



Parmis Meshgi August 2021

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# OO Recap

Problem Space

How Might We

Secondary Research

Interview Guide

Persona

**Empathy Map** 



# Problem Space

# Online Education for 8-12 year old children in developing countries

The pandemic has dramatically changed education around the world, with more than 1.2 billion children in 186 countries affected by school closures. And insufficient hospitals and low vaccination rates in countries like Iran have caused many schools to shut down completely. Elementary-age children (ages 7–12) have had to learn how to work with computers and video conferencing applications and cope with new, remote learning methods. While some believe the unplanned and rapid move to online learning will result in poor educational experiences and outcomes, others see the potential for a new hybrid model of education to emerge with significant benefits for developing countries.





# How Might We?

# V

#### **How Might We**

How might we facilitate
more effective and
sustainable online learning
experiences for students
and teachers in developing
countries?

- Have a narrowed user group that let you start thinking about the solution with more constraints.
- Have a location constraint for your problem to start brainstorming with
- uses positive adjectives

#### **How Might We**

facilitate online education for both students (between ages of 8 to 12) and their instructors in developing countries

How is this facilitation? What is the reason of it?

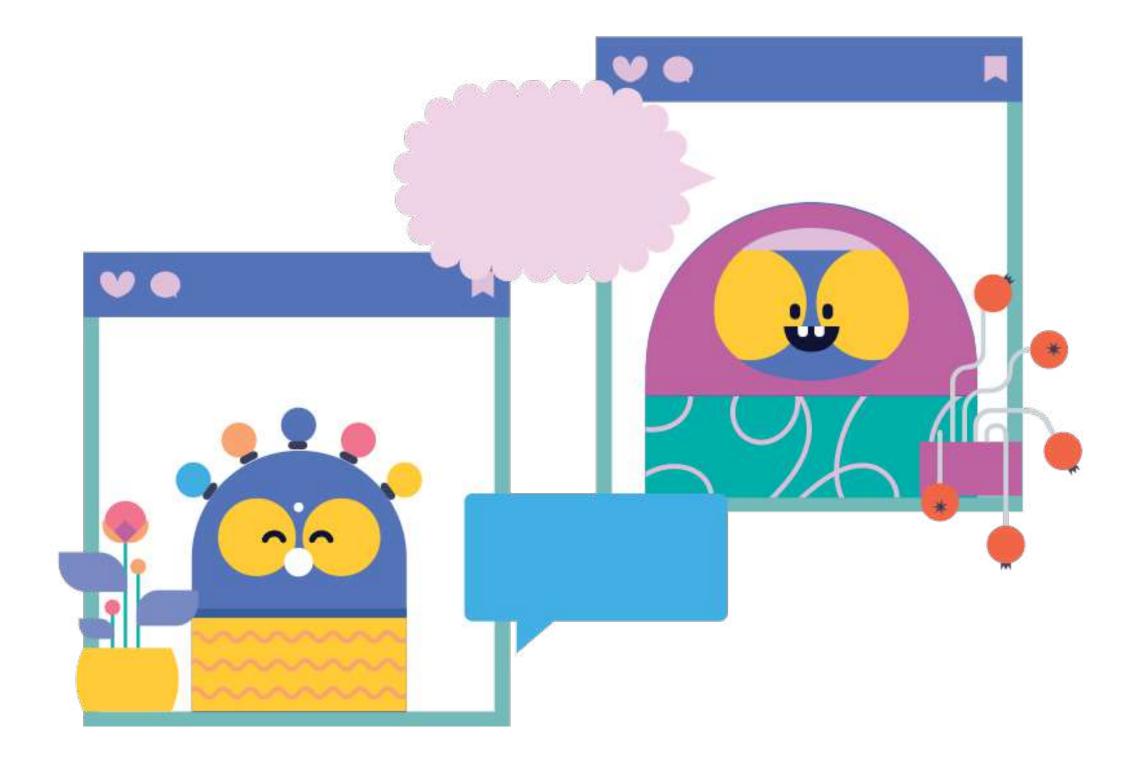
#### **How Might We**

help chidren between ages of 8 to 12 maintain their physical health and can participate efficiently in their classes?

- The user group is too wide for following a HMW
- There are 2 things that this
   HMW want to solve 1) physical
   health 2)effect participation

## User Centre Design

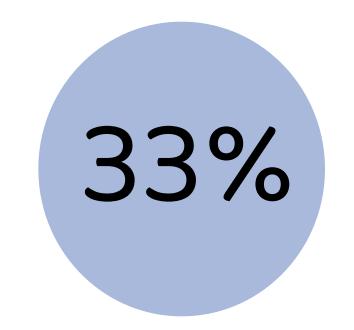
While a lot of teachers may think teaching online is easier and children are learning faster, learners have a different opinion.



Eduventures, Inc. (2006) found that about half of institutions and more than



of **employers** generally accept the high quality of online learning, but students' perceptions differ. Only about



of prospective **online students** said that they perceive the quality of online education to be "as good as or better than" face-to-face education.

# Interview Guide

#### **Opening**

- What social medias do you use?
- How much time do you spend in social medias?
- What is your favorite application?
- Do you exercise?
- What do you do in your free time?
- How old are you?
- What is your favorite subject in school?

#### **General Questions**

- What do you expect from an online learning platform?
- Do you prefer online or offline?
- How long have you been online schooled?
- Did your GPA change after online learning?
- How do you see online classes?
- How did online schooling effected your relationship between your friends?
- When do you think you can go back to school?

#### **Specific Questions**

- What is biggest problem for you in online schools?
- What platform do you like the best for your online classes? Why?
- How teacher-student relationship has changed after online education?
- How do you send your homeworks to your teacher?

#### Wrap Up

- What would you change about the platform that you are using for online learning?
- What is the worst moment of online learning?
- What features would you add to your existing online learning platform?
- What do you like to have in your online classes?



#### Name: Hanna Sheller

Age: 10 Years old

Gender: Female

Country: Iran

Language: Persian

Devices: Her mother's phone Family: Lives wit her mom and dad

"I don't like online learning, because I have to sit behind the computer all day, and working with technology is very confusing for me too."

#### Bio

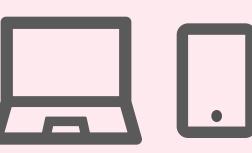
Hanna is a ten-year-old student who has been online schooled because of COVID. Her parents didn't let her use their cellphone before, but as all the classes are online she has to spend a lot of her time behind the computer or on a mobile device. She didn't know how to work with technology but she tried her best to learn it as fast as possible. She uses her cellphone for talking to her friends, participating in online classes, taking photos of her homework, and watching educational videos.

#### **Frutrations**

- I don't know what are the options under the video calling screen.

  (like share screen or annotate ...)
- I always lose the files that the teacher sends me after teaching a subject
- I don't know what is my homeworks and how should I do it!
- I spend a lot of time behind the laptop and I feel like I don't exercise enough
- I struggle with sending my homeworks to the teacher

