games is **continuous**. It doesn't stop at the end of a meeting. Instead, at the end of each meeting, team members leave with a set of next steps to accomplish before the next curriculum meeting. The recurring nature of curriculum team meetings enables team members to hold each other accountable for completing work needed to move forward on projects.

In addition, to encourage teachers to try new things in their classrooms, curriculum and game designers provide continued support. When new games are being playtested (tested out by a smaller group of students before the game is played with a whole class) and rolled out in a classroom, curriculum and game designers are right there in the mix of things.



### EDUCATOR TIPS

Use these questions to create effective professional development for yourself or your school:

- Who am I working with? [Collaborative]
- What do I want my students to learn? [Student Learning]
- Where do we meet? [School-based]
- How will I test out my ideas with students? [Embedded]
- What is our regular meeting time? [Continuous]

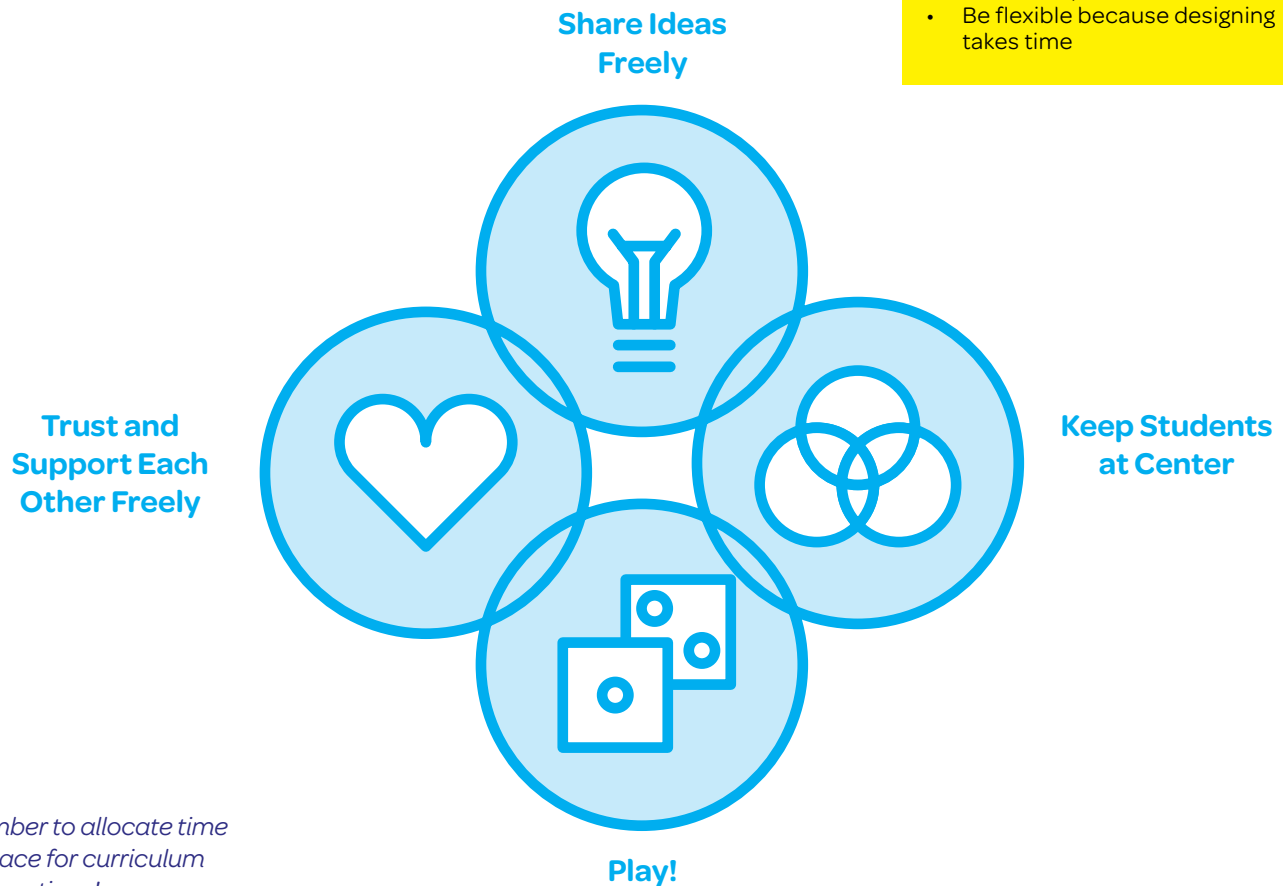
Quest teachers and school leaders play together and work collaboratively to create game-like curriculum and learning games.

