

SATURDAY ENRICHMENT SPRING 2019 **MANCALA TWISTS (Grades 4-5)**

Instructor: David Phelps
Instructor Email: dphelps@uw.edu
Location: Loew Hall 116

Course Description

Come try new twists on the world's oldest game! Mancala is a fun strategy game invented in Africa thousands of years ago. Many game experts believe it is the world's FIRST board game! Over the centuries Mancala has traveled the world and versions of the game are played in Africa, Asia, Europe, The Philippines and even here in Seattle. This club will allow returning students to continue their quest to master Mancala challenges, such as finding the ultimate first turn, and help new friends to learn the game. New students will build their own Mancala boards and jump into the many ways to play Mancala. In addition to challenges we explored in the Fall and Winter Session, this session we will emphasize game design, as students invent their own versions of Mancala and playtest them with family and friends, as well as Mancala bots as students articulate their best strategies into moves that pen-and-paper bots can perform.

Essential Questions

For students motivated by exploration:

- How many different ways of playing Mancala can we learn?
- What ways can we change the game to make it even more fun and interesting?
- How do game designers think?

For students motivated by achievement:

- What's the maximum number of stones we can score on the first turn?
- Can you learn to see patterns that help you continuously scores stones?

For students motivated by competition:

- What successful strategies can we discover for each game?
- How can we design a game-winning Mancala bot?
- How do you design a game that is fair to first and second players?

For students motivated by cooperation:

- How can friends design a Mancala game together?
- How can we design a Mancala game for 3 or 4 players?
- What does good sportsmanship and fair play look like in a Mancala game?

Learning Outcomes

Students will understand a combination of STEM concepts that can include: combinatorial thinking, computational thinking, and design thinking.

Students will be able to take responsibility for their own inquiry into Mancala. Students will gain experience using a number of generative inquiry practices: researching their gameplay,

organizing their investigations, motivating themselves, collaborating with others, innovating resourcefully, and participating equitably.

Students will also experience the design cycle, moving from idea to prototype, feedback, and revision.

Instructional Strategies

Knowledge-Building Community and Writing-to-Learn: During arrival meetings, coaches introduce new Mancala challenges and review the Mancala Charter while students share discoveries and pose pen-pal questions to students in other Saturday Club Mancala classes

Emergent Curriculum and Student Agency: Coaches set up structured motivation-based stations (exploration, achievement, competition, cooperation) that pose progressive challenges requiring advanced STEM practices to master. Students are responsible for choosing a station, pursuing their chosen challenges, collaborating with peers, and sharing their progress with the club.

Family Engagement: Students build take home Mancala boards to play with their families and other communities outside of the club, and parents are invited to participate in the club and share their own experiences with Mancala. Parents are also always welcome to stay and play or volunteer to help with the club.

Student Assessment

Coaches will follow students’ trajectories of participation in the club – reviewing students’ gameplay, notebook entries, debrief discussions, and pen pal question/answers. Using students’ own developing interests as a starting point, coaches will design additional Mancala challenges and provocations for students while supporting students’ inquiry practices as the Mancala challenges become progressively sophisticated.

Resources and Materials

Instructors will supply all the resources and materials needed for this club including: Mancala boards and stones, take-home Mancala boards, Mancala Club Charter, notebooks, poster board, and specific tools for Mancala Challenges: Mancala Mixer Rule Maker, Repeater Bot and Random Bot.

Tentative Course Schedule

(Will likely be revised according to student interests and discoveries!)

