

NATIVE AMERICAN EDUCATION FOR ALL RESOURCES

Partnership of IllumiNative and the National Indian Education Association



ILLUMINATIVE



Grade Level

6-8

Subject

Math

Lesson Title

Picaria: A Zuni Pueblo Math Game

Activity Description: Traditional Native games are not only physical competitions, but they also include games of logic and chance. This activity teaches how to play Picaria, a Zuni Pueblo math game. This game may seem similar to modern tic-tac-toe at first, but it soon turns into a game of movement and strategy. Create your own game board and practice mathematical thinking skills while having fun.

MATERIALS NEEDED

- WiFi access (optional)
- 2 people to play
- Piece of paper, cardboard, or thin wood for the game board*
- Dark colored marker
- 6 game pieces (beans, small stones, game chips): 3 of one color/design and 3 with different color/design
- ["Picaria" directions](#) by Math Central

*The board could also be made on a piece of leather or cloth as it was traditionally which means it will last longer.

STEPS

Picaria is a two-player game of strategy and logic. This game originated from the Zuni Pueblo in the Southwest. Like modern tic-tac-toe, the goal of the game is to get 3-in-a-row but it is played by moving pieces around a board instead. This game not only builds mathematical thinking skills, but it can also become quite competitive. Be sure to show good sportsmanship when playing. For more fun, gather your friends and family to play as well.

Preparing for the Activity:

1. For game instructions and examples of the playing board, visit the page ["Picaria" from Math Central](#).
 - a. You can also find printable patterns or a printable game board in the "Helpful Tips" section below.
 - b. If no WiFi or printer, follow the directions in the Helpful Tips" section to create your own board.
2. If you want to watch a video of how the game is played, visit this YouTube link ["How to Play Picaria: Abstract strategy game."](#)

Playing the Game:

1. Pick which color/design of game pieces you will be and choose who goes first. Be sure to have 3 game pieces each.
2. (DROP PHASE) Each player takes turns placing their game pieces on the board in the corners of the squares. Some people play with the rule that you cannot place your piece on the center of the board.
3. Once each player has placed each of his or her three game pieces, now it is time to begin moving the pieces.
4. (MOVE PHASE) Now, take turns moving your game pieces one line at a time in any direction but do not jump over any game pieces.
5. The first player who lines up 3 in a row either during placing the pieces or moving them, wins the round.
6. If a player is unable to move a game piece, you can decide if that means the player loses or the game must be started over.

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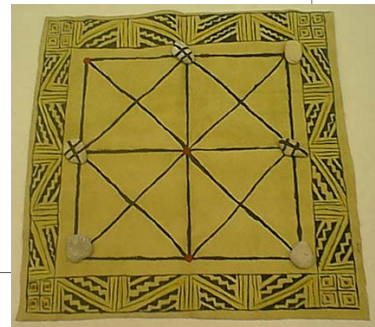
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**Picaria: A Zuni Pueblo
Math Game**

HELPFUL TIPS

Parents and caregivers: Picaria is an excellent game for other members in the family. Not only can it teach strategy to your elementary age children, but adults can also enjoy this competitive game. For more information on creating the boards visit these links:

- For the pattern to make a Picaria board, view/print this [pattern by Auntie Annie's Crafts](#).
- For an already-made printable version of the board, print this [page from Auntie Annie's Crafts](#).
- If you do not have WiFi access or a printer, follow these steps to make a game board:
 1. To create your own board (without WiFi access) follow these directions:
 2. Draw a large, even square on the board surface.
 3. Draw lines down the middle of the square both directions (in a cross pattern) to divide the large square into four smaller squares.
 4. Draw an X through each of the four smaller squares. This creates the connecting lines for the game pieces to move across the board.
 5. Draw small circles where each of the lines intersect at the corners of the squares. This is where you place the game pieces.



WANT TO LEARN MORE?

Families and educators: For additional Native games based on math and logic, view pages 23-35 of [Indigenous Logic Math Games](#) from Burnaby Schools. This PDF document provides printable game boards and directions for several Native American logic games including Picaria.

Activity Resources:

- "Picaria" by Math Central <http://mathcentral.uregina.ca/RR/database/RR.09.00/treptau1/game11.html>
- "How to Play Picaria: Abstract strategy game" YouTube video by What Do We Do All Day https://www.youtube.com/watch?v=Lm-1_aNMCs8

Additional Resources:

- "Picaria Game Board Patterns" by Auntie Annie's Crafts <https://www.auntannie.com/GamesToMake/Alignment/Picaria/>
- *Indigenous Logic Math Games* from Burnaby Schools <https://burnabyschools.ca/indigenouseducation/wp-content/uploads/sites/4/2019/01/logic-games3.pdf>