



**SATURDAY ENRICHMENT SPRING 2019**  
***MANCALA CLUB***  
***(Parents Welcome!)***

Instructor: David Phelps  
Instructor Email: [dphelps@uw.edu](mailto:dphelps@uw.edu)  
Location: Loew Hall 116

## **Course Description**

Come try new twists on the world's oldest game! Many game experts believe Mancala 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. In this club, children (and any interested adults! Parents welcome!) will build egg-carton Mancala boards together that they can take home and play with. Returning students can help new students learn how to play and share the secrets they learned last session. In addition to challenges we explored in the Fall and Winter Session, this session we will emphasize both 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?

*For students motivated by achievement:*

- What's the maximum number of stones we can score on the first turn?
- What makes one Mancala game more fun than another?

*For students motivated by competition:*

- What successful strategies can we discover for each game?
- How can we have the most fun whether we win or lose?
- How can we design a game-winning Mancala bot?

*For students motivated by cooperation:*

- How can we play-to-tie?
- How can we create Mancala games for more than two 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 that require 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. Returning students will have the chance to help new students learn how to play and notate, and become a part of our community.

*Family Engagement*: In this class parents who are able to attend with their children are facilitators and co-learners. Besides building and bringing a Mancala board home, parents and children will learn and play many variations on the game, and then explore creating their own versions. Parents will have the opportunity to learn how to facilitate learning through play by observing, asking questions, allowing children to correct their own errors, helping children with writing or reading as needed, and most of all by being curious to discover what children can learn through deep play. Sometimes parents will be working with small groups of children at one of our centers, allowing their child to visit and work in different centers if they wish, sometimes a parent and their child will work together on a challenge or a project the child is curious about.

## **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 more 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!)

<b>Date</b>	<b>Topic(s)</b>	<b>In-Class Activities</b>
Week 1 4/6	<p><b>Welcome to Mancala Club!</b> 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. Returning students will partner with new players to help them learn the rules of round-and-round.</p>	<p><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>
Week 2 4/13	<p><b>Becoming Mancala Masters!</b> 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. Returning students can continue on challenges where they left off, or explore new ones.</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>
Week 3 4/27	<p><b>Exploring Mancala Variants!</b> 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>
Week 4 5/4	<p><b>Exploring More Variants!</b> 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 /Play-to-Lose Rule Set / Threeo Rule Set / 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>
Week 5 5/11	<p><b>Can you beat a Mancala Bot?</b></p>	<p><u>Arrival Meeting:</u> Introduce Mancala Bots</p>

	<p>This week students learn about how to read and play against a Mancala pen-and-paper bot program.</p>	<p>Discussion: “What if a bot crashes?”                  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 / Threoo / and more                  Social Play                  1st Turn Challenge</p>
<p>Week 6 5/18</p>	<p><b>Can you design your own Bot?</b>                  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: Sungka                  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 / Threoo / Sungka / &amp; more                  1st Turn Challenge</p>
<p>Week 7 6/1</p>	<p><b>Extending Student-led Inquiries!</b>                  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 / Threoo / Sungka / &amp; more                  1st Turn Challenge</p>
<p>Week 8 6/8</p>	<p><b>Mancala Party!!!</b>                  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 guests                  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>