Date	Topic(s)	In-Class Activities
Week 1 4/6	Welcome to Mancala Club! Students will learn about the origins of Mancala and will take responsibility for their own social-emotional learning in the club by creating a Charter together.	<u>Arrival meeting:</u> Introduce history of Mancala Create Club Charter Build egg-carton take-home mancala boards Teach and play round-and-round Mancala

	<p>Returning students will partner with new players to help them learn the rules of round-and-round.</p>	
<p>Week 2 4/13</p>	<p>Becoming Mancala Masters! Students new to Mancala will learn the inquiry practices of master mancala players including notation, collaboration, persistence, at-home study, and being responsible for one’s own path to mastery.</p> <p>Students will also learn the center structure of the club where they will pursue their own path.</p> <p>Returning students can continue on challenges where they left off, or explore new challenges.</p>	<p><u>Arrival meeting:</u> Share experiences playing Mancala at home Review Club Charter Discussion: “What specific things do people do to become Mancala Masters?” Introduce notation, centers, challenges. Introduce 1st Turn Challenge Introduce All-the-Way Around</p> <p><u>Centers:</u> 1st Turn Challenge, Game Design All-the-way Around Social Play</p>
<p>Week 3 4/27</p>	<p>Exploring Mancala Variants! Students will explore different variants of Mancala from around the world.</p>	<p><u>Arrival meeting:</u> Share experiences playing Mancala at home Notation reminder with discussion: “How can we improve upon our notation system?” Introduce Capture Introduce Wari</p> <p><u>Centers:</u> 1st Turn Challenge Capture / Wari Social Play</p>
<p>Week 4 5/4</p>	<p>Exploring More Variants! Students will explore some twists on round-and-round that emerged from previous Mancala Clubs including a student’s game Threeo from Winter Quarter.</p>	<p><u>Arrival meeting:</u> Introduce Play-to-Tie Rule Set Introduce Play-to-Lose Rule Set Introduce Threeo Rule Set Introduce Quicksand Rule Set</p> <p><u>Centers:</u> 1st Turn Challenge Play-to-Tie / Play-to-Lose Capture / Wari / Threeo Game Design Social Play</p>
<p>Week 5 5/11</p>	<p>Can you beat a Mancala Bot? This week students learn about how to read and play against a Mancala pen-and-paper bot program.</p>	<p><u>Arrival Meeting:</u> Introduce Mancala Bots Discussion: “What can we do if a bot crashes?”</p>

		<p>Discussion: “What are some ideas for game designs that include multiple boards or hybrid dry-erase marker boards?”</p> <p><u>Centers:</u> Play against Random Bot / Repeater Bot Game Design Capture / Wari / Threeco / and more Social Play 1st Turn Challenge</p>
Week 6 5/18	<p>Can you design your own Bot? This week students will try to design their own Mancala bot as they learn about design iterations—prototyping, playtesting, and revising—and about computational logic.</p>	<p><u>Arrival Meeting:</u> Introduce: Sunka Introduce: Mancala programming tiles: Jackpot, Random, and a blank template for students to create their own. Discussion: “What are good strategies for winning round-and-round, what are good strategies for intentionally losing round-and-round?” “How can we write these strategies as instructions for a bot?”</p> <p><u>Centers:</u> Social Play Bot Building Game Design Capture / Wari / Threeco / Sunka / and more 1st Turn Challenge</p>
Week 7 6/1	<p>Extending Student-led Inquiries! Students continue pursuing an inquiry of their choice, and prepare to show off what they’re discovering to the attendees of the upcoming Mancala party.</p>	<p><u>Arrival Meeting:</u> Plan Mancala Party Introduce 4-player Capture Discussion: “Any new bot strategy ideas?”</p> <p><u>Centers:</u> Social Play Bot Building Game Design Capture / Wari / Threeco / Sunka / and more 1st Turn Challenge</p>
Week 8 6/8	<p>Mancala Party!!! We host families and friends to come try playing students’ various creations including new rule-sets and bots. We’ll also have a few zany versions of Mancala that use bananagram pieces and legos!</p>	<p><u>Arrival Meeting:</u> Students share discoveries with families and others Families reflect on what this experience has taught them about how children learn</p> <p><u>Centers:</u> Invented Game Expo Kids vs. Parents (or Bots vs. parents!) Social Play (with 4-player Mancala option)</p>