

Curriculum topics:

- Logic
- Strategy
- Mathematical Reasoning
- Problem Solving
- Critical Thinking
- Traditions and Cultures

**Subject: Math,
Social Studies**

Grade range: 3 – 8

Who we are:

Resource Area for Teaching (RAFT) helps educators transform the learning experience through affordable “hands-on” activities that engage students and inspire the joy and discovery of learning.

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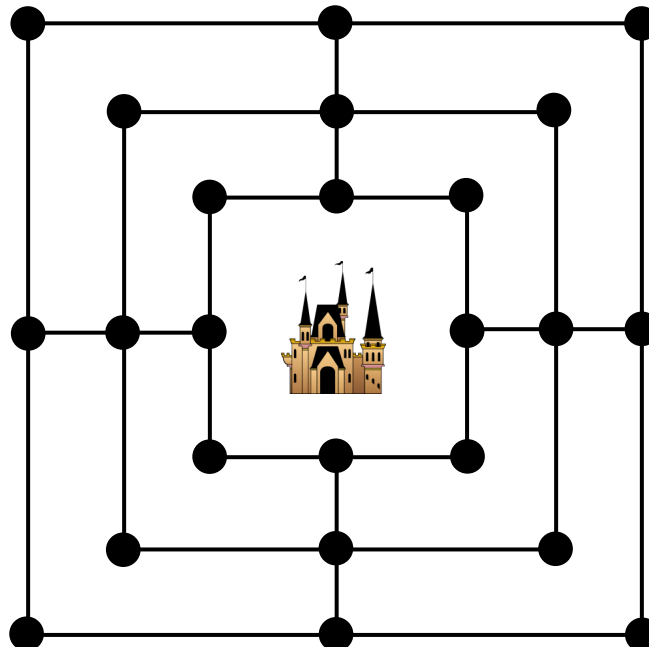
www.raft.net/visit-raft-locations

NINE MEN’S MORRIS

A popular game of Medieval Europe



If this historic “three-in-a-row” strategy game seems familiar, it’s because Nine Men’s Morris is Tic-tac-toe taken to the next level! Use it to teach logic and problem-solving.



Nine Men’s Morris Board

Materials required

- 1 Two-sided game board (to create your own board, go to <http://www.raft.net/raft-idea?isid=244>.)
- 24 Game pieces - 12 each of two colors (Nine Men's Morris uses 18 pieces, Morabaraba and Shax use 24 game pieces)

Playing the game (for 2 players)

Goal: The object of the game is to remove an opponent's pieces by forming lines of three pieces ("**mills**") along any of the 16 lines. A mill can be formed in a **row** (three across) or a **column** (three down).

Winning the game: A player wins when his or her opponent has only 2 pieces left, or if the opponent has no legal moves available.



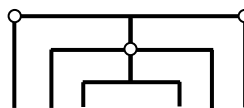
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Each player starts with **9** game pieces of the same color. Toss a coin to decide who goes first.

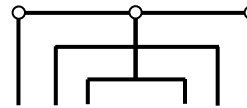
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Placing and capturing the pieces (Stage 1 of the game). Play begins with an empty board. Player 1 places a game piece onto any one of the twenty-four dots on the game board, and then player 2 places a game piece onto an open dot. The pieces are played on the **intersections** (the places where two or more lines meet), and the corners of the squares, all indicated by dots on the board. If a player's placement completes a "**mill**," (a line of three of that player's piece), in a **row** (three across) or a **column** (three down), then that player may at that time capture **ONE** opponent's piece located anywhere on the board. A mill may be broken and reformed several times. However, a piece may not be captured from an opponent's mill unless no other piece belonging to the opponent is on the game board. Captured pieces may not be placed again. Once all eighteen pieces have been placed, players take turns moving.

Creating a mill:



Step 1



Step 2

Strategy Tip: In the Nine Men's Morris endgame, an ideal position is to shuttle one piece back and forth between two mills, removing an opponent's piece every time.

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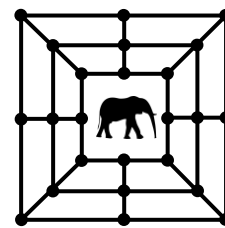
Moving the pieces (Stage 2 of the game). Players alternate taking turns sliding a piece from its spot to an empty adjacent spot. Pieces may only be slid along the lines. As in the "placing the pieces" stage, if a player's move completes a mill, which is a line of three of that player's pieces, then that player may remove one of the opponent's pieces from the board (see the rules described in the **Placing the pieces stage**). A player must slide a piece even if it is to his or her disadvantage. If a player cannot slide a piece, he or she has lost the game.

"Fly" rule. When a player is down to **3** pieces, that player may move ("fly") his or her piece to any empty spot on the board.

African variants

Morabaraba

Morabaraba is also known as Twelve Men's Morris: each player has 12 pieces. It uses a pattern similar to the Nine Men's Morris board, but adds 4 extra diagonal lines. The lines are drawn from the corners of the inner square to the corners of the outer square. (This board is included in the RAFT Nine Men's Morris kit.)



Morabaraba Board

The rules for Morabaraba are exactly the same as Nine Men's Morris, with the exceptions described below. In Morabaraba, mills may be created not only in rows and in columns, but also diagonally. Mills may be broken and remade repeatedly as in Nine Men's Morris; however, in Morabaraba, the same piece cannot be moved from a mill to a mill on consecutive moves. This prevents capturing an opponent's piece on every turn. As with Nine Men's Morris, the game ends when one of the players cannot move any more pieces, or has lost all but 2 pieces on the board. An additional rule to end the game is the following: If a player is down to 3 pieces, is "flying" the pieces, and neither player is able to capture a piece within ten moves, the game ends in a draw.