#### **Touch points**



#### **Motivations**

Loves video calling with her friends

Wants to have the best grades in her class

Wants to be able to participate in her online classes

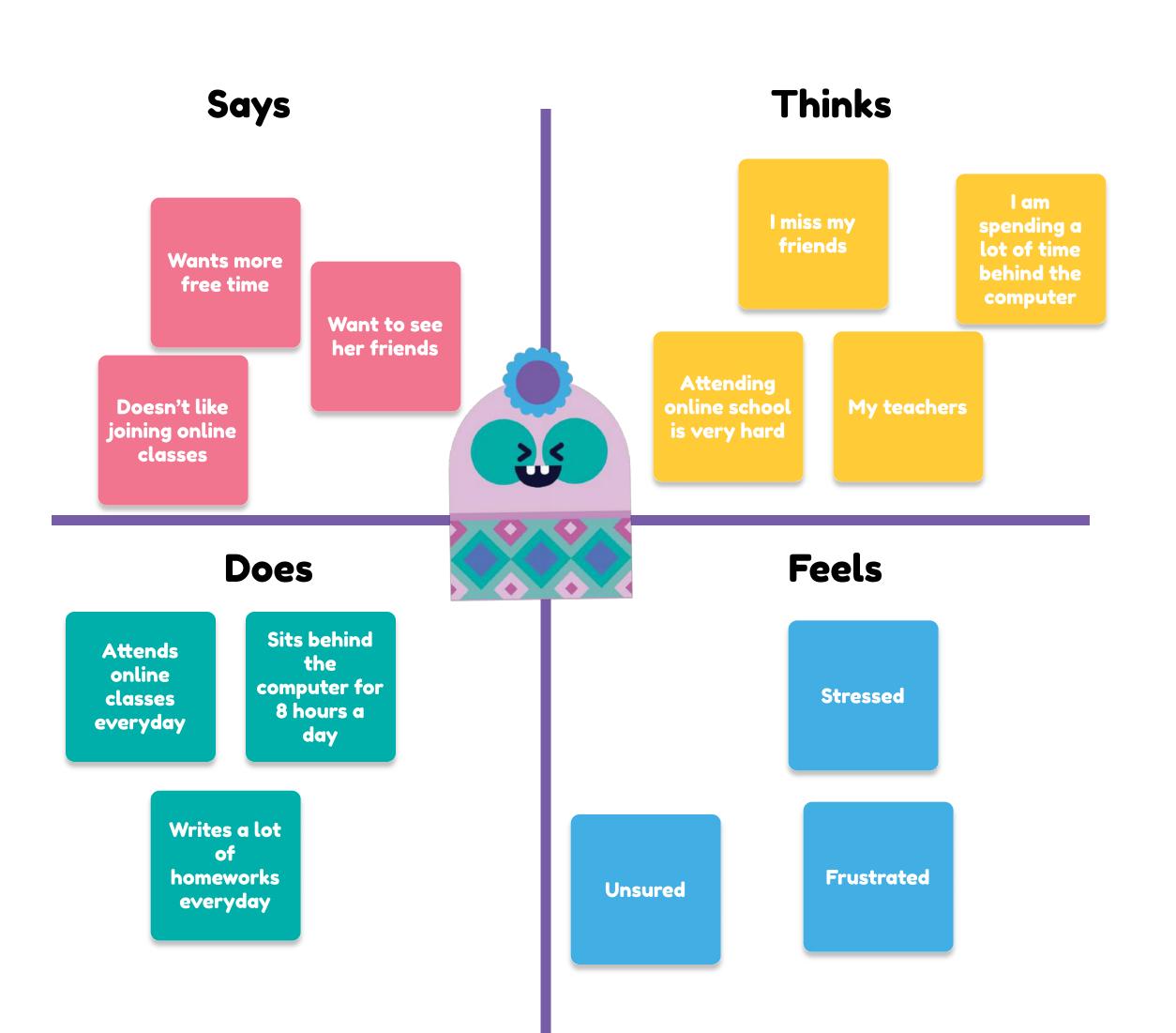
#### Personality

Out going
Enjoy Reading books
Competetive
Non Tech savvy

#### Goals

- To have an easy to work platform for participating in online classes
- To be able to upload my homeworks easily
- To be able to find the content that my teacher has thought today and download it
- To import my handwritten notes to an online platform next to my teacher's notes.

# Empathy Map





# 01 User Stories

**Epics** 

The Logic Behind



## Epic: Video calling/communication functionality



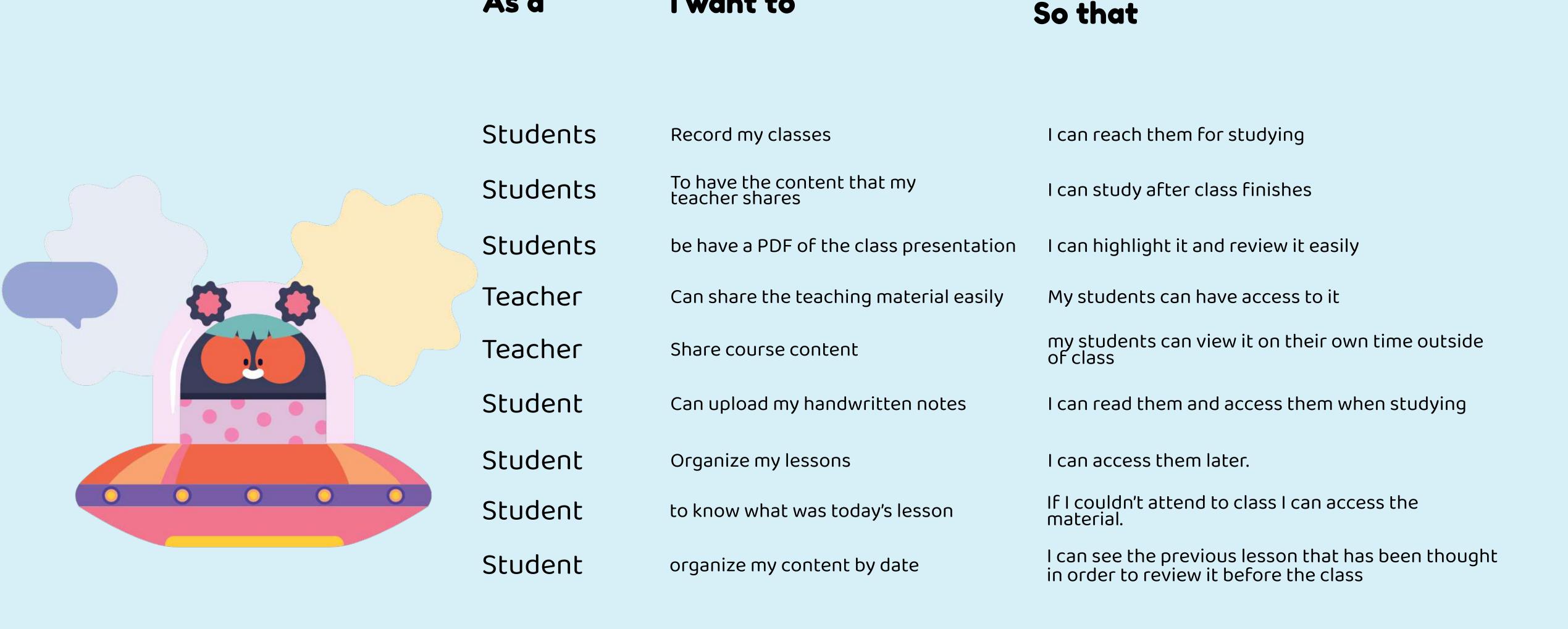
As a	I want to	So that
Students	Ask my questions in a reasonable time	I can clarify my learnings
Students	Participate meaningfully in the classes	Teacher can see how am I doing and gives me feedback
Parent	be able to communicate with my child's teacher	I know about the progress of her in school
Student	be able to communicate with my teacher	Ask them questions I might have about my school work or grades
Student	be able to talk with my classmates about the projects	We can do them together
Teacher	Reply to student messages	they feel I am reachable/accessible to them
Teacher	be able to talk with each student individually	I can ensure them that they are in the right track
Students	have a lot of animations and cool design in the app	to make the material and design more understanble

# Epic: Screen Time management

As a	I want to	So that
Student	Go through my lessons efficiently	I can spend less time using the computer for school
Student	know how much time I spent behind the computer	I can manage my time
Parent	be able to see the screen time	I can manage the screen time
Parent	Be able to lock the screen whenever my child reaches the internet usage time limit	so that I can control that she is not spending so much time on the phone
Parent	be able to see the screen time	I can remind my child to stand up and excercise
Teacher	make sure my students are not sitting behind the laptop all day	I know their physical health is not at risk
Teacher	I want to set a limit for my student's screen time	They won't sit behind their computers all day
Student	I want to help my students manage their screen time	they stay healty as they study online

