

H m 2
1/1/09

25/01/09

~~Actually...~~ huh!

list my resources
test my experience more than once.

~~I think I should do it on light instead of conserving water because light has more to do with science than conserving water.~~

~~Light~~

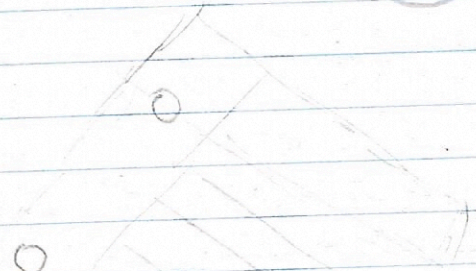
Rock-Paper-Scissors 25/01/22

Question: How can you maximize your win ratio in rock paper scissors?

Can I measure something to help answer my question?
yes I can, I can measure my wins and losses.

Is my question a yes or no question?
No, it is not.

My Base



25/01/25

Scientific Method - Rock Paper Scissors

Q Question: How can you maximize your win ratio in rock paper scissors?

H Hypothesis: If I play according to what the other person played in the previous round, I have a better chance at winning.

25/02/19

E Experiment: For my experiment I played 10 rounds of rock-paper-scissors against my mom then saw my average/percent of how many times I won. After that I read the winning strategy then played 10 more times against my mom knowing the winning strategy, I counted my average/percent of wins then looked to see if I had improved at all.

25/02/28

O Observe and Record: I observed that I was actually winning more rounds while using a strategy to win more in RPS.

A Analyze: Yes in fact, my hypothesis was correct, when you play according to what the other person played the previous round you have a better chance at winning.

25/03/04

Quotes

"A science fair project isn't about the end result, it's about the journey."

- Mme Jacques

"Science rules."

- Bill Nye

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Things I Should Remember

- Turn my winning ratios into a percent / average
- Play 10 times not knowing winning strategy and see average / percent
- Play 10 times knowing winning strategy and see average / percent
- Don't forget to add Method, future considerations, description and bibliography.
- Write down that you can use RPS in the future in an argument etc.

Science Fair Board - 25/02/17

Big Question: How can some one ~~maximize~~ ^{improve} their win ratio in Rock-Paper-Scissors?

Hypothesis: If I play according to what the other person played last round I have a better chance at winning.

Materials: hands, ~~a coin or computer etc, the website: <https://www.betpost.com/entry/rock-paper-scissors-n-5265286>~~ a partner that doesn't know the strategy.

Project title: Rock-Paper-Scissors

Student's Name: Ananya

Research: If a player loses a round by offering up a "rock" they are more likely to play "paper" the next time. If a player wins a round the rock hand, it's more likely that they will "play rock" again. "Win-stay, lost-shift" theory, which suggests that people tend to stick with a winning strategy and shift with a losing one.

Conclusion: In conclusion, it turns out when you use a strategy to try and win more in rock, paper, scissors you actually succeed in winning more!

25/02/17 - 25/02/19

Data: Put "no strategy test #1" and "strategy test #1". * remove (no strategy) to be like (strategy format).

Results:

Me { ~~Average (no strategy): 3/10 (strategy): 4/10~~

Mom { ~~Average (no strategy): 3/10 (strategy): 7/10~~

Procedure: I played 10 rounds of rock paper scissors against my mom not knowing a strategy of how to win RPS more and saw the average score of my mom and I. Then I played another 10 rounds knowing a strategy of how to win RPS more against my mom then saw the average score of my mom and I then I saw if I had improved with the strategy.

What I Learned: ^{add more} I learned that when you play according to what the other person played last round, you have a better chance at winning.

Method: So basically, in RPS, there are three things you can play; Rock-paper or scissors. In RPS, Rock beats scissors, scissors paper and paper beats Rock. You play against

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one person at a time, and to start you face the other person and say: Rock-Paper-Scissor, shoot, and when you say shoot that's when you reveal to the other person what you played and see if you beat them. ~~There are normally 1-3 rounds but you can play as many rounds as you like.~~

Description: In this science fair project I talk about how someone can improve their win ratio in RPS.