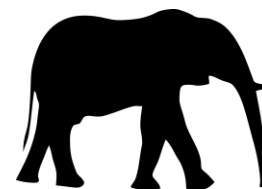
See these websites for the official Morabaraba rules:

Mind Sports South Africa

<http://www.mindsportssa.freesevers.com/rules-morabaraba.htm>

Indigenous Games Rule Book (South Africa), pp. 22-23

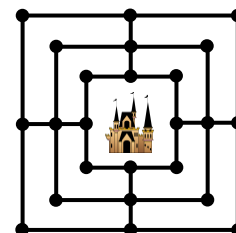
<http://www.srsa.gov.za/pebble.asp?reid=167>



Shax

Shax is played in East Africa, primarily by Somali peoples. The Somali nomadic culture refers to Shax in many stories and literature about people famous in Somali history and folklore. In these stories, the movement of the Shax pieces is used as a metaphor for clan activities.

Shax is similar to Nine Men's Morris and uses the same board, but has slightly different rules. It is a game of advance strategy. Rather than 9 pieces, each player has 12 pieces. Like Nine Men's Morris, the object of the game is to remove an opponent's pieces by forming "mills" ("jares") of three pieces along any of the 16 lines.



Nine Men's Morris /
Shax Board

Placing the pieces (Stage 1 of the game). Each player takes a turn placing pieces on the board for strategic advantage in the second phase of the game. While placing pieces each player also tries to be the first to place three in a row or three in a column. This is called a "jare." There is no capturing at this stage.

Moving the pieces (Stage 2 of the game). The player who first made a "jare" has the right to capture one piece belonging to the opponent from anywhere on the board. Then the opponent must capture a piece from the first player. This opens up two spaces on the board. The player who first made a jare then moves one piece to any adjacent empty space which has just been created.

Note: If no jare was created in the first half of the game, then the player who did not go first now gets to capture an opponent's piece. Then the other player captures a piece.

Each player now tries to create new jares. Each time a jare is created, an opponent's piece can be captured from anywhere on the board.

Curriculum Standards:

Problem Solving and Reasoning
(Common Core Math Standards: Mathematical Practices Grades 3-7, 1, 2, & 8)

Traditions, culture, and recreation
(National Curriculum for Social Studies: Theme 1, Culture)

Knowledge and understanding of the past
(National Curriculum for Social Studies: Theme 2, Time, Continuity, and Change)

Additional standards at:
<http://www.raft.net/raft-idea?isid=244>

African variants (continued)

Shax (continued)

Blocking. If one player blocks all possible moves for the other player, the blocker must open up a space by moving a piece without making a jare. If the blocker cannot open a space without making a jare, the blocker may not capture an opponent's piece.

Winning the game. A player wins when his or her opponent has only 2 pieces left, or if a player decides to forfeit.

Learn more

Related activities:

See these Idea Sheets for more RAFT games from different parts of the world:

Gaming Sticks -

<http://www.raft.net/ideas/Gaming Sticks.pdf>

Konane -

<http://www.raft.net/ideas/Konane.pdf>

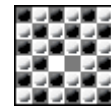


Mancala -

<http://www.raft.net/ideas/Mancala.pdf>

Senet -

<http://www.raft.net/ideas/Senet.pdf>



Tactile Sudoku -

<http://www.raft.net/ideas/Tactile Sudoku.pdf>

Resources

Visit www.raft.net/raft-idea?isid=244 for “how-to” video demos & more ideas!
See these websites for more information on the following topics:

- **Play Nine Men's Morris online** –
<http://merrelles.com/English.html> or
<http://alumnus.caltech.edu/~leif/games/Morris/morris9b.html>
- **A brief history** –
<http://www.tradgames.org.uk/games/Nine-Mens-Morris.htm>
- **For more strategies, and variants of Nine Men's Morris** –
<http://gamescrafters.berkeley.edu/games.php?game=ninemensmorris>
- **For more information on Shax** –
<http://www.dm.unipi.it/~jama/ethno/shax.html> or
<http://www.mande.co.uk/docs/shax.htm>

The content behind the activity

As with any game of strategy and mathematical reasoning, playing Nine Men's Morris enhances problem solving skills. Games are wonderful ways to motivate students; they enjoy themselves and do not always realize that they are getting practice with mathematical skills. While playing, students will have many opportunities to notice patterns and evaluate the changing relationships between the pieces.

History of the game

Recreation is as much a part of culture as language, kinship, and food acquisition; every culture has unique games and recreational activities. People from around the world have always played games of strategy for recreation. Well-known classic strategy board games include Checkers, Chess, Go, Backgammon, and Mancala. Nine Men's Morris, also known as "Mill", is one of the oldest strategy board games in the world and has been played continuously since its invention. The oldest known version of this board was carved into a temple in Kurna, Egypt, more than 3,400 years ago. Other boards have been discovered in a variety of other places throughout the world. Evidence shows they were carved into steps, rocks, walls, and the ground in Sri Lanka, on a Viking ship, in ancient Troy, and in the Southwestern United States. To the ancient Celts of Bronze-Age Ireland, the Morris square design was considered sacred.

Nine Men's Morris reached the height of its popularity in medieval Europe. During the 14th century, it was played on boards in taverns, on boards drawn on the ground, and on boards carved into the seats in many British cathedrals. It remained popular throughout the Renaissance, and is referenced in Shakespeare's *A Midsummer Night's Dream*.

Many variants of this game have been played in a variety of places around the world. These include China and other locations in Asia, many European countries, and Africa.