## Epic: Class Material Management

As a



I want to

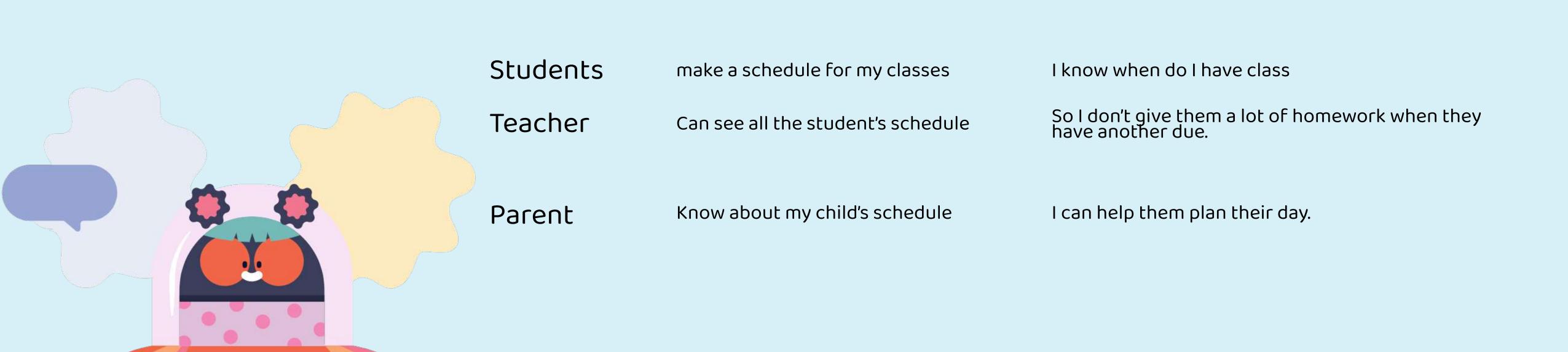
# Epic: Student Onboarding

As a	I want to	So that
Student	to be able to learn how to use the app quickly	I can get started learning
Student	have a easy to work application	I don't spend my time learning it
Student	Can upload my handwritten notes	I can read them and access them when studying
Student	Organize my lessons	I can access them later.
Student	Upload my homework easier	It can be done efficiently and before the deadline

# Epic: Managing Assignments

As a	I want to	So that
Teacher	Share course content	my students can view it on their own time outside of class
Teacher	Can see all the student's schedule	So I don't give them a lot of homework when they have another due.
Teacher	aggregating all the homeworks in the app	I can check them and see them in one place
Parent	Know about my child's schedule	I can help them plan their day.
Parent	Know about my daughter's homework	I can remind her about doing it and turning it in correctly and
Student	Upload my homework easier	It can be done efficiently and before the deadline

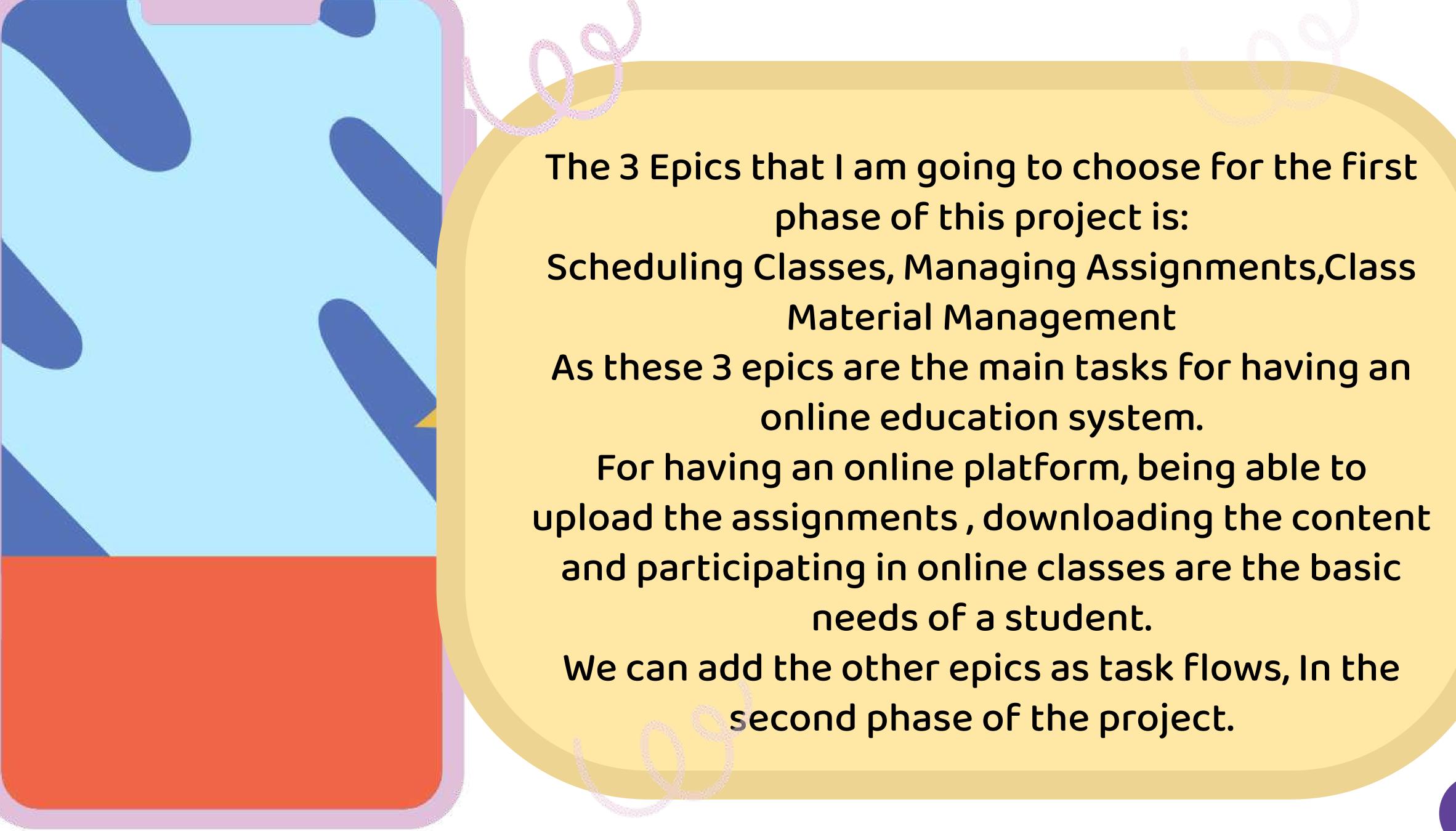
## Epic: Scheduling Classes



I want to

So that

As a



# 02 Task Flow



### Which is Which?

We have chosen 3 main epics for making our task flows.

As these 3 epics are all necessary but can't be included in a single task flow, I have made 3 different task flows for them.

Students are going enter each flow by clicking different tabs in the navigation bar.

There are 5 tabs in the navigation bar including:



Homepage First Task flow(Epic:Scheduling Classes)



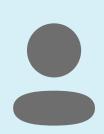
Content Second Task flow(EpicClass Material Management)



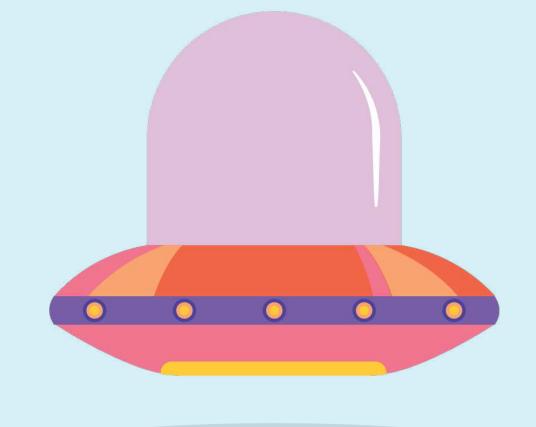
Break Time My Account

Homeworks Third Task flow(Epic Managing Assignments)

