

# Team Purple

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# HMW Statement

Counting money, understanding saving & spending,  
needs vs wants

"HMW make learning about budgeting fun and  
intuitive for primary school children through  
games, stories, and interactive play?"

Engaging, easy to understand

Practical  
application

Family engagement



# The Financial Literacy Crisis: A Global and Local Challenge



## Global Crisis Statistics

27%

- of adults globally are financially literate

55.2%

- of Singapore adults are financially illiterate

35.2%

- of 18-24 year olds are financially literate (lowest rate globally)

Age 7

- Money habits form by this critical age (Cambridge University)

[1-8]



## The Critical Gaps



**Education Gap:** Only 33% of children receive financial education in primary school



**Confidence Crisis:** 67% of young people lack confidence in financial planning



**Digital Disconnect:** Singapore children use smartphones by age 10, debit cards by age 11, but lack money concept understanding



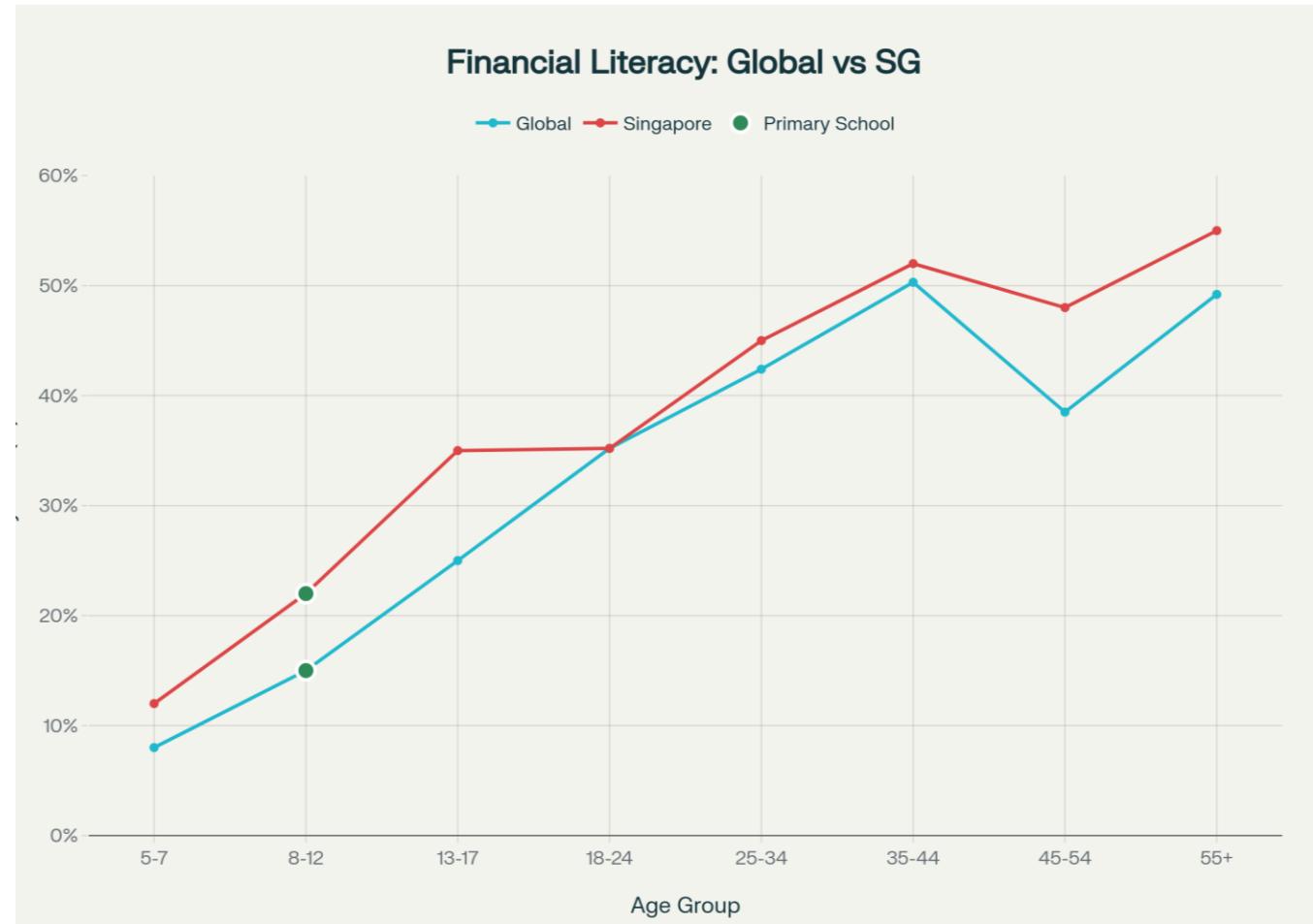
**Cashless Concern:** Growing cashless society creates fundamental disconnect between children and money value