# Creating Collaboration

Collaboration doesn't just happen.  
It must be nurtured and supported.

## EDUCATOR TIPS

- Use collaborative tools like google docs
- Be prepared for meetings and don't overplan
- Be flexible because designing takes time



*Remember to allocate time and space for curriculum team meetings!*

**Before starting to design** any collaborative working environment, it is essential to develop a set of collaboration norms. It took us some trial and error to develop our norms, and in the end, we agreed upon the following four norms:

- Keep students at center
- Share ideas freely
- Trust and support each other
- Play!

We always **keep students at the center** of our work because they are

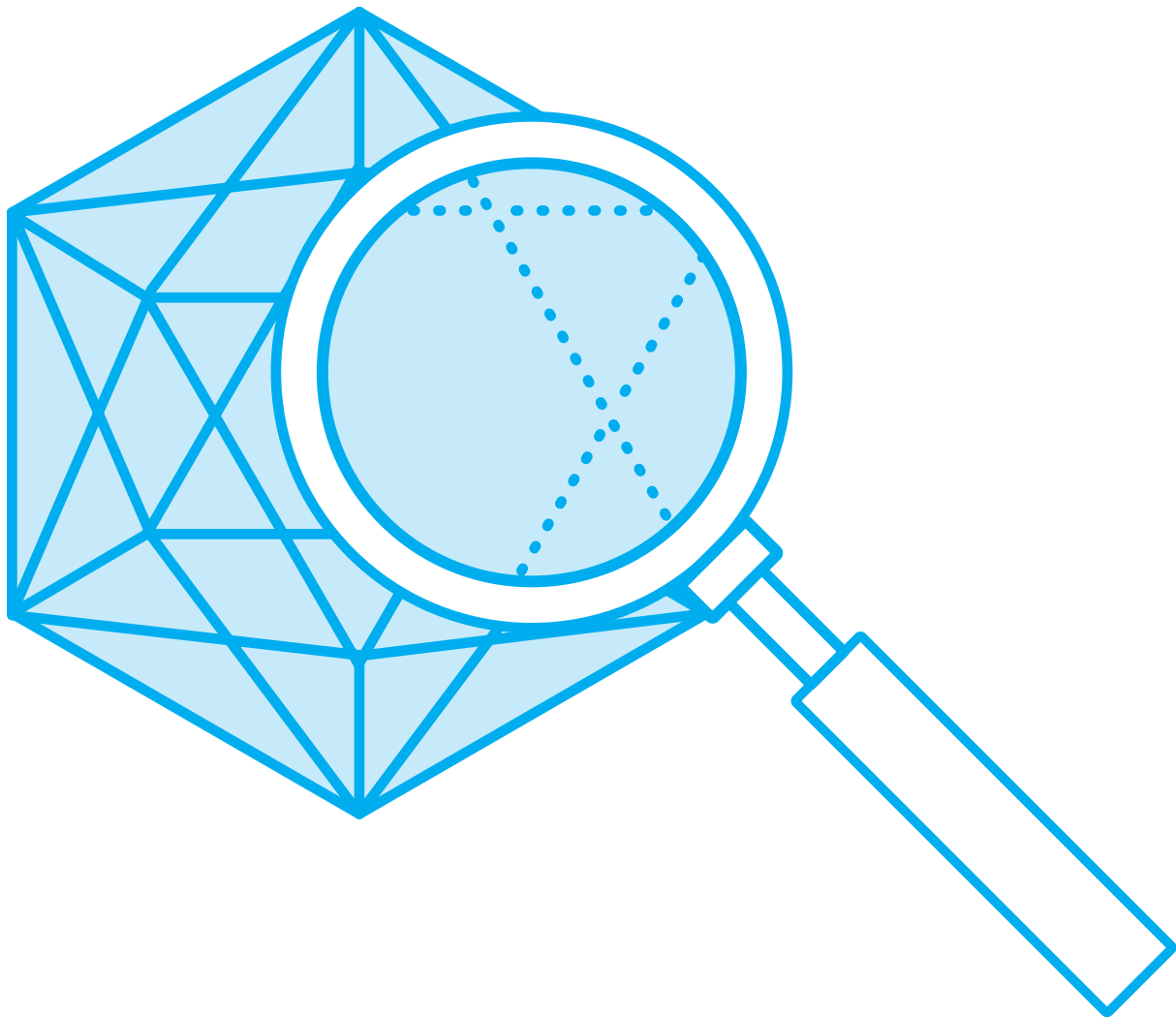
our learners and players. Our games are aligned to both student learning goals and assessments and are designed to ask students to transfer their learning to new contexts rather than just memorize new content. To **share ideas freely**, we brainstorm many ideas, no matter how crazy, before taking any off the table. We **trust and support each other** by respecting each other's expertise and backgrounds and having lines of communication around work expectations, deadlines, and problems that arise. In doing so, we create a safe