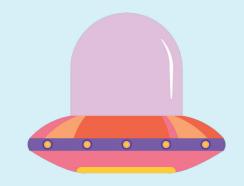


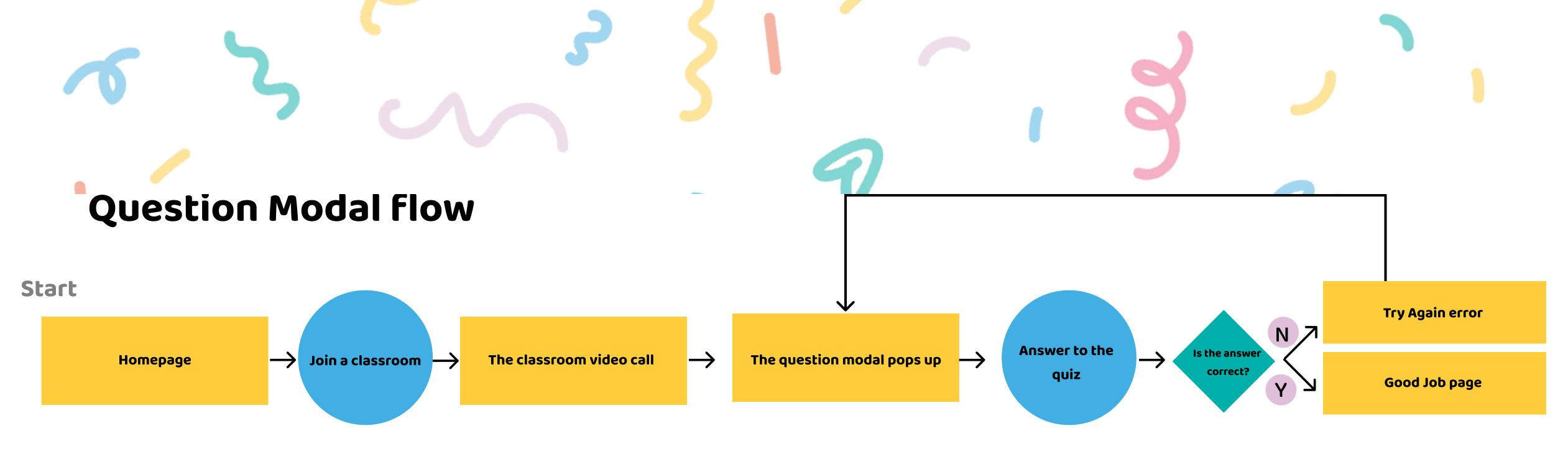


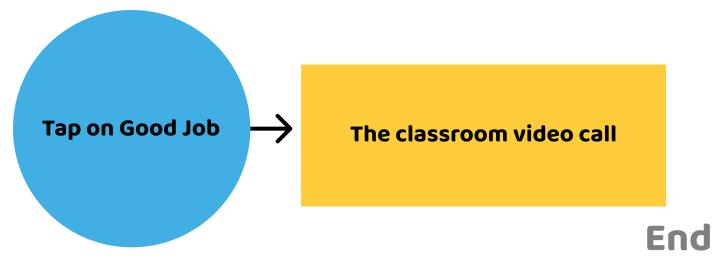
Having the breaktime and My account in the nav bar make us remember that there will be 2 other task flows in this application









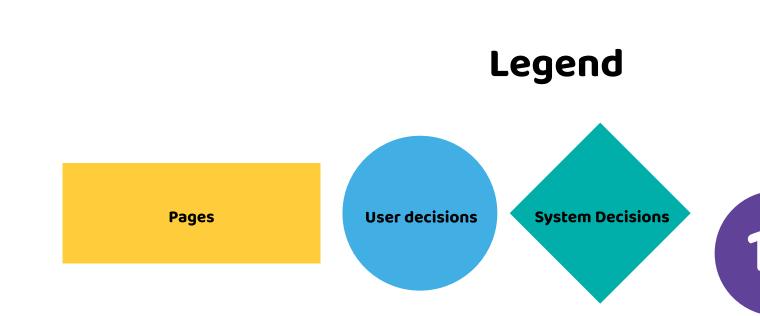


Persona: Teacher

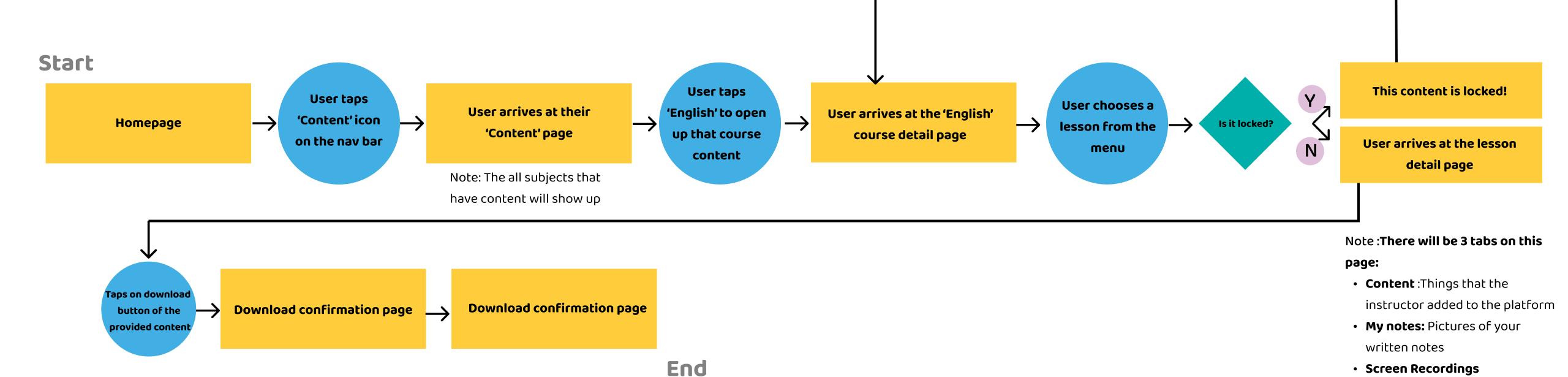
Epic:communication functionality

User Story: As a teacher I want to be able to know i

User Story: As a teacher I want to be able to know if my students understood the content that was taught in the class or not so that I can change the pace of the class according to my students knowledge



### Downloading Class content



Persona: Student

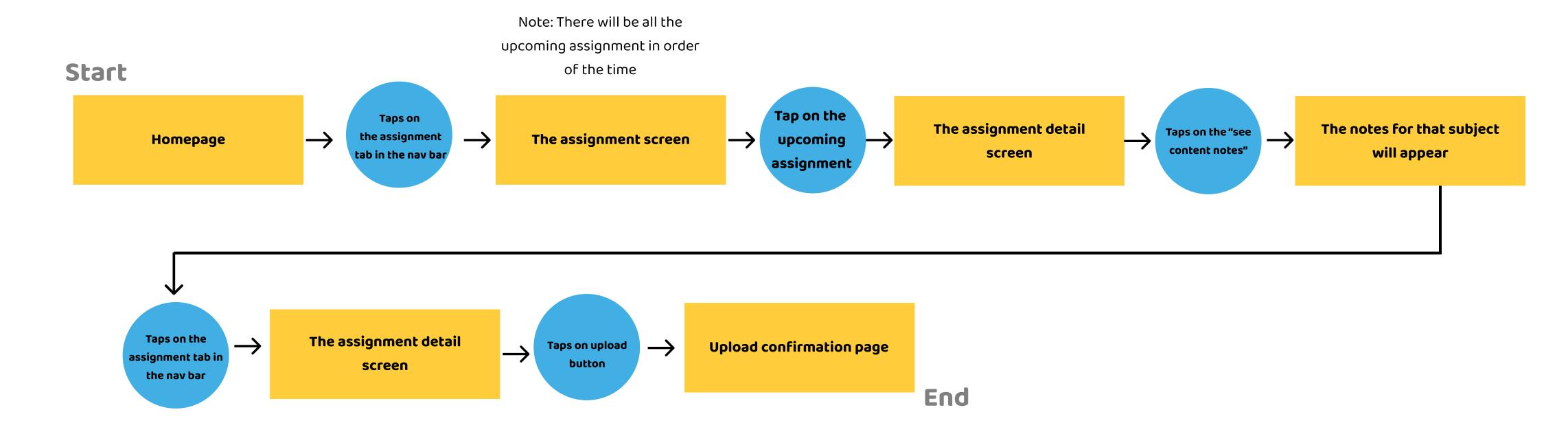
**Epic:Class Material Management** 

User Story: As a student I want to be able to be able to download the content that I have

