

COMP3423 Project

© COMP3423 – 2023 Group 23

NIYITEGEKA Berwa Aime Noel - 21104645D
JIANG Guanlin - 21093962D
LI Tong - 21101988D
Liu Yuzhou - 21100602D
Yiu Pun Cham - 21089475D

Outline

- 1 - Requirements**
- 2 - Software Usage & UI Design**
- 3 - Testing**

Requirements

< Functional / Non-functional >

How do we collect the requirements?

Semi-Structured Interview

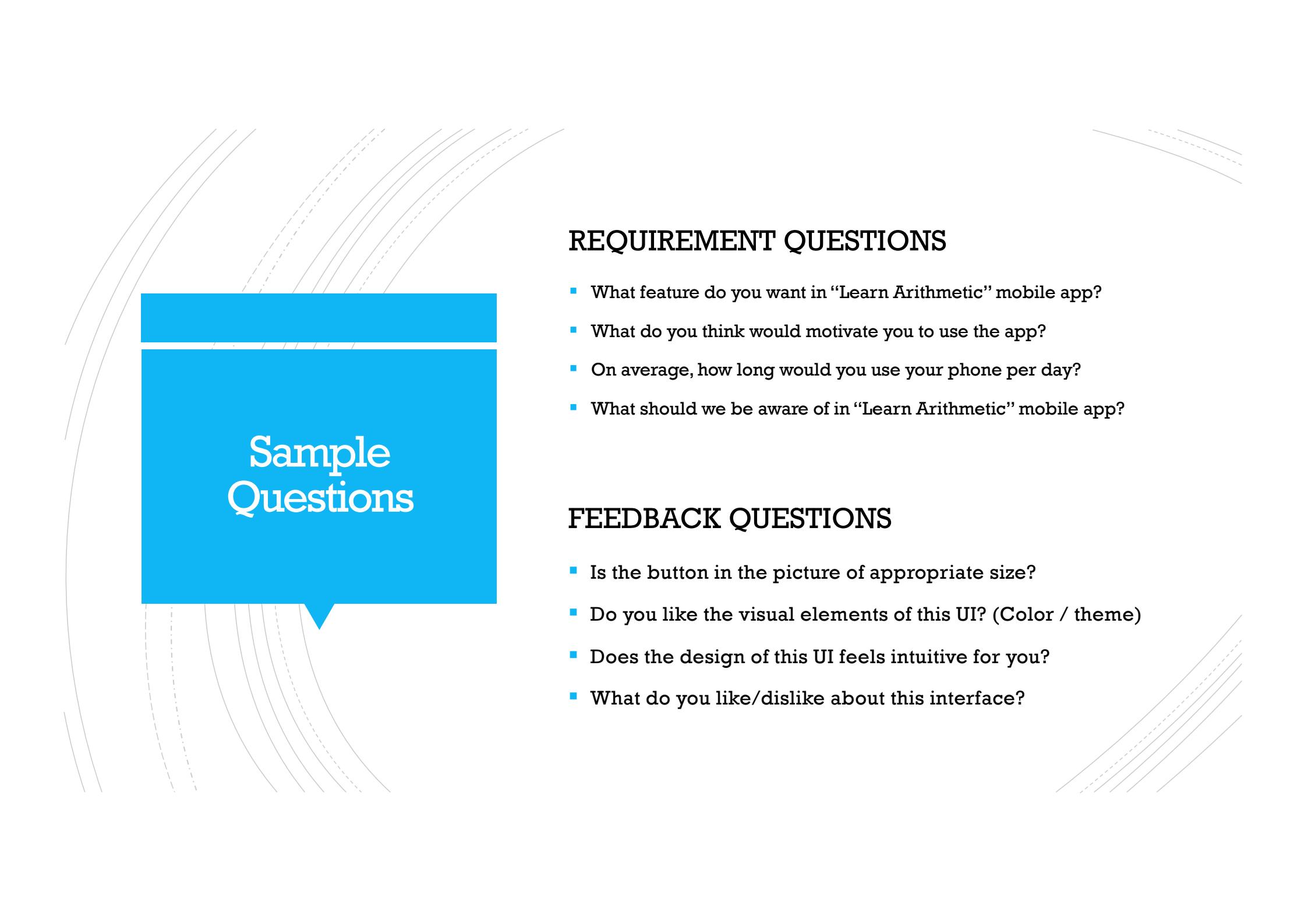
- Formal Interview with a set of open-ended question

Questions are split into 2 category

- Category 1: Requirement questions
- Category 2: Feedback questions

Sample Size

- Parent: 4
- Children: 4
- Teacher: 2
- Other: 1



Sample Questions

REQUIREMENT QUESTIONS

- What feature do you want in “Learn Arithmetic” mobile app?
- What do you think would motivate you to use the app?
- On average, how long would you use your phone per day?
- What should we be aware of in “Learn Arithmetic” mobile app?

FEEDBACK QUESTIONS

- Is the button in the picture of appropriate size?
- Do you like the visual elements of this UI? (Color / theme)
- Does the design of this UI feels intuitive for you?
- What do you like/dislike about this interface?

Children

Functional REQ

- The children shall learn mathematical arithmetic operations through the application, including addition, deduction, multiplication and division.
- The children shall learn arithmetic through interactive games and video tutorials.
- The children shall track their achievement and reward features.
- The children should be able to share and socialize through the application.
- The children should be able to do revision through the application.
- The children should be able to chat with the teacher when they meet any problem during their study process.