haven for the team to try and fail and try again. Lastly, we make sure we are having fun and enjoying the design process to **keep play** as part of our collaboration.

When you set up a collaborative team, it is essential to agree upon a set of norms to both set expectations and be able to hold each other accountable to the norms. By creating a secure structure for collaboration with norms, you will achieve anything you want to as a team.

# Going Further

To reflect on what you learned, discover more about the Quest school model or find additional resources about game design, just keep reading.



# Design Pack Reflection

Take a couple of minutes to reflect on what you learned in this design pack.

## EDUCATOR TIP

Whenever you learn something new and begin to play in the new learning space, it is important to take time to reflect on what you learned and what you want to learn more about.



## REFLECTION QUESTIONS

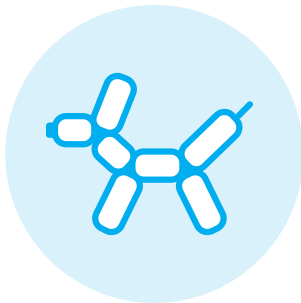
1. What resonated for you from what you learned about design thinking and/or game design?
2. How could you imagine using game design in your classroom?
3. What do you want to learn more about in terms of game design?



## Appendix: Game-Like Learning Principles

These game-like learning principles frame curriculum design and classroom interactions to make learning more engaging in Quest schools. The seven principles should be understood as working together within a system—

no single principle does much on its own. It is the relationships among the principles that make the game-like learning at our schools powerful and effective.



### It kind of feels like play

Learning experiences are engaging, learner-centered, and organized to support inquiry and creativity.



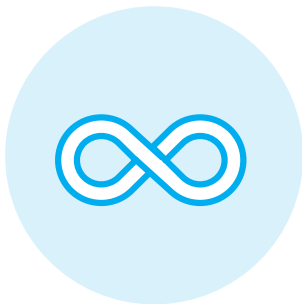
### Everyone is a participant

A shared culture and practice exists where everyone contributes, which may mean that different students contribute different types of expertise.



### Failure is reframed as iteration

Opportunities exist for students and teachers to learn through failure. All learning experiences should embrace a process of testing and iteration.



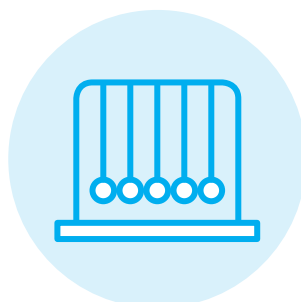
### Learning happens by doing

Learning is active and experiential. Students learn by proposing, testing, playing with, and validating theories about the world.