learned so that I can review them after the class

# Pages User decisions System Decisions

## **Assignment Uploading**

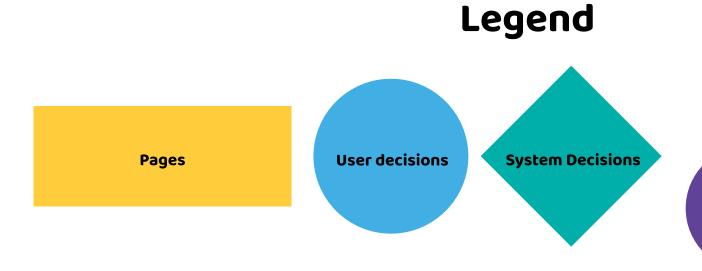


Persona: Student

**Epic:Managing Assignments** 

User Story: As a student I want to be able to make sure about my homework's description

so that I can get a good grade in my classes



Design For Kids
UI Inspirations



## Have you ordered happy meal recently?

According to the Jean Piaget, kids' cognitive ability to reason, infer, and make connections is still developing. That development happens in different stages:

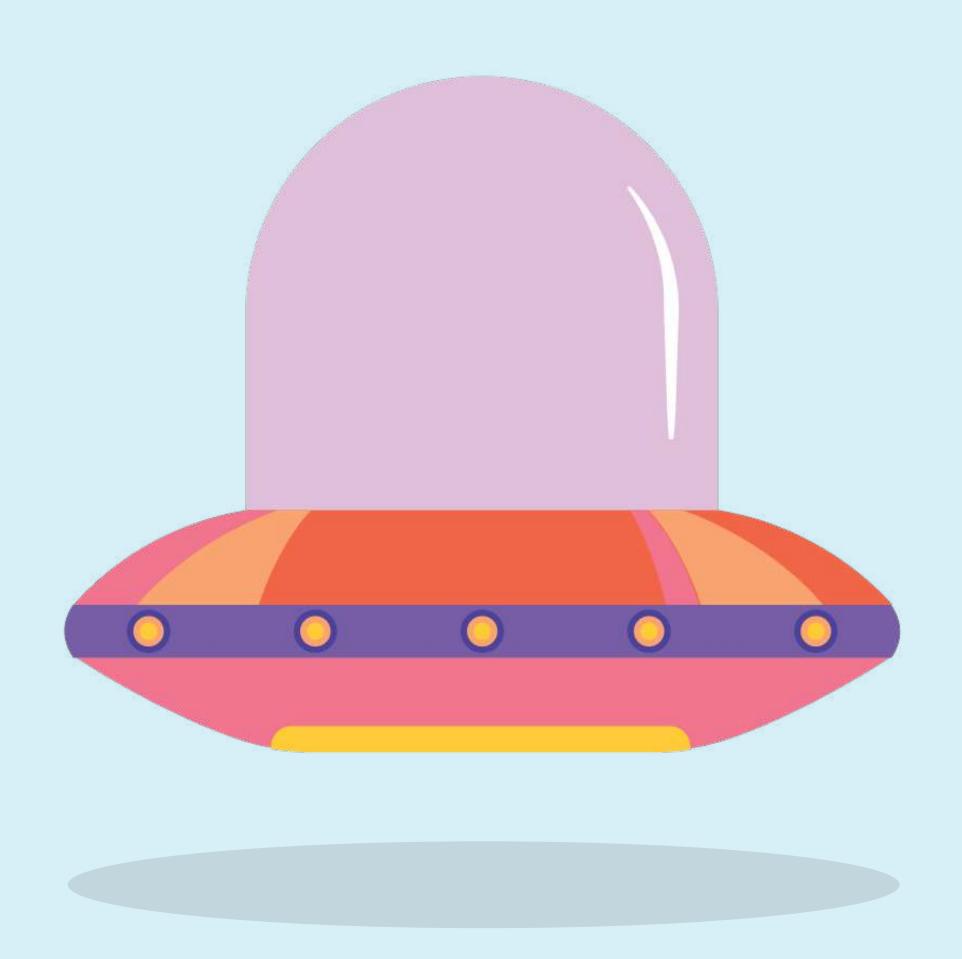
**The preoperational stage**: children (between the ages of 2 and 7) can think in terms of symbols, but they aren't yet able to effectively take other people's perspectives. Language skills are still developing.

The concrete operational stage: between the ages of 7 and 11, kids learn how to use logic to make inferences and reason about the world.

In both stages, other key cognitive capacities are also immature: **the theory of mind** (understanding the intentions and emotions of others),

cognitive flexibility (processing conflicting information and switching perspectives), and

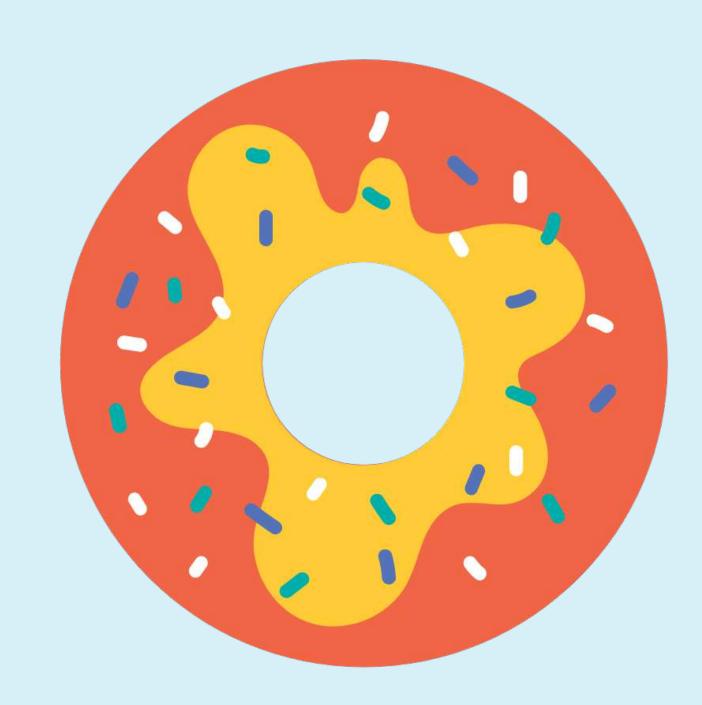
executive function (planning and monitoring their own behaviors).



## Application design for kids

Websites and apps should consider kids' **cognitive-development** stage in order to best support their **goals**, depending on the **target age range**. Here are five design recommendations:

- 1. Give kids clear and specific instructions by stating the goal of a task and how to achieve it.
- 2. Instructions should be tailored to the kids' level of understanding.
- 3. **Use existing mental models** and knowledge about the world to help kids accomplish tasks.
- 4. Reduce cognitive load by designing self-explanatory interfaces and preventing possible errors.
- 5. Instructions should be clear and specific, but not too prescriptive.



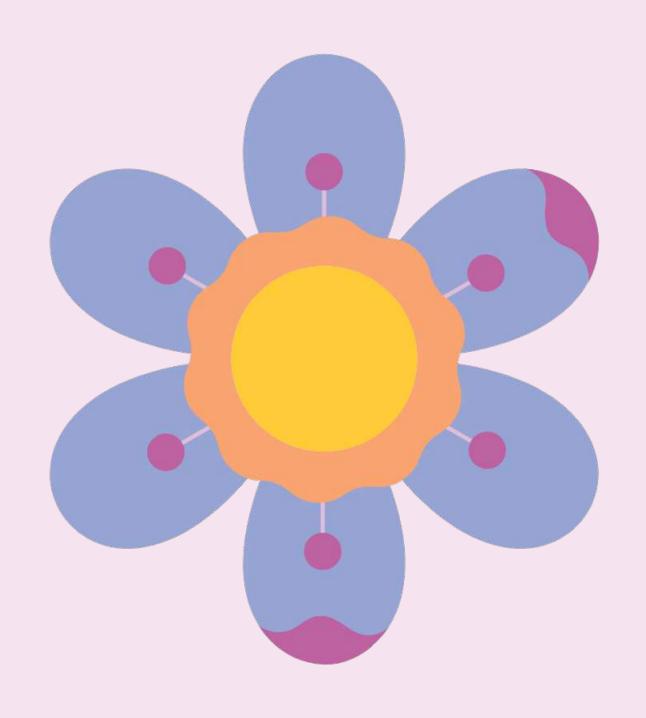
## How to find inspirations?