Non-functional REQ

- The system shall provide an interactive experience and provide real time response and feedback based on user interaction.
- The system shall respond to input within 1 second to provide a responsive user experience.
- The system shall provide educational content and promote the habit of learning to children.
- The system shall be designed with appealing visual elements and feedback to provide an engaging experience to children.
- The system shall protect the privacy of children's personal information from unauthorized access.
- The system should allow usage without internet access.

Teachers

Functional REQ

- Teachers should be able to set up custom questions for the activities through a question preparation screen.
- Teachers shall track progress of the class.
- Teachers shall be able to communicate to the children and parents through announcements and messages through the application.

Non-functional REQ

- The system shall generate constructive statistics for teaching purposes.
- The system shall have comprehensive user support with user manual and technical staff.
- The system shall provide security measures to protect personal data and access to administrative functions.

Parents

Functional REQ

- The parents shall track the performance of arithmetic of their children.
- The parents shall communicate with childrens' teacher through the application.
- The parents should be able to limit the weekly play time of their children to prevent addiction with electronic devices.

Non-functional REQ

- The system shall demonstrate uninterrupted functionality and data integrity over 5 hours of usage.
- The system shall provide cross-platform support, ensuring compatibility across major operating systems.
- The system shall ensure the content is age appropriate through monitoring content editing privileges.

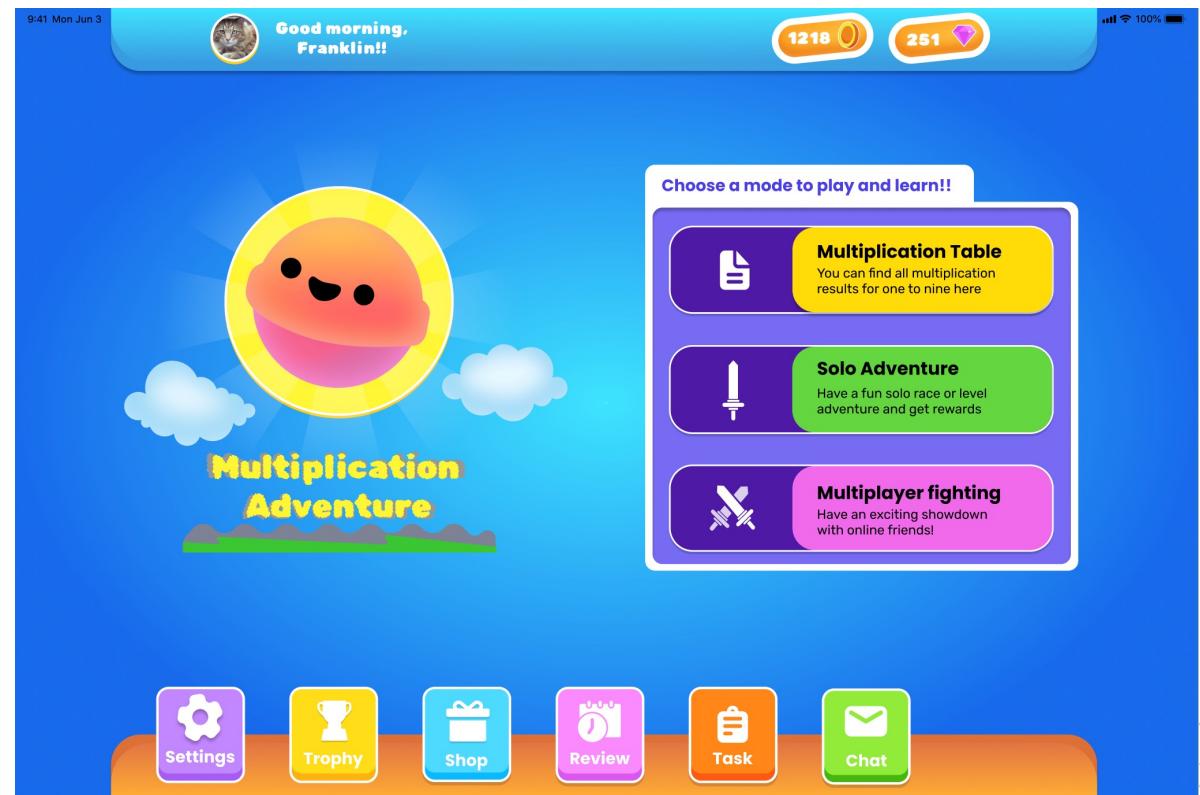
Software Usage & UI Design

Prototype Link: [Here](#)

