

### 3: LESSON PLAN - QUARTEX

<b>LEARNING AIMS</b>	<p>Students will:</p> <ul style="list-style-type: none"> <li>● Engage in cooperative play</li> <li>● Reflect on their own logical and spatial reasoning</li> <li>● Gain a basic understanding of game mechanics, rules, fundamental gameplay, scoring, strategies</li> <li>● Logical reasoning: <b>Investigate</b> the game to learn how to create good, legal moves (W1) – getting to know the game</li> <li>● Spatial reasoning: <b>Tactilizing</b> (touching, manipulating, moving around, testing out) with the tiles to figure out how to place tiles on the emerging board (W1) – getting to know the game</li> <li>● Logical reasoning: <b>Predicting</b> future tile placements to set up scoring points (W2)</li> <li>● Spatial reasoning: <b>Fitting</b> pieces onto the board in ways that complete corners to score points (W2)</li> <li>● Spatial reasoning: <b>Visualizing</b> tiles to use to make good plays and <b>visualizing</b> where to place tiles for the most effective turn (W3)</li> <li>● Logical reasoning: <b>Evaluate</b> configurations of game boards and <b>evaluate</b> plays (W3)</li> </ul>
<b>MATERIALS</b>	<ul style="list-style-type: none"> <li>● Enough copies of <i>Quartex</i> for your class</li> <li>● Scoring sheet</li> <li>● Pencil for scorekeeping</li> <li>● Reflection sheet</li> </ul>
<b>SPECIAL CONSIDERATIONS</b>	<ul style="list-style-type: none"> <li>● Organize groups according to student needs: students can play in pairs or individually up to 4 players. Encourage discussion and understanding of the game.</li> <li>● One round of Quartex game play takes takes approximately 30 minutes.</li> </ul>
<b>LESSON ACTIVITIES</b>	<p>1. In last class, you were asked you to think about predicting your moves and finding the best place to fit tiles on the game board. Quartex is all about making the best fit with a tile on the board ... but making a good fit relies on being able to <b>visualize</b> a tile/spot if you don't want to give away your tiles to your opponent. This week we are asking you to focus on <b>visualizing</b> and <b>evaluating</b>.</p> <p>To do this, we have a game twist – a special power to use!! Each one of you will get a blank tile that you get to play once in each game. The twist is, you get to choose the design of your tile AND when the best time for you to create and play it is. Discussion questions:</p> <ol style="list-style-type: none"> <li>1) How do you think this twist will give you an advantage?</li> <li>2) What ideas do you already have about when you will create/use your custom tile?</li> <li>3) How will visualizing and evaluating the board help you make the most of your custom tile play?</li> </ol>

	<p>You will need to both visualize and evaluate in order to master the use of your custom tile so think carefully before playing, it might make or break your game!</p> <ol style="list-style-type: none"> <li>2. Divide students into their groups and hand out reflection sheets.             <ol style="list-style-type: none"> <li>a. Reinforce knowledge of game pieces and game rules as needed.</li> <li>b. If students want, they could have open play, where all tiles are visible to all players or they may begin to use the shields to hide their pieces.</li> <li>c. Play!</li> </ol> </li> <li>3. Teacher circulates and prompts student discussion of strategies.</li> <li>4. Students clean up games.</li> <li>5. Students complete the reflection sheet. Give students time after their math class if needed.</li> </ol>
<p><b>QUESTIONS/ REFLECTION</b></p>	<p>Focus Prompts for Week 3:</p> <ul style="list-style-type: none"> <li>● Does playing with the shields and hiding your tiles from your opponent make it easier or harder to visualize your move? Why?</li> <li>● When you are planning out your move, do you need to touch any of your tiles in order to help you visualize where each piece might fit, or can you think of a move to make without touching any of your tiles?</li> <li>● In other games, students have created rules such as ‘once you touch a piece, you have to move or play that piece’- do you think that would make Quartex harder to play? Why/Why not?</li> <li>● How do you go about evaluating your opponent's move? What do you do or think of first, second, third ... when you evaluate when playing a game?</li> <li>● How many turns in advance do you start trying to plan your next move?</li> <li>● Is there a risk in trying to predict your next move too soon? Why?</li> <li>● Which piece in your hand would you trade in for another if you could, why?</li> <li>● Do you have any planned moves which include more than one of your tiles?</li> <li>● Did you look at the tiles first? Board first?</li> <li>● How is this game similar and different to Qwirkle?</li> <li>● What are you doing to find a spot to put your tile?</li> <li>● What did you say to your partner to figure out your next move?</li> <li>● Do you stop after finding one spot or do you keep looking?</li> <li>● If you have two good plays, how do you choose?</li> </ul>