As Designing for kids is a unique way of designing, it is better to find our **inspirations** from some **kid-friendly** applications.

I have gathered some UI inspirations for each page of the task flows to get familiar with designing for kids and know which application is easier for my end user.

As we can follow our Persona's most used apps to know where we can find inspirations. For **kids**, it is **different**. They haven't spent a lot of time on their phones and are **not familiar** with some features like swiping or tinder swiping.

So we have to keep everything linear and simple as possible.



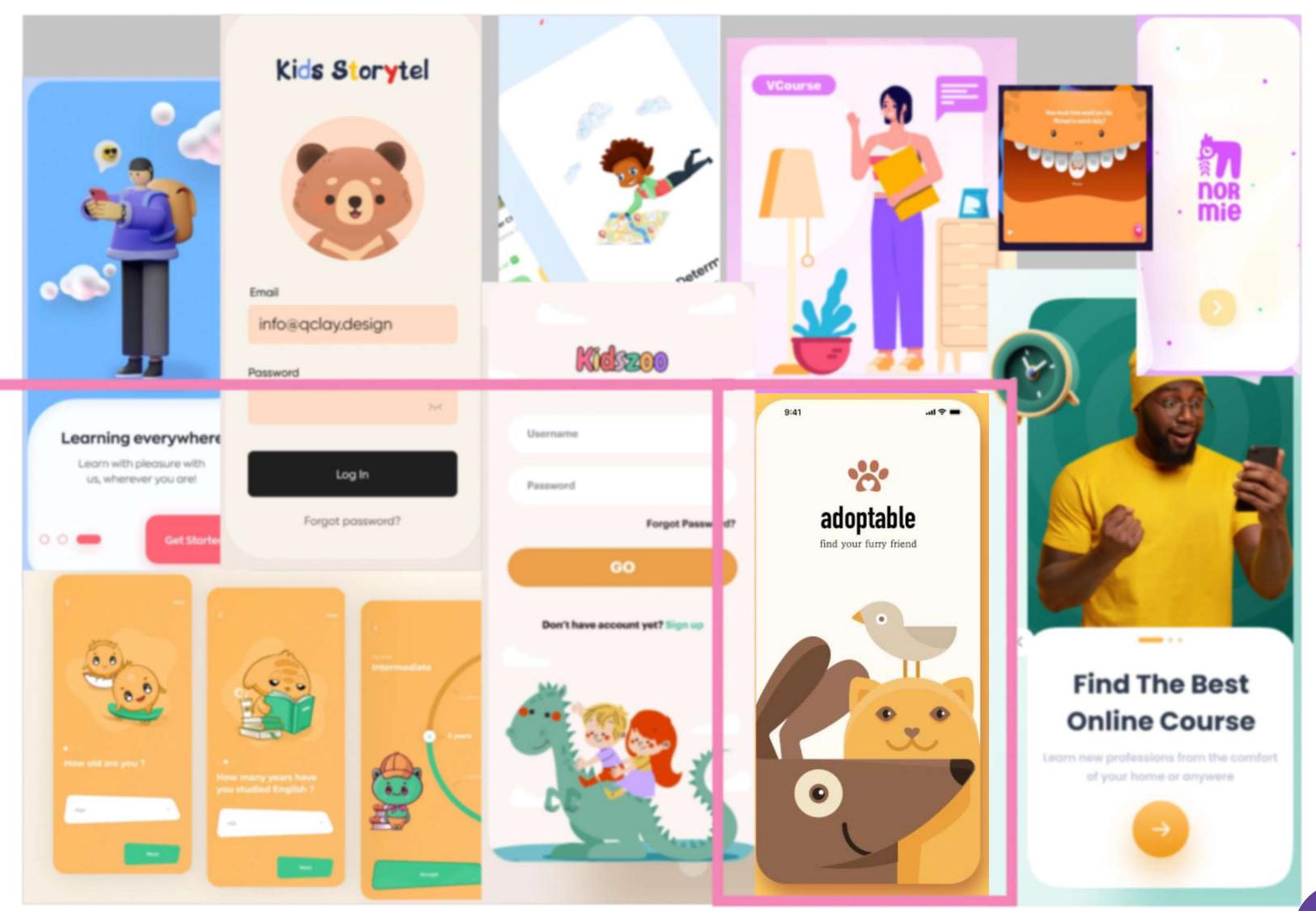
#### Onboarding and login Page

As our users are kids, we want to keep the first page very simple and to the point.

We don't want to confuse childs with a lot of options.

Maybe adding a picture on the bottom of the page that is not very busy will encourage them to use the application, But we don't want to include a big picture with bright colors to distract them from the main task.



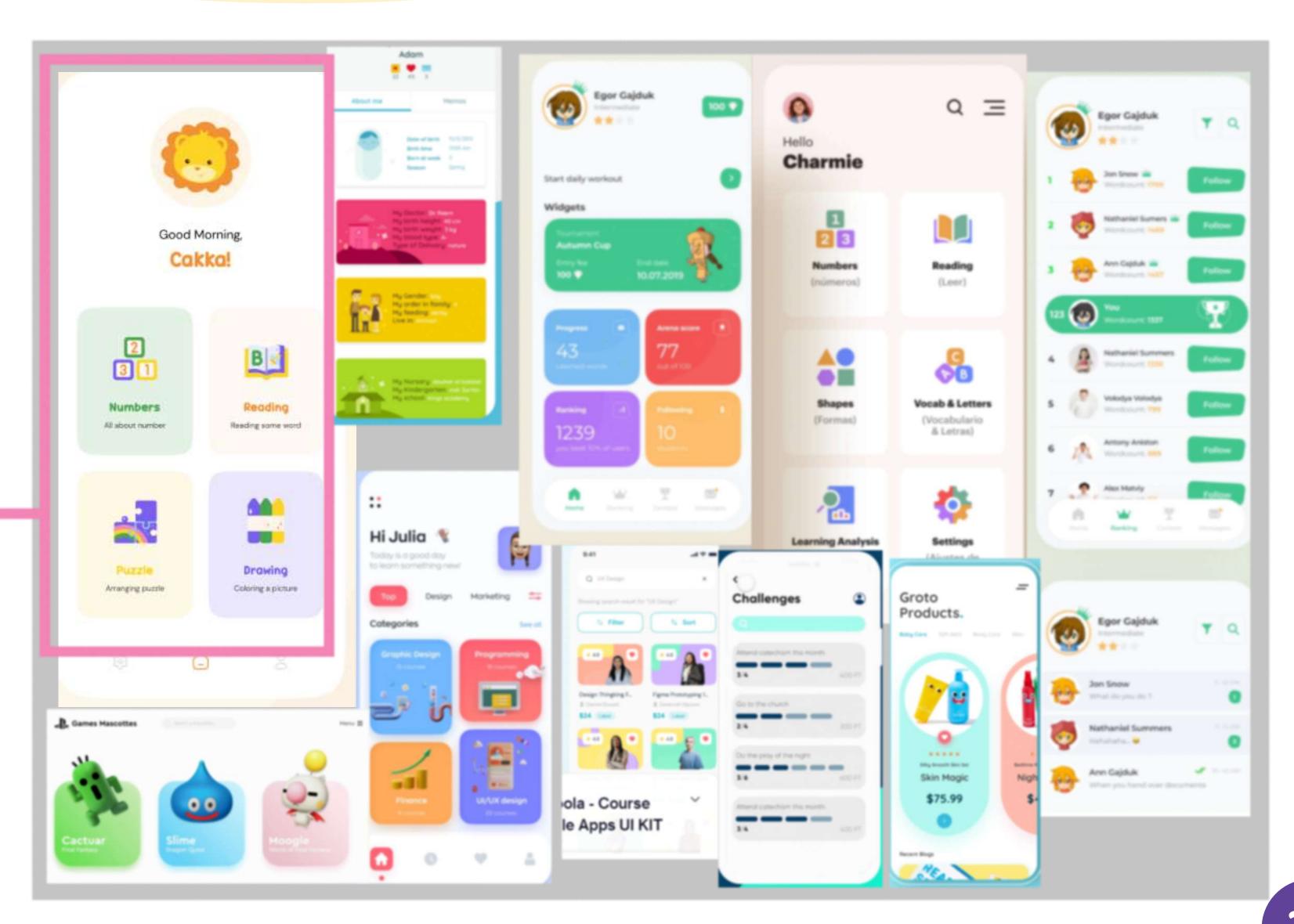


#### Homepage layout

In the pages that we want to give them some options we will have a layout that each cart shows the information very clearly and we can help them to choose with some pictures too.