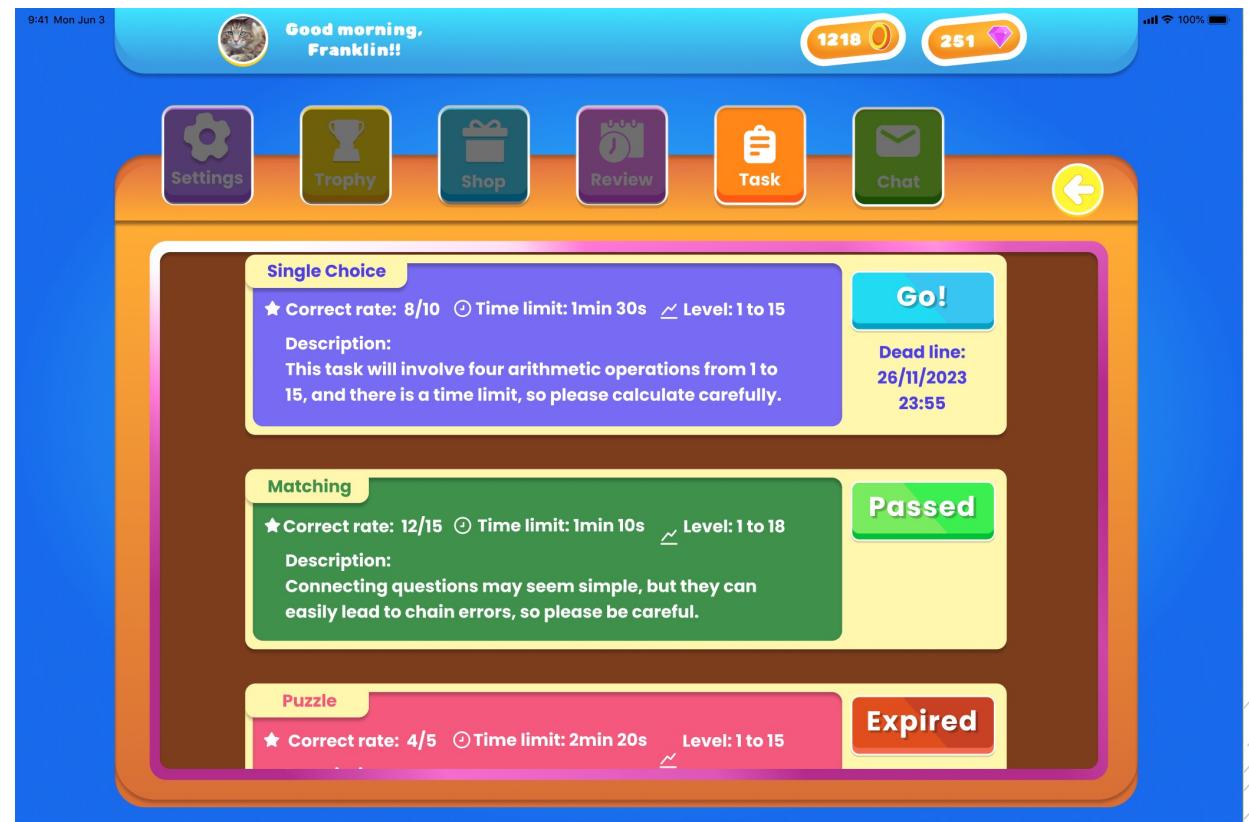


Children

Home Interface



Task Interface



Chat Interface



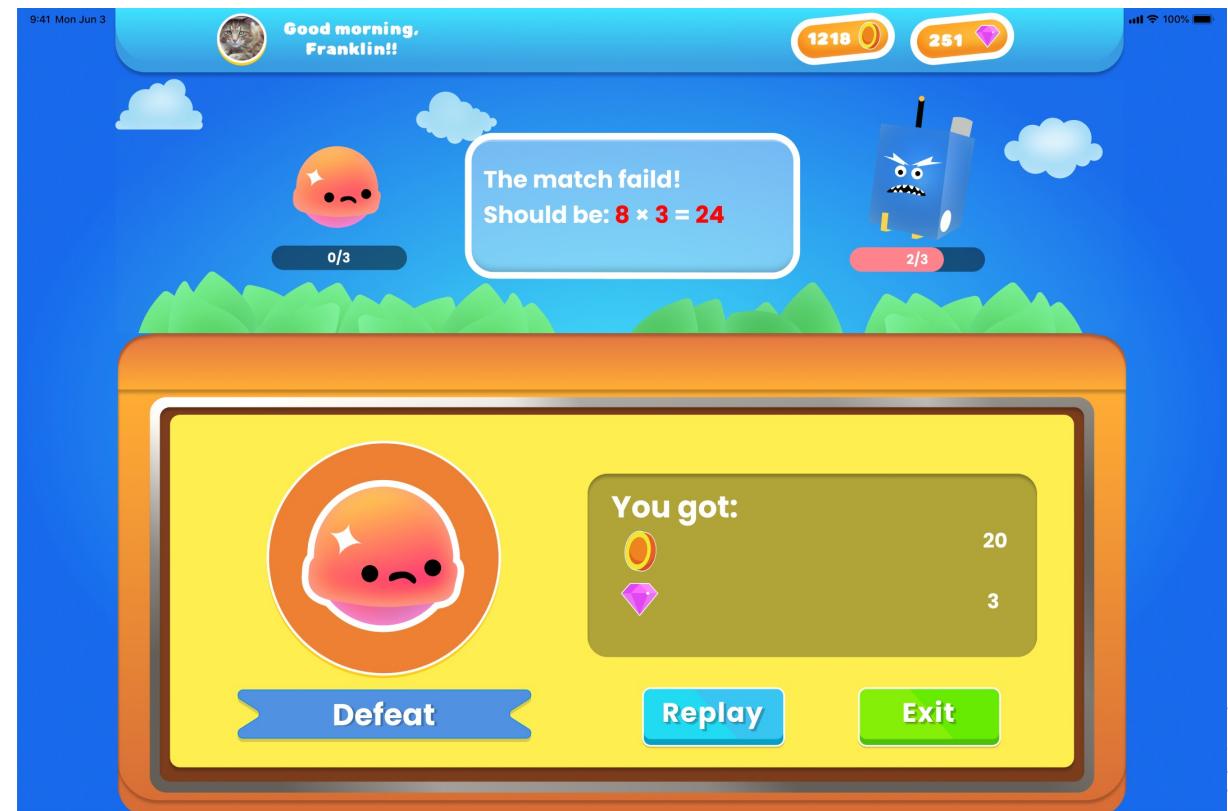
Competition Interface



Shop Interface



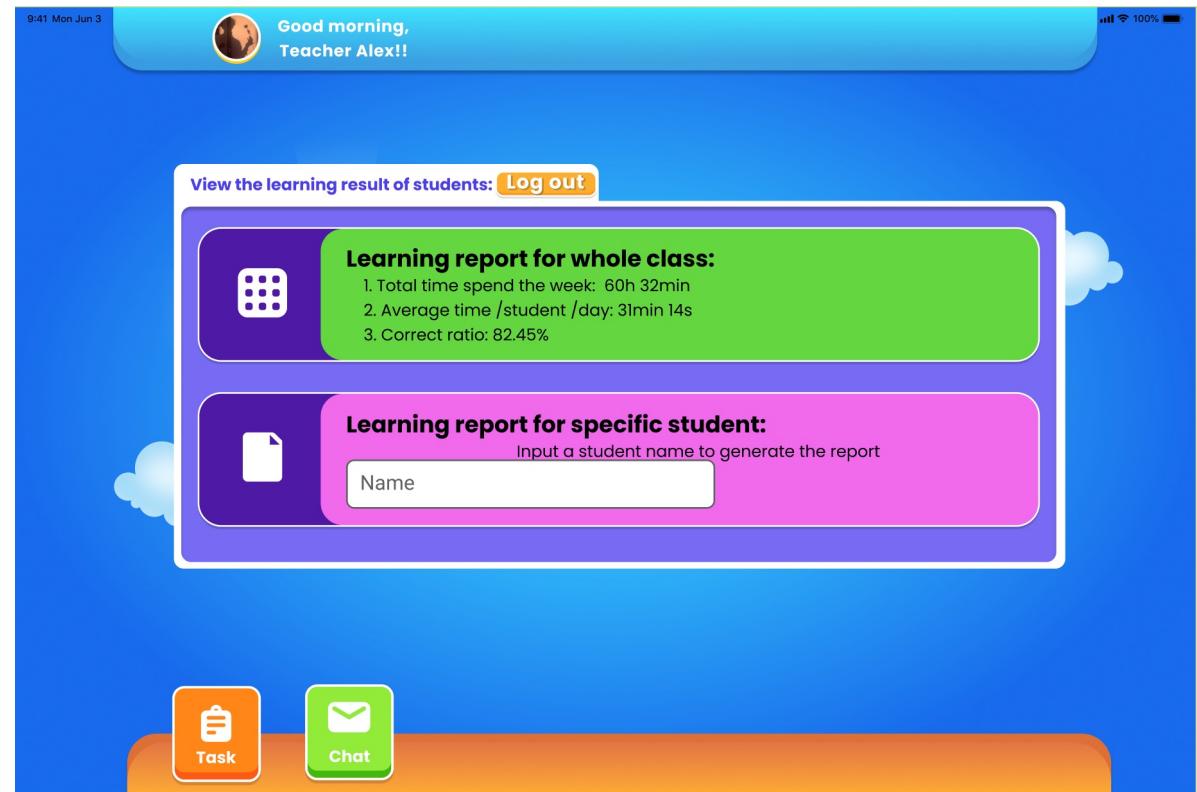
Award Interface



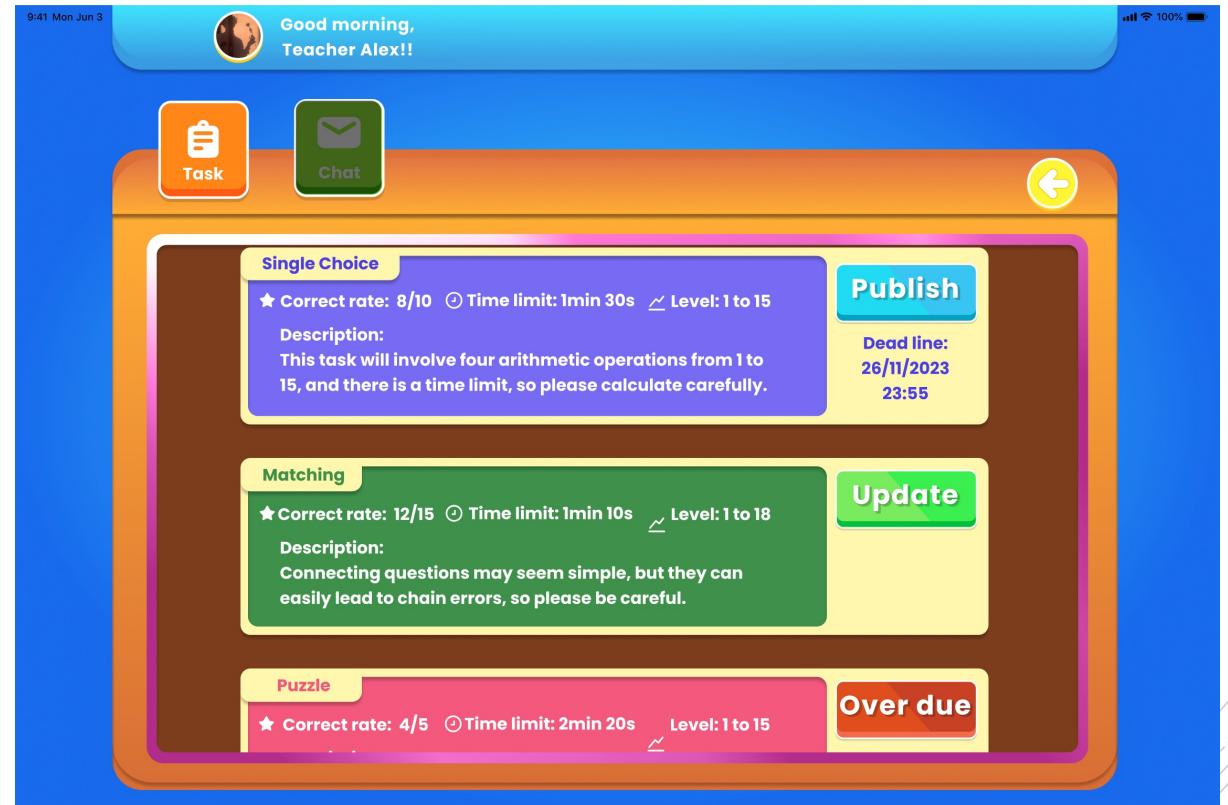


Teacher

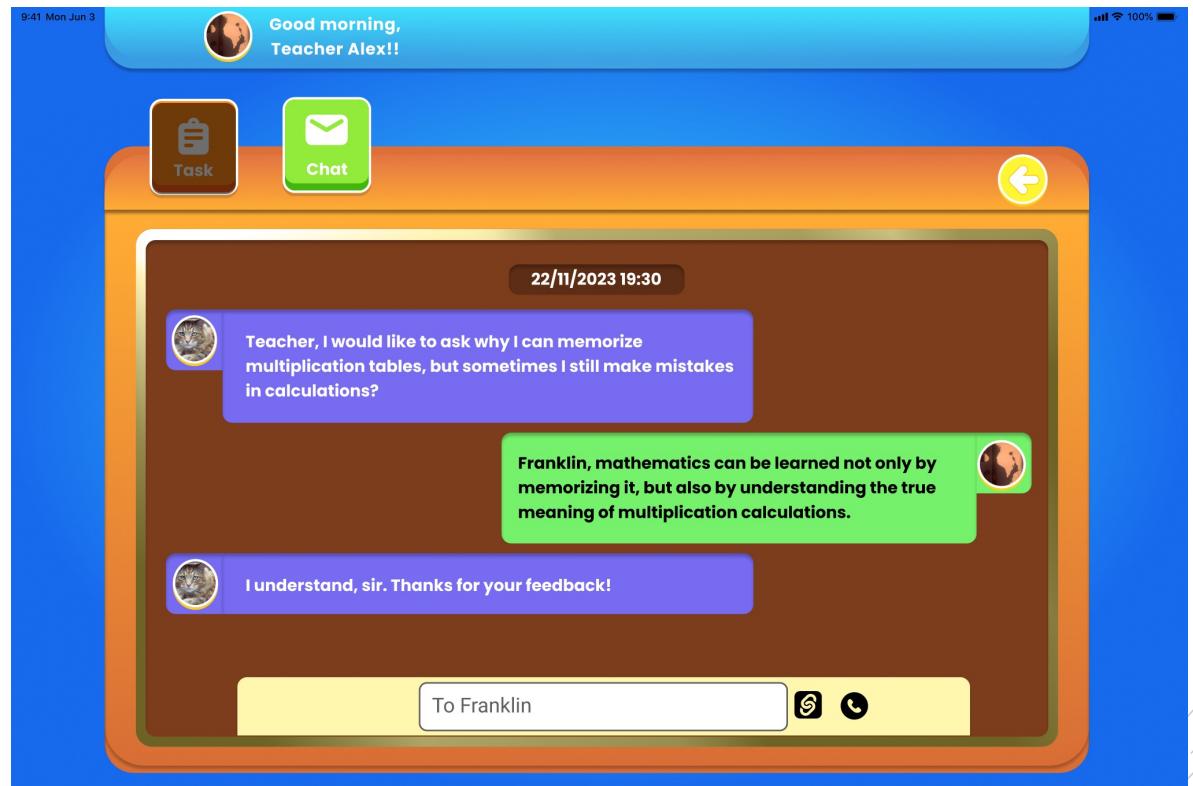
Report & Search Interface

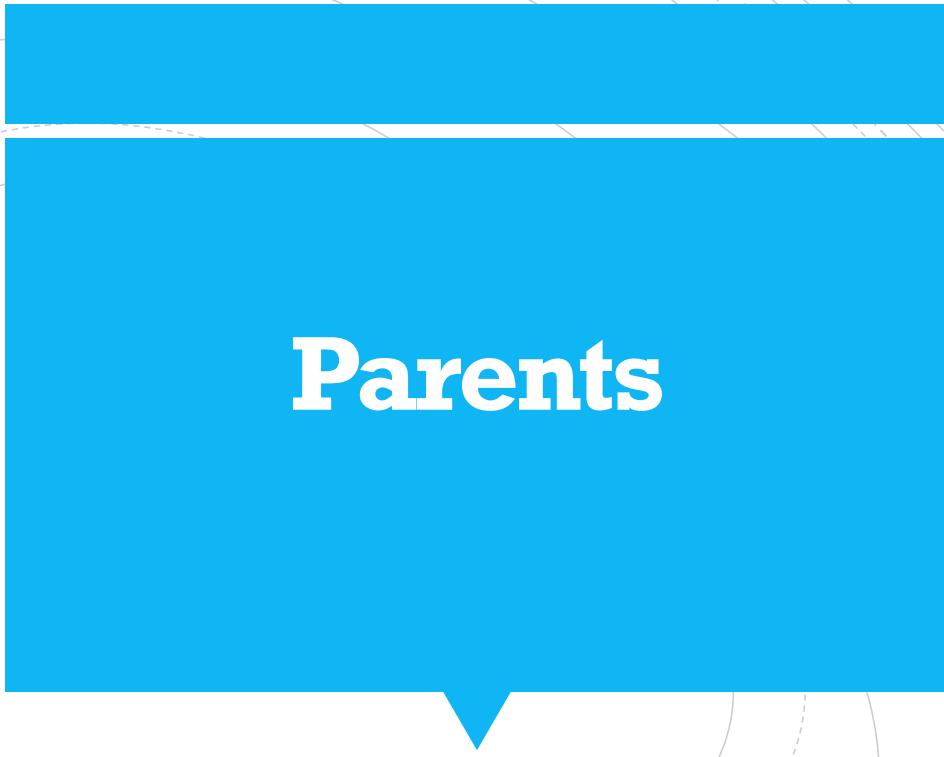


Tasks Controller Interface



Chat interface