# Financial Literacy by Age Group

## Why Primary School Children (Ages 7-12)? - Key Statistics

- Ages 7-12 lowest literacy (15-22%) - prime intervention window
- 18-24 crisis point (35.2% globally) - prevention needed earlier
- Singapore outperforms but same pattern - early action required

[9-11]



Graph generated from: [financial\\_literacy\\_by\\_age.csv](#)

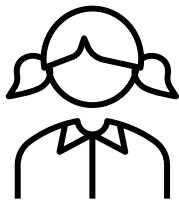
# Socioeconomic Impact of Financial Illiteracy

[12] Researchers found that financial illiteracy had the following consequences on people's lives:

- Poor financial and risky behaviour
- Higher financial fragility/insecurity
- Lower income, less wealth accumulation
- Worse financial behaviours/attitudes
- Socioeconomic inequality and exclusion
- Psychological stress, lower subjective well-being
- Impact on education and future prospects

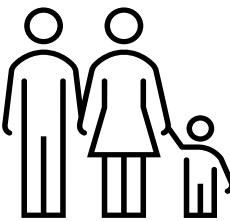
# Stakeholders

End-user



**Primary School  
children  
(7-12 years' old)**

Influencer



**Parents**

Influencer



**Teachers**

Partners



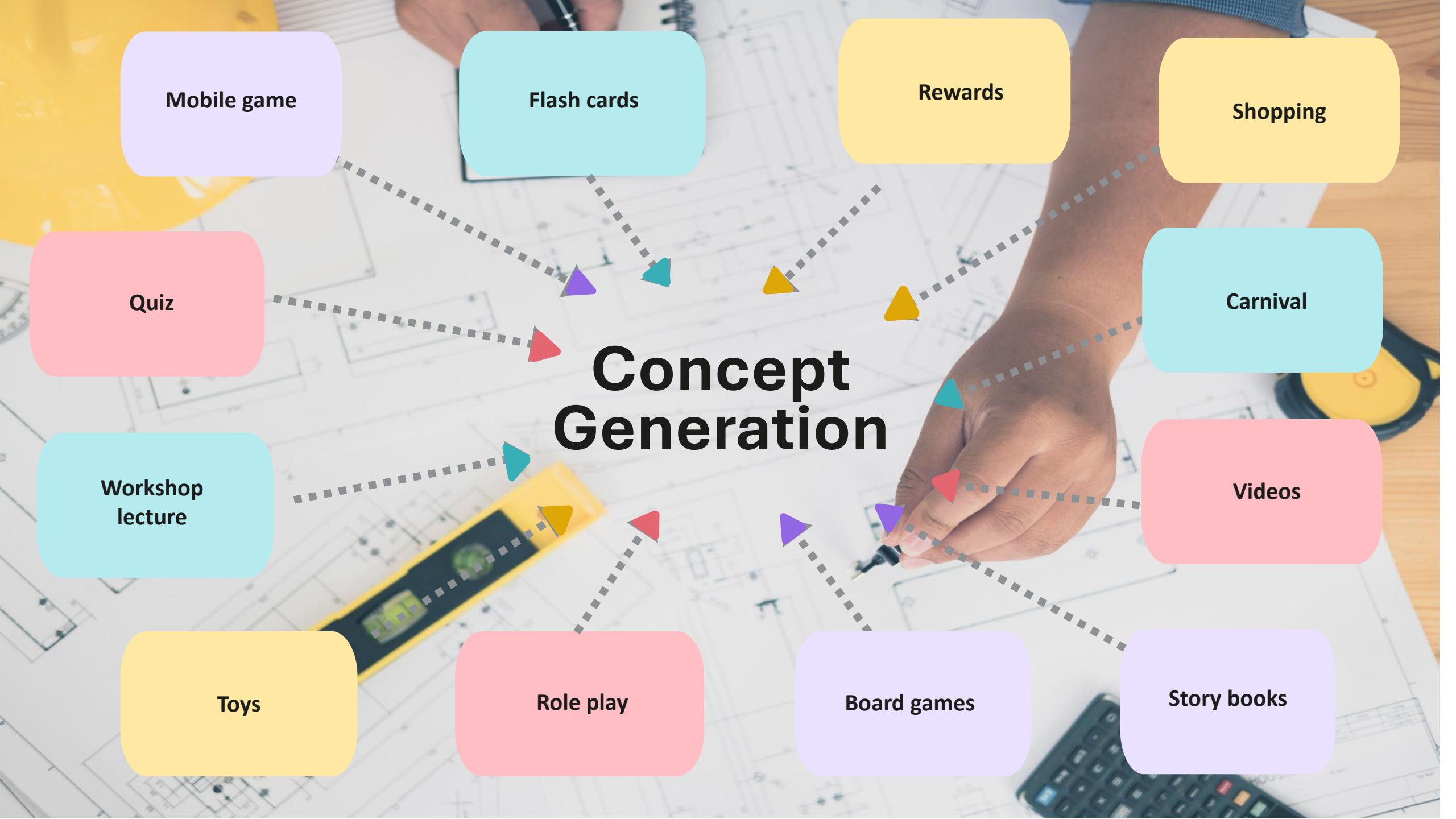
**Governments,  
financial  
institutions**

Type	End-user	Influencer	Partners
Interest	↑	↑	↓
Influence	↑	↑	↓
Implication	Co-decision-maker	Co-decision-maker	Keep satisfied

# Benchmarking Existing Solutions

Feature	Global			SG		
	Biz Kid\$ (US)	Jump\$tart Coalition (US)	Australian MoneyMinded	MoneySense	MOE Curriculum	SMU FinLIT
National financial literacy initiative based on TV series	National standards for K-12 financial education	Comprehensive workshop covering 6 key topics	National financial education program	Basic financial concepts in existing subjects	University program for young adults	
Interaction with family	None	None	None; self-learning	None; self-learning	None	None; peer-to-peer model
Interaction with teachers	Yes	Yes	None; self-learning	None; self-learning	Yes	None; peer-to-peer model
Fees	Free	Free	Free	Free	Free	Free
Target age group	5 to 12 yo	5 to 12 yo	Adults	Tertiary students to adults	6 to 18 yo	Tertiary students to adults
Practical application	None	None	None	None	None	None
"Play" factor	Game-based	Classroom-based activities	None	None	None	Game-based carnivals
Teaching resources	Available	Available	Available	Available	Available	Available
Training required for teachers/parents	Yes	Yes	None; self-learning	None, self-learning	Yes	Yes (for peers)
Progress tracking	None	None	None	None	None	None