as their fingers are not used to working with cellphones we will make the cards big enough that when they tap anywhere near the card it takes them to the desired page.

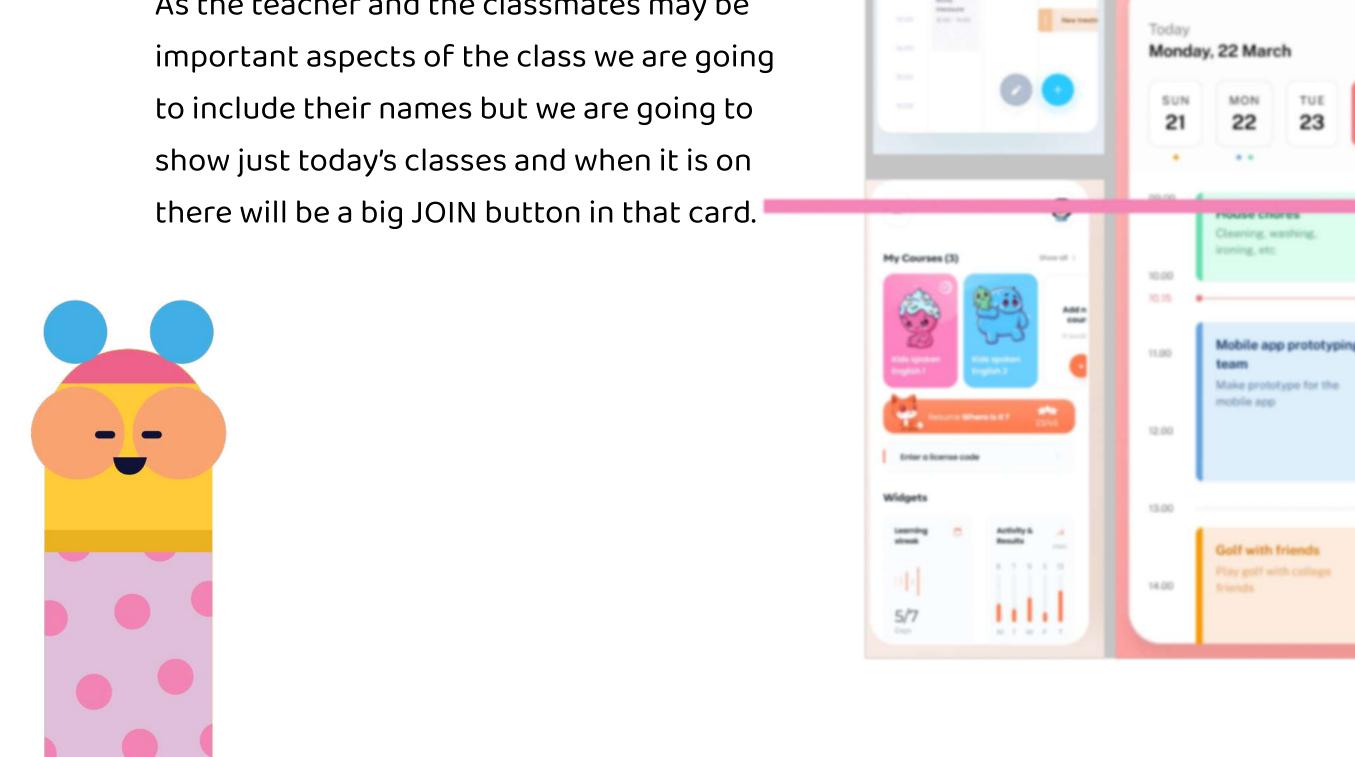


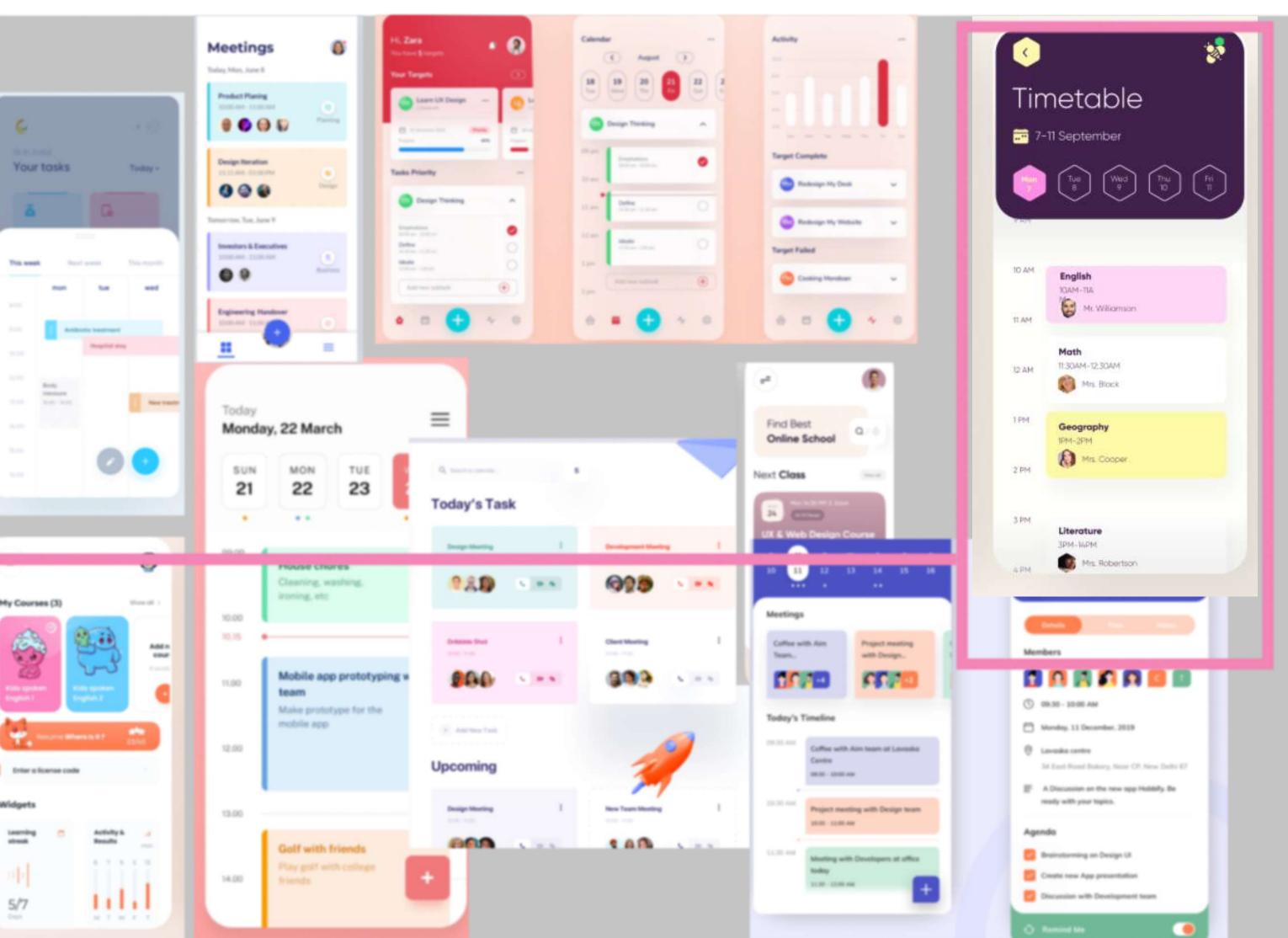


#### **Timetable**

We want to show the schedule as easy as possible. We help the students find what class in live now and try not to include too much information on the card.