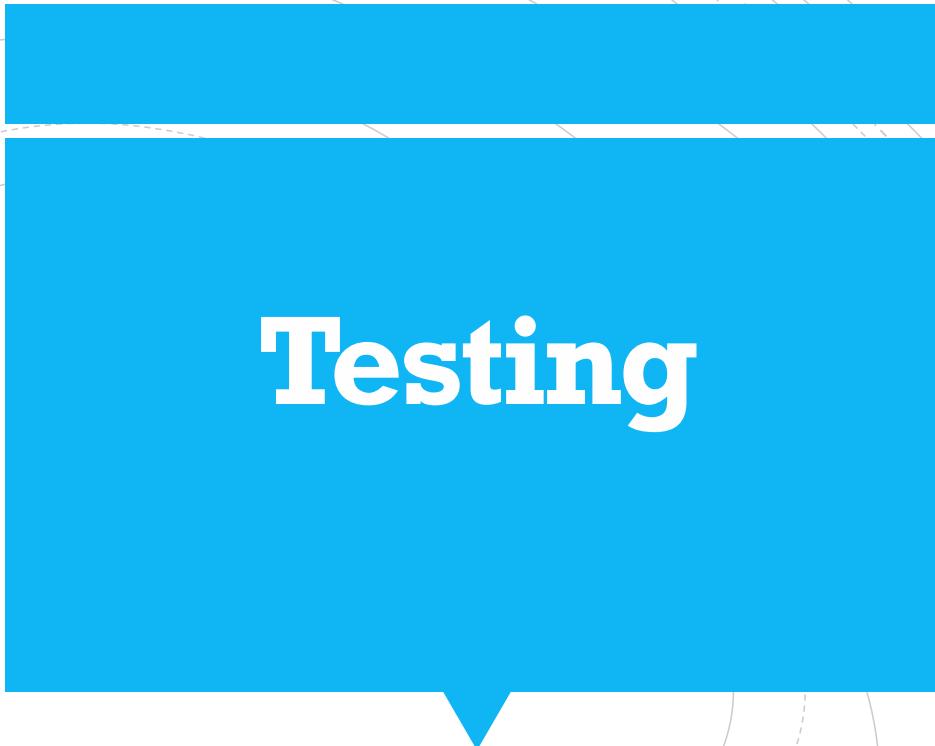




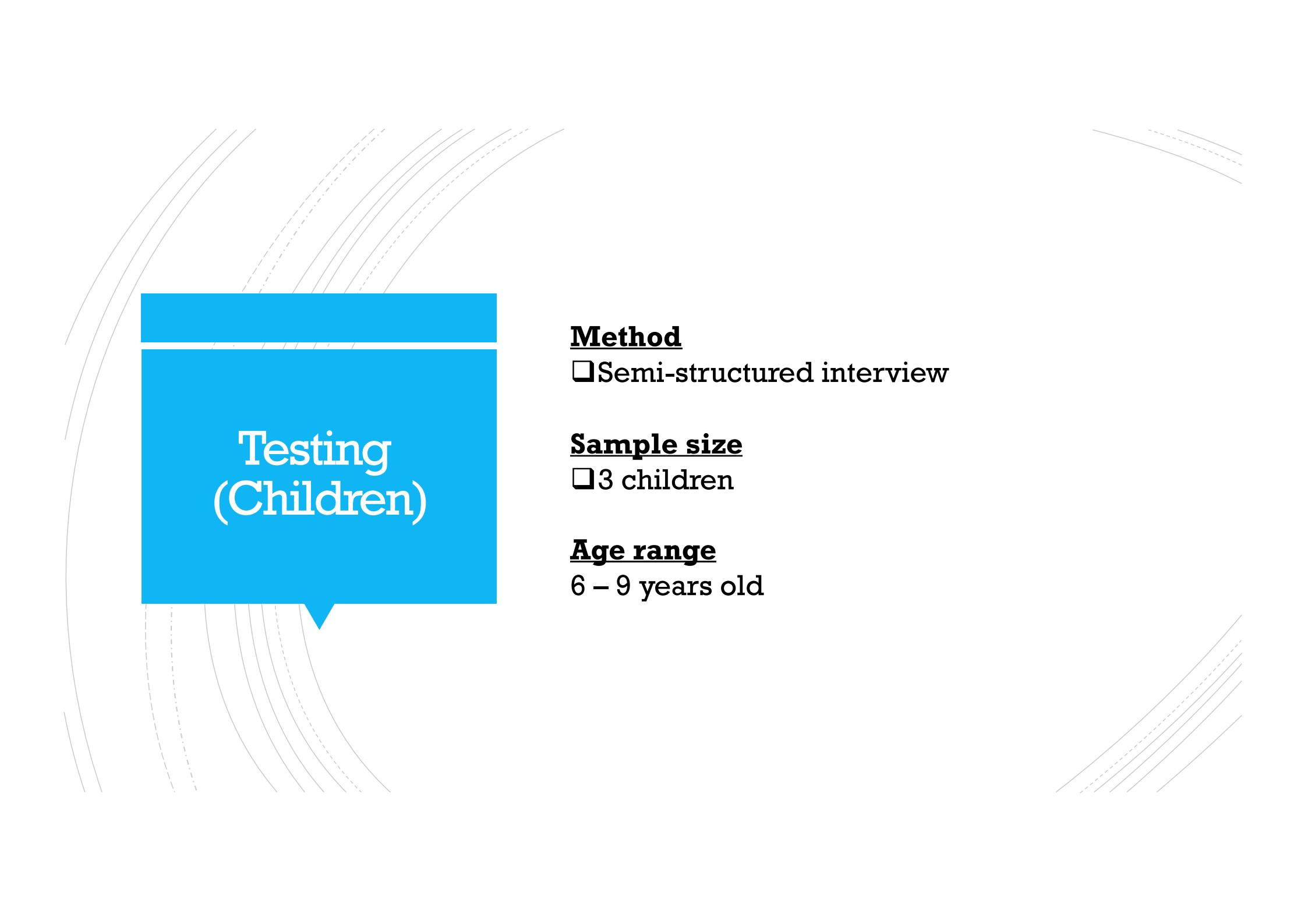
Parents

Usage Report Interface





Testing



Testing (Children)

Method

Semi-structured interview

Sample size

3 children

Age range

6 – 9 years old

Test Form Design (Children)

Fun

Did you have fun completing the challenges?

OK	Not at all	A lot
2	1	0

Content appropriateness

How difficult did you find the challenges?

Challenging	Appropriate	Not at all
1	1	1