~~Pictures~~

Future Considerations: ~~Not just playing against my mom and play more than 10 rounds.~~

25/02/23

EXPERIMENT TEST #1 (NO STRATEGY)

GAME #	ROUNDS	MOM'S PLAY	MY PLAY	ROUND RESULT	OVERALL GAME RESULT
1	1	S	P	Mom ✓	MOM
	2	R	R	Draw ✓	
	3	P	P	Draw ✓	
2	1	R	S	MOM ✓	Draw
	2	P	P	Draw ✓	
	3	R	P	Me ✓	
3	1	R	S	Mom ✓	Draw
	2	S	P	Mom	
	3	P	P	Draw	
4	1	S	P	Mom	Draw
	2	R	P	Me	
	3	S	S	Draw	
5	1	S	P	Mom	Draw
	2	P	P	Draw	
	3	R	P	Me	
6	1	D	S	Me	Me
	2	R	R	Draw	
	3	S	S	Draw	
7	1	R	P	Me	Draw
	2	R	S	Mom	
	3	P	P	draw	
8	1	S	S	draw	MOM
	2	P	P	draw	
	3	P	R	Mom	
9	1	P	P	draw	Me
	2	S	S	draw	
	3	R	P	Me	
10	1	S	S	draw	Me
	2	S	R	Me	
	3	S	S	draw	

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EXPERIMENT TEST #2 (STRATEGY)

Game #	Round	Mom's Play	My Play	Round result	Overall Game result
1	1	P	P	draw	Me
	2	R	R	draw	
	3	P	S	me	
2	1	R	R	draw	MOM
	2	R	S	MOM	
	3	P	P	draw	
3	1	P	R	MOM	MOM
	2	R	S	MOM	
	3	P	P	draw	
4	1	S	R	Me	Me
	2	R	P	Me	
	3	P	S	Me	
5	1	P	R	MOM	draw
	2	P	S	Me	
	3	R	R	draw	
6	1	S	S	draw	draw
	2	P	P	draw	
	3	R	R	draw	
7	1	P	S	Me	Me
	2	P	R	MOM	
	3	P	S	Me	
8	1	R	R	draw	Me
	2	S	S	draw	
	3	R	P	Me	
9	1	P	S	Me	draw
	2	P	R	MOM	
	3	S	S	draw	
10	1	P	P	draw	draw
	2	R	R	draw	
	3	S	S	draw	

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Experiment Test #1 (strategy)

Game #	rounds	Sister's plan	My plan	round result	overall game result
1	1	S	P	Sister	Sister
	2	R	R	draw	
	3	S	P	Sister	
2	1	R	R	draw	Me
	2	P	P	draw	
	3	S	R	Me	
3	1	R	P	Me	Me
	2	R	S	Sister	
	3	R	P	Me	
4	1	R	S	Sister	Me
	2	R	P	Me	
	3	P	S	Me	
5	1	R	R	draw	Sister
	2	S	S	draw	
	3	R	S	Sister	
6	1	P	P	draw	Me
	2	S	R	Me	
	3	P	S	Me	
7	1	R	R	draw	Me
	2	P	S	Me	
	3	R	R	draw	
8	1	P	S	Me	Me
	2	S	R	Me	
	3	P	P	draw	
9	1	R	R	draw	draw
	2	P	S	Me	
	3	P	R	Sister	
10	1	S	S	draw	Sister
	2	S	P	Sister	
	3	P	R	Sister	

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Experiment test #1 (NO Strategy)

Game #	Rounds	Sister's play	my play	round result	over all game result
1	1	S	S	Draw	Draw
	2	R	S	sister	
	3	S	R	Me	
2	1	P	S	Me	Me
	2	P	P	Draw	
	3	S	S	Draw	
3	1	R	P	Me	draw
	2	S	P	sister	
	3	P	P	draw	
4	1	R	P	Me	Me
	2	S	S	draw	
	3	R	P	Me	
5	1	S	S	draw	Draw
	2	R	P	Me	
	3	R	S	sister	
6	1	R	S	sister	Draw
	2	P	P	draw	
	3	R	P	me	
7	1	S	S	draw	draw
	2	R	P	me	
	3	S	P	sister	
8	1	P	P	draw	draw
	2	R	S	sister	
	3	R	P	Me	
9	1	R	P	Me	Me
	2	P	S	Me	
	3	S	P	sister	
10	1	S	P	sister	sister
	2	R	P	me	
	3	R	S	sister	

Results Experiment Test #2 (Strategy)

Overall game result

Average: win: 6/10, lose: 3/10, draw: 1/10

Percent: win: 60%, lose: 30%, draw: 10%

Results Experiment Test #2 (No Strategy)

Overall game result

Average: win: 3/10, lose: 1/10, draw: 6/10

Percent: win: 30%, lose: 10%, draw: 60%

Results Experiment Test #1 (strategy)

Overall game result

Average: win: $4/10$, lose: $2/10$, draw: $4/10$

Percent: win: 40% , lose: 20% , draw: 40% .

Results Experiment Test #1 (No strategy)

Overall game result

Average: win: $3/10$, lose: $2/10$, draw: $5/10$

Percent: win: 30% , lose: 20% , draw: 50% .