### Everything is interconnected

Students can share their work, skill, and knowledge with others across networks, groups, and communities.



### Challenge is constant

A “need to know” challenges students to solve a problem whose resources have been placed just out of reach.



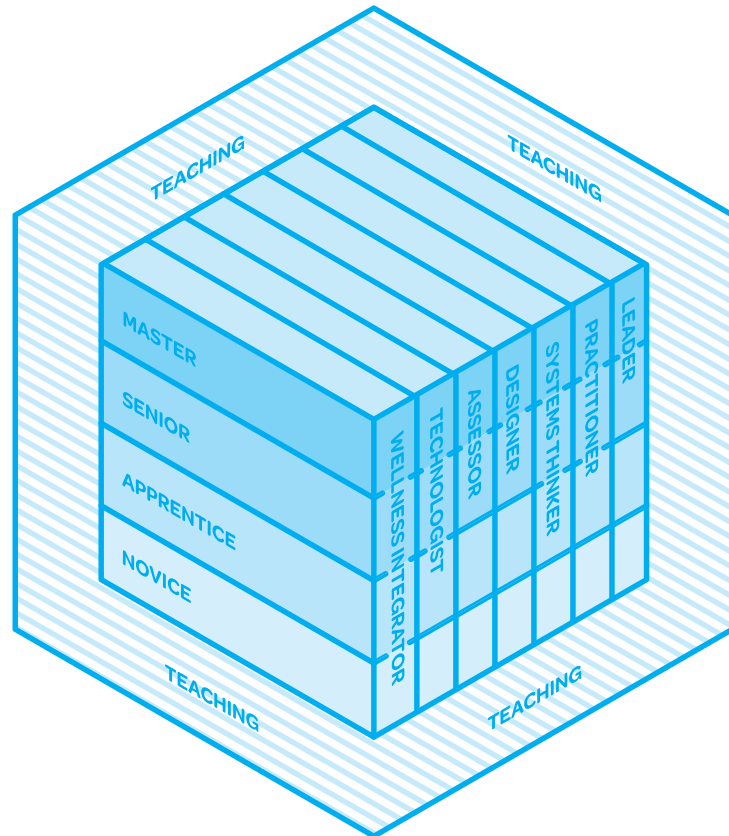
### Feedback is

#### immediate and ongoing

Students receive ongoing feedback on their progress against learning and assessment goals.

## Appendix: The Seven Dimensions of Teaching

We know that teaching is so much more than what students experience in classrooms. A foundational aspect of Quest professional development requires teachers to grow and develop in seven dimensions. This graphic illustrates the separate, yet linked, nature of the dimensions. We believe that all dimensions are key to being an effective classroom teacher. We also know that teachers grow and develop at different rates. Some teachers may be novices in some dimensions and seniors in other dimensions whereas other teachers may be novices in the majority of dimensions. Our goal is to support all our teachers in reaching the senior or mastery level in order to enable them to support all students in reaching their learning potential. During the course of a school year, teachers create a portfolio of evidence from their teaching to show their growth in the different dimensions.



### Master

This level means a teacher exceeds basic standards by creating innovative approaches and new knowledge and supports other teachers in their learning.

### Senior

This level means a teacher exceeds basic standards and adapts their knowledge and skills for different situations.

### Apprentice

This level means a teacher meets basic standards and needs additional coaching and practice to improve.

### Novice

This level means a teacher must be taught the basics standards.

### Wellness Integrator

Teachers are able to use their knowledge of these dynamics to address students' emotional, academic, and physical needs.

### Technologist

Teachers are able to find meaningful ways to use technology to expand student learning about complex problems beyond what analog tools allow.

### Assessor

Teachers are able to use tools and data to make decisions about how to best to support all students in reaching learning goals based on student strengths and areas of need.

### Designer

Teachers are able to design learning experiences that increase student engagement resulting in more student learning.

### Systems thinker

Teachers are able to see and manage complexity, and subsequently teach and model the use of tools and ways of thinking to help students understand how systems work and how to change them in positive ways.