Test Form Design (Children)

Interactivity

Did you find the app boring?

Very boring	Okay	Not boring at all
2	1	0

What specific functions or features of the game did you enjoy the most?

Matching puzzle

3

Would you like to come back and play this game again?

Yes	No
2	1

Testing (Parents & Teachers)

Method

Questionnaire

Sample size

4 parents

4 teachers

Test Form Design (Parent & Teacher)

Form Link: forms.gle/UtgzY8P44E7Kk8kr8

Learn Arithmetic Testing Form

Testing Form for Learn Arithmetic Mobile APP

[Sign in to Google](#) to save your progress. [Learn more](#)

* Indicates required question

Are you parent or teacher? *

Parent

Teacher

How user-friendly was the app? *

5 (very user-friendly)

4

3

2

1

How would you rate the appropriateness of the game's content for its intended audience? *

5

4

3

2

1

Which are functions are you liked most? (If multiple, list them) *

Your answer

How do you think this game will affect the children? *

Positive

No impact

Negative

Why? (If affected)

Your answer

Overall, how do you rate this app? *

5

4

3

2

1

Do you have some feedback or suggestion to us?

Your answer

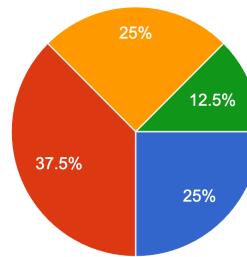
Submit

Clear form

Test Results

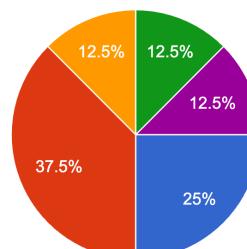
How would you rate the appropriateness of the game's content for its intended audience?

8 responses



How user-friendly was the app?