	<ul style="list-style-type: none"> <li>● How did you know you'd get a colour token that turn? How did you know you could complete a corner shape?</li> <li>● What do you notice about the tiles?</li> <li>● Did you know you can flip the tile over? How do the two sides compare?</li> <li>● What are the most or least colours that could be on the corners of tiles?</li> <li>● How are the colours on the corners of the tiles arranged?</li> </ul> <p>Other questions/prompts:</p> <ul style="list-style-type: none"> <li>● When your turn starts, how do you decide what piece to play? Use drawings and words.</li> <li>● Look at the board below. Let's say you're going to put your next piece in the spot where the arrow is pointing. Draw a picture of at least two different pieces that would fit there. Explain why both would fit.</li> <li>● Tell me one interesting thing you learned about Quartex. Use drawings and words.</li> <li>● What strategy helps you get a high score in the game? Is there something you do during the game to get a high score?</li> <li>● How do you know you're an expert at Quartex? How would you know if a friend you were playing Quartex with was an expert at the game?</li> <li>● A strategy I'm testing today is _____. My reason for trying this strategy is _____.</li> <li>● Here's a strategy I use to set up to get a colour token (points).</li> <li>● A good move/strategy that my partner shared with me today was _____.</li> <li>● If you could start the game with any piece, which one would it be? Draw a picture and explain why with words.</li> <li>● What are <b>ALL</b> the <b>DIFFERENT</b> ways you could place the piece pictured on the game board? Use the tiles below to show (draw). Explain how you know you have all. [Give a piece and then 12 boxes to draw in.]</li> <li>● Here's what we did to find the best place to play (draw and explain).</li> <li>● Here's what we did to try to finish a shape and get a colour token (points) today (draw and explain). Here is one thing I did in the game today to finish a shape and get a point chip (use drawings and words):</li> <li>● Pick a piece and examine it. Draw it below. Tell me everything about the piece you can.</li> <li>● If you have two good plays, how do you choose? Use drawings and words. Convince me your choice is the best move.</li> <li>● Today you learned the rules for how to find your score at the end of the game. How did that affect how you played Quartex?</li> <li>● For your fourth turn, draw the tile you played. Explain why you picked that tile. Explain what you did to put it fit it on the board.</li> <li>● These are two different boards that came up in your class. Circle which</li> </ul>
--	---

	<p>game board you would rather play on. Convince me <b>why</b> it's a better board! Why is the other board not as good?</p> <ul style="list-style-type: none"><li>● STOP when you get your first colour chip for finishing a shape! How did you first know you would finish a shape? Tell me what you did to finish the shape – use drawings and words.</li><li>● Can you tell me three things you noticed about the playing pieces? Be sure to draw pictures to help me understand! (give them three squares to draw in)</li><li>● When you're setting up, find a tile that has symmetry. Draw it: Make a dashed line - - - - - for any lines of symmetry.</li><li>● Find a second piece that has at least one more line of symmetry. Draw it: Make a dashed line - - - - - for any lines of symmetry.</li><li>● STOP when someone finishes a shape for the <b>first</b> time. Get a picture taken! How many of the four corners on a tile have to make a match on the board? Why?</li><li>● Explain a situation where you can finish three shapes at the same time (drawings and words). How many of the corners have to match?</li><li>● Do more lines of symmetry make a piece harder or easier play? Explain why (drawings and words).</li><li>● These are two different boards that came up in your class. (give 2 photos). How many spots can you complete a shape on this board? _____ . How do you know you found all the spots?</li></ul>
--	---

## Reflection Sheet: Quartex

Your Name: \_\_\_\_\_ Team Members: \_\_\_\_\_

### 1) Visualizing an Ideal Tile to Play

- a) Today you received one blank tile to design your ideal play. **Tape** your tile onto this page. **Draw** the tiles around it that it connected to on the board.

- b) Explain what you saw on the board that influenced your tile design.

---

---

---

- c) Be strategic!! How did you decide was the best time to design and play your tile?

**Check all ideas that apply** (can star most important ideas):

- |   |   |
|---|---|
| <input type="checkbox"/> Order of corners                     | <input type="checkbox"/> Create interesting board arrangement   |
| <input type="checkbox"/> # of colours on tile                 | <input type="checkbox"/> Tiles left in the game                 |
| <input type="checkbox"/> Early in the game                    | <input type="checkbox"/> Repeating a tile that's already played |
| <input type="checkbox"/> Waiting till later in the game       | <input type="checkbox"/> Messing up (blocking) an opponent      |
| <input type="checkbox"/> Situation on the board               | _____   |
| <input type="checkbox"/> # of tokens you can get for one play | _____   |
| <input type="checkbox"/> Set up another tile in your hand     | _____   |

## 2) Evaluating Game Boards

Here are two different boards. **Circle** which game board you would rather play on.



Board A

Board B



Convince others **why** the board you picked is a better board! Give at least two reasons.

---

---

---

---

---

---

---