### Practitioner

Teachers are able to create safe and productive learning environments for all students and effectively connect support networks for students in and out of school.

### Leader

Teachers are able to continue their own professional growth as they initiate and lead projects that exemplify their strengths and develop their areas of growth as leaders.

# Continued Learning

Now that you've explored the Games for Learning Design Pack, we hope you are inspired to learn more about game design and collaboration.

Below is additional information to support you in continuing to build and share your own learning.

## We want to hear from you

We want to hear from you about your experience with this design pack.

Did it change your teaching?  
How did your students respond?  
Would you use this design pack again?

We welcome your stories and sharing of your newly designed games.

**Email your feedback and thoughts to:**  
info@instituteofplay.org

## We want you to learn more

If you are interested in learning more, please visit these following websites:

**Institute of Play**  
www.instituteofplay.org

**Quest to Learn, NYC**  
www.q2l.org

**CICS ChicagoQuest**  
www.chicagoquest.org

## We also offer other Design Packs

**Q Design Pack: School**  
This pack highlights ten innovative components of the Quest school model.

**Q Design Pack: Curriculum**  
This pack provides tools and methods for you to use to design game-like curriculum for your classroom.

**Q Design Pack: Systems Thinking**  
This pack provides tools and methods for you to use to integrate systems thinking into your teaching.

## We want you to share these resources

This resource is free and we want you to share it with others. When you do use and share it, please know this resource is licensed under a Creative Commons license.

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## We want to thank our partners

This design pack is a result of collaborative work done over the past years between Institute of Play, Quest to Learn, and CICS ChicagoQuest. These resources are made possible through the generous support of The Bill and Melinda Gates Foundation, Carnegie Corporation of New York, and the John D. and Catherine T. MacArthur Foundation.

### ADDITIONAL RESOURCES

#### Game Design

Institute of Play

- Gamekit - <http://www.instituteofplay.org/work/projects/gamekit/>
- Games As Guide - <http://www.instituteofplay.org/work/projects/games-as-guide/>
- GlassLab - <http://glasslabgames.org/>
- Playtime Online - <http://www.instituteofplay.org/work/projects/playtime-online/>
- Quest to Learn - <http://www.instituteofplay.org/work/projects/quest-schools/quest-to-learn/>



# About Institute of Play

## **We design experiences that make learning irresistible.**

The Institute pioneers new models of learning and engagement. We are a not-for-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 first project was the design and implementation of an innovative New York City public school, called Quest to Learn.

## **At the core of the experiences we design are games, play and the principles that underlie them.**

Using these principles, we have created institutions, games, programs, events, digital platforms and products. Our work unlocks the transformative power of people as seekers and solvers of complex problems, risk takers, inventors and visionaries. We work wherever people are: in communities, businesses, schools, cultural and civic institutions.

## **We empower people to thrive as active citizens in a connected world.**

We are not preparing for a distant future. We are about meeting people where they are and igniting their potential now. We work with a diverse set of partners to make it happen, such as Electronic Arts, Intel, Educational Testing Service, the Mozilla Foundation, the Smithsonian, Parsons the New School for Design, Chicago International Charter Schools, DePaul University, E-Line Media and others.

## A Selection of Our Work

### **GlassLab**

An unprecedented collaboration between leaders in the commercial games industry and experts in learning and assessment, GlassLab aims to leverage digital games as powerful, data-rich learning environments that improve the process of learning with formative assessments teachers can trust.

### **Play@Your Org**

With a hands-on exploration of games and design, Play@ Your Org workshops are designed to help businesses, cultural institutions and other organizations integrate the power of play-based learning in their work to maximize participation and engagement.

### **Playtime Online**

A live hour-long webinar series, Playtime Online explores the work of leading organizations in the field of games and learning, the people who do it and why it matters in the world today. The series also offers a live forum to share learning within the Playtime community.

For more information, please visit [www.instituteofplay.org](http://www.instituteofplay.org)