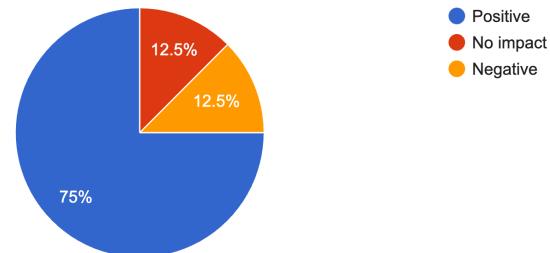
8 responses



Test Results

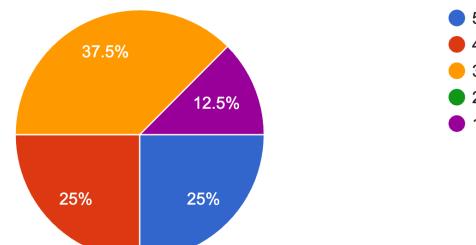
How do you think this game will affect the children?

8 responses



Overall, how do you rate this app?

8 responses



Test Results

Which are functions are you liked most? (If multiple, list them)

8 responses

Usage report

Student Reporting

I like the stuff that, the app can show my child performance clearly.

Class performance, task distribution

Announcement

I can easily post task to my students.

追踪小孩游戏时长的功能

multiplication table, so trivial

Do you have some feedback or suggestion to us?

8 responses

Add a function to check which operation the kid is struggling with

N/A

I think it is to make it playable.

Add more features

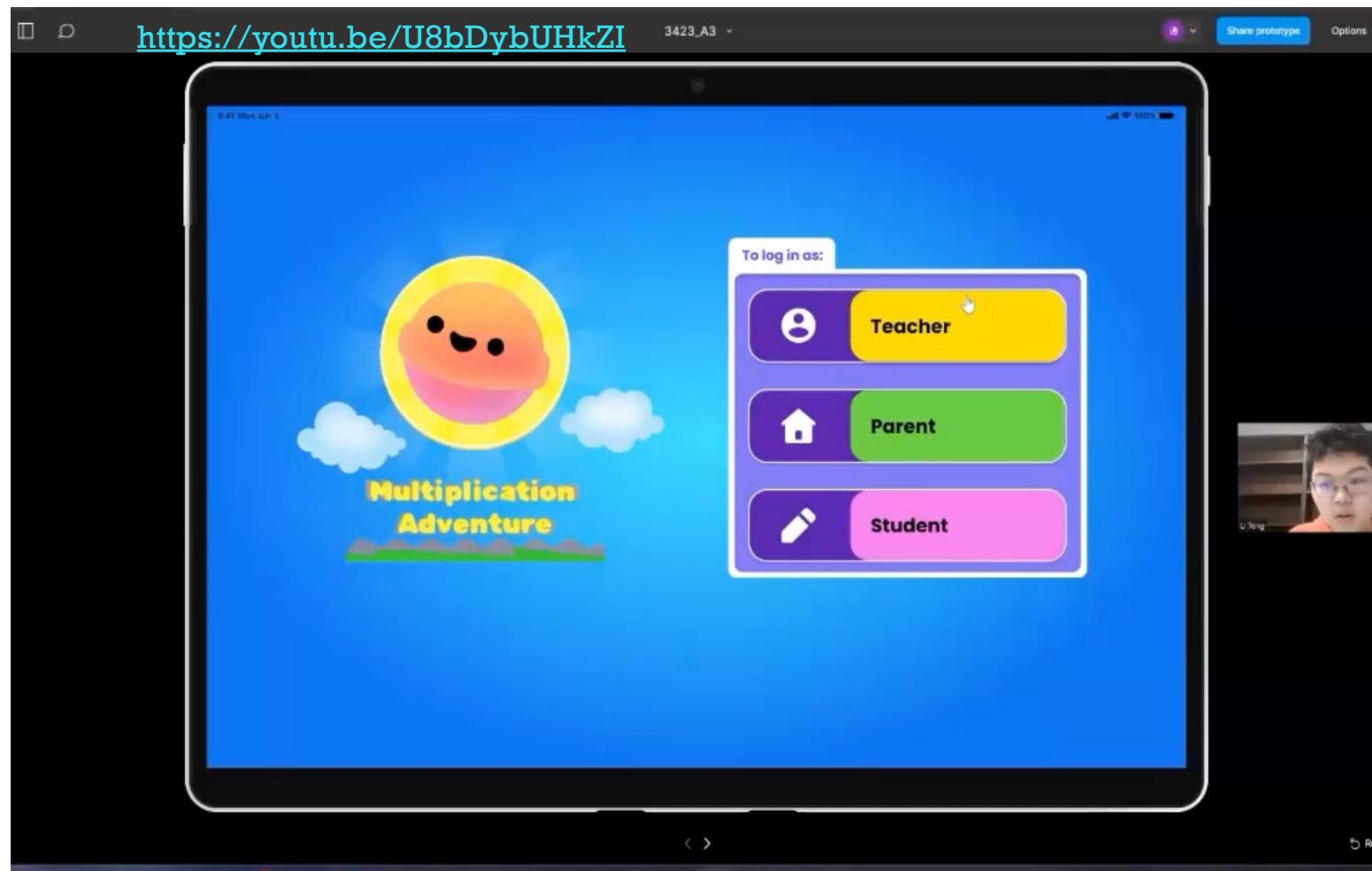
Make it more interesting

Please let me be able to chat with parent

我觉得可以有一些纯联练习的模式，而不是过分玩游戏。

So nice, cannot be better!

Demo Video





THANKS