# Needs vs Metrics



# Concept Generation

Mobile game

Flash cards

Rewards

Shopping

Quiz

Carnival

Workshop  
lecture

Videos

Toys

Role play

Board games

Story books

# Concept Scoring

Selection Criteria	Weight	Gamified App Rating	Weighted Score	Board Game Rating	Weighted Score	Storybook Series Rating	Weighted Score	Interactive Workshop Rating	Weighted Score	Card Game Rating	Weighted Score	Card/Board Game + Digital Tool Integration Rating	Weighted Score
Engagement Level	20%	4	0.80	3	0.60	3	0.60	4	0.80	3	0.60	5	1.00
Ease of Use	15%	4	0.60	4	0.60	3	0.45	3	0.45	3	0.45	5	0.75
Educational Value	25%	4	1.00	3	0.75	4	1.00	4	1.00	3	0.75	5	1.25
Family Involvement	20%	3	0.60	4	0.80	2	0.40	4	0.80	4	0.80	5	1.00
Cost Effectiveness	20%	3	0.60	4	0.80	3	0.60	4	0.80	4	0.80	5	1.00
Total Score			3.60		3.55		3.05		3.85		3.40		5.00
Rank			3		4		6		2		5		1
Continue?			Yes		No		No		Yes		No		Yes

# PROTOTYPING CANVAS

## PROBLEM/OPTION

Make learning about budgeting fun and engaging

## CONCEPT/SOLUTION

Gamified learning for parents/teachers to track progress

### STAKEHOLDERS



Users: primary school children, teachers, parents

### ASSUMPTIONS & QUESTIONS

#### About the user and their needs

- Children find learning about budgeting boring and too difficult to understand, and may not know how to apply in real life
- Teachers/parents do not know if children learnt concepts



#### About the technical feasibility & functionality

- Can we create a physical portable game for learning?
- How do we check the child's learning?
- Do we need to create a digital interface for gamified learning?

#### About the cost and business

- Minimal cost to physical portable game
- Might be costly to develop digital app
- Is the school/MOE or parents willing to pay for such a product?

### CRITICAL ASSUMPTION/QUESTION

Answer above list: what is the most critical to the success of the project?



Children do not know budgeting concepts such as spending and saving, needs vs wants and parents/teachers do not have ready resources to teach them/track their learning progress.

### INSIGHTS GAINED FROM TESTING

What did you learn? Did you answer the critical assumption/question?



Game easy to play but might be too simple (boring). Need to add complexity and elements for parent/teacher to check progress on learning.

### COMMUNICATION STRATEGY FOR PROTOTYPE



Explain  
Feedback  
Negotiate  
Persuade

Use prototype to explain concept to user then ask for feedback to improve it

### RESOURCES TO BUILD

Materials readily available or needed

- Paper, printer, laminate sheets

### SKETCH & BUILD PLAN

Build the simplest prototype possible (least cost, time, and materials required) to test critical assumption and/or answer critical question.



Sequentially prototype gamified learning device first as a paper prototype (in the form of a card game). Then prototype integration with digital integration. Role play scenarios as a team and gather user experience with teachers and parents.

#### 1. Paper prototype (card game)



-\$2



\$2



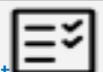
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### PROTOTYPING APPROACHES

- Parallel Prototyping
- Sub-system Isolation
- Requirements Relaxation
- Wizard-of-Oz
- Experience Prototyping
- Role Playing
- Sequential Prototyping
- Scaling
- Remove Unessential Features
- Repurpose Existing Products
- Paper Prototyping
- Other: \_\_\_\_\_

### TESTING PLAN

What are you testing?



Testing the fun level of the game and concepts learnt by students and parents/teachers' involvement in the learning process

What metrics are needed? Qualitative/Quantitative assessment.

Quantitative:

- Time spent playing
- No. of repeated plays

Qualitative:

- Positive survey rating

Time, Place, People, & Materials required to test

Test with primary school teachers/parents/children

22 Nov

Return on 29 Nov to test next iteration

#### 2. Paper prototype (digital integration)

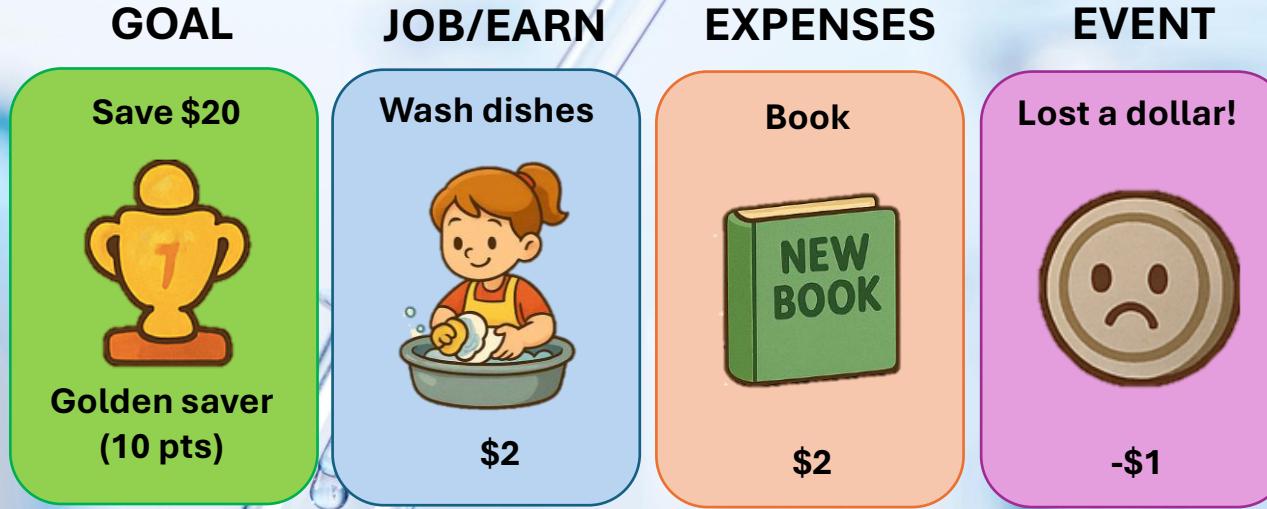


# Initial Prototype Testing

Objective: First to hit savings goal wins



Ver 1



Ver 2



- Generic, “boring”
- Learnt about savings
- Learnt how to count money
- Don’t understand expenses

- Localized, relatable
- Meaningful savings goals
- Needs vs wants
- Check for learning progress

# References

1. <https://documents1.worldbank.org/curated/en/874701565806952356/pdf/Does-Financial-Education-Impact-Financial-Literacy-and-Financial-Behavior-and-If-So-When.pdf>
2. <https://smartwealth.sg/financial-literacy-singapore-statistics/>
3. [https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/oecd-infe-2023-international-survey-of-adult-financial-literacy\\_8ce94e2c/56003a32-en.pdf](https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/oecd-infe-2023-international-survey-of-adult-financial-literacy_8ce94e2c/56003a32-en.pdf)
4. <https://www.redstareducation.co.uk/blog/our-money-habits-are-largely-set-by-the-age-of-7/>
5. <https://www.weforum.org/stories/2025/07/financial-education-students-to-parents/>
6. <https://skbi.smu.edu.sg/finlit/press-releases/1-3-young-adults-singapore-are-not-confident-managing-debt>
7. <https://www.channelnewsasia.com/commentary/children-cashless-school-learn-financial-literacy-saving-4961246>
8. <https://www.mas.gov.sg/development/fintech/digital-payments>
9. <https://smartwealth.sg/financial-literacy-singapore-statistics/>
10. <https://documents1.worldbank.org/curated/en/874701565806952356/pdf/Does-Financial-Education-Impact-Financial-Literacy-and-Financial-Behavior-and-If-So-When.pdf>
11. [https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/oecd-infe-2023-international-survey-of-adult-financial-literacy\\_8ce94e2c/56003a32-en.pdf](https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/oecd-infe-2023-international-survey-of-adult-financial-literacy_8ce94e2c/56003a32-en.pdf)
12. Faria, L. H. L., Medeiros, R. L., & Lyrio, F. M. (2025). Impacts of financial illiteracy on socioeconomic well-being: A narrative literature review. RGSA – Journal of Social and Environmental Management, 19(5), Page 1-20.