As the teacher and the classmates may be





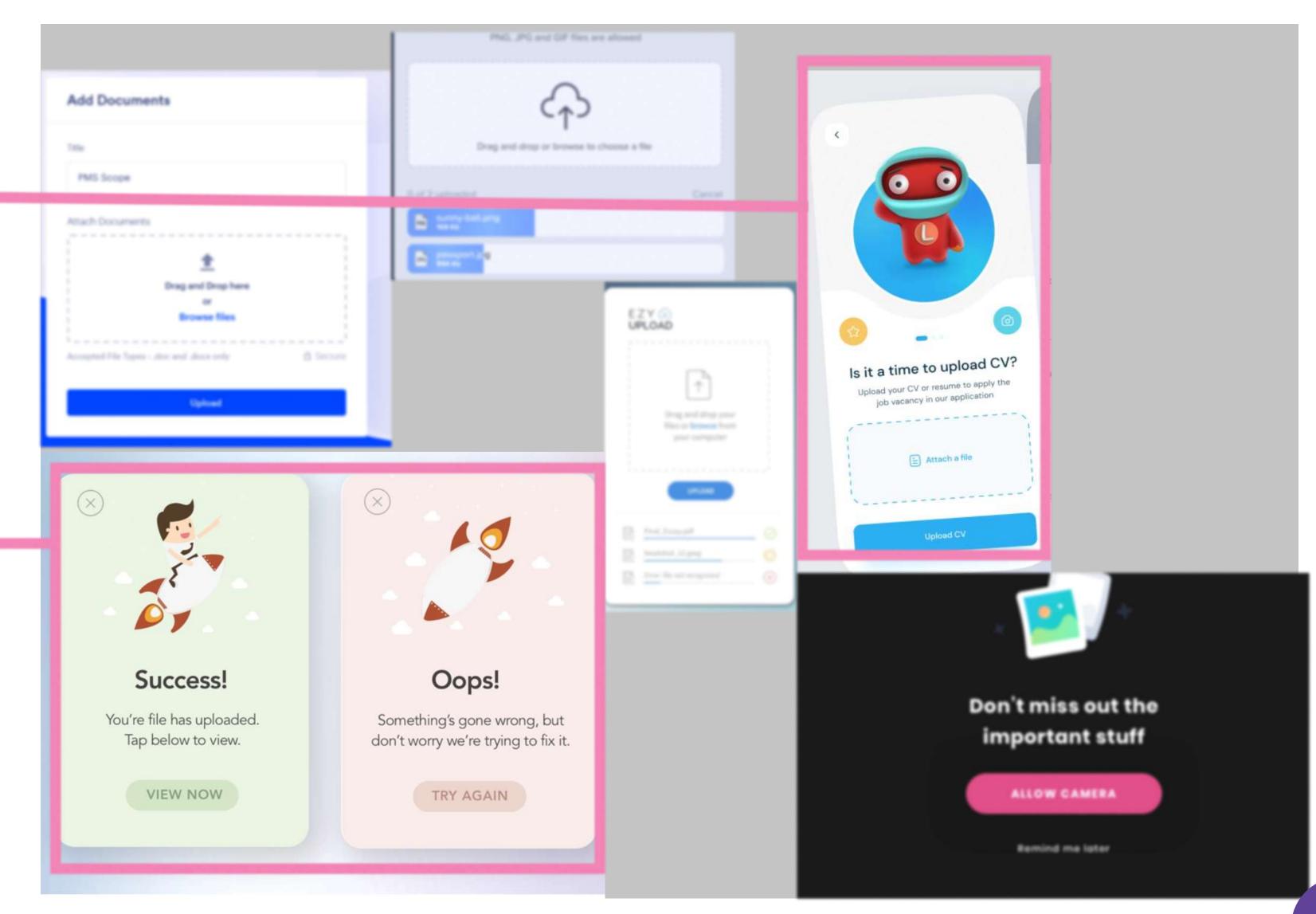
#### Upload an assignment

For uploading the assignments a whole page will bring all the attention to only one task.

So instead of a modal I think using a dedicated page to just selecting a file may be a good option

We want a loud and clear page to tell the yound children if they didn't upload a file correctly.





# 04 Sketches

Exploratory Sketches
Refined Sketches



# Exploratory sketches



As our users are kids giving too much options for filtering the layout of the page can be confusing so having 2 main categories can keep it simple and useful at the same time

# Exploratory sketches

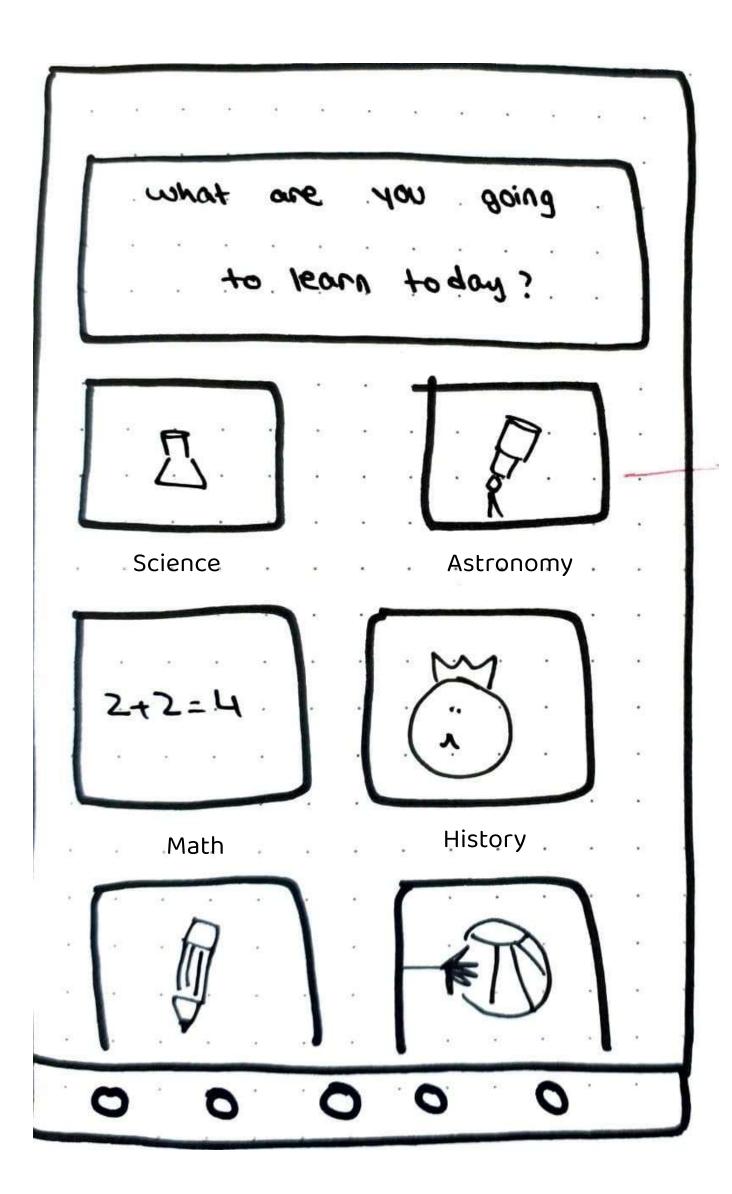


We want to have a page for describing the class content and containing teacher information and clasmmates in it.

As putting attachments and uploading projects in only one tab will make it too complicated I will break it up into 3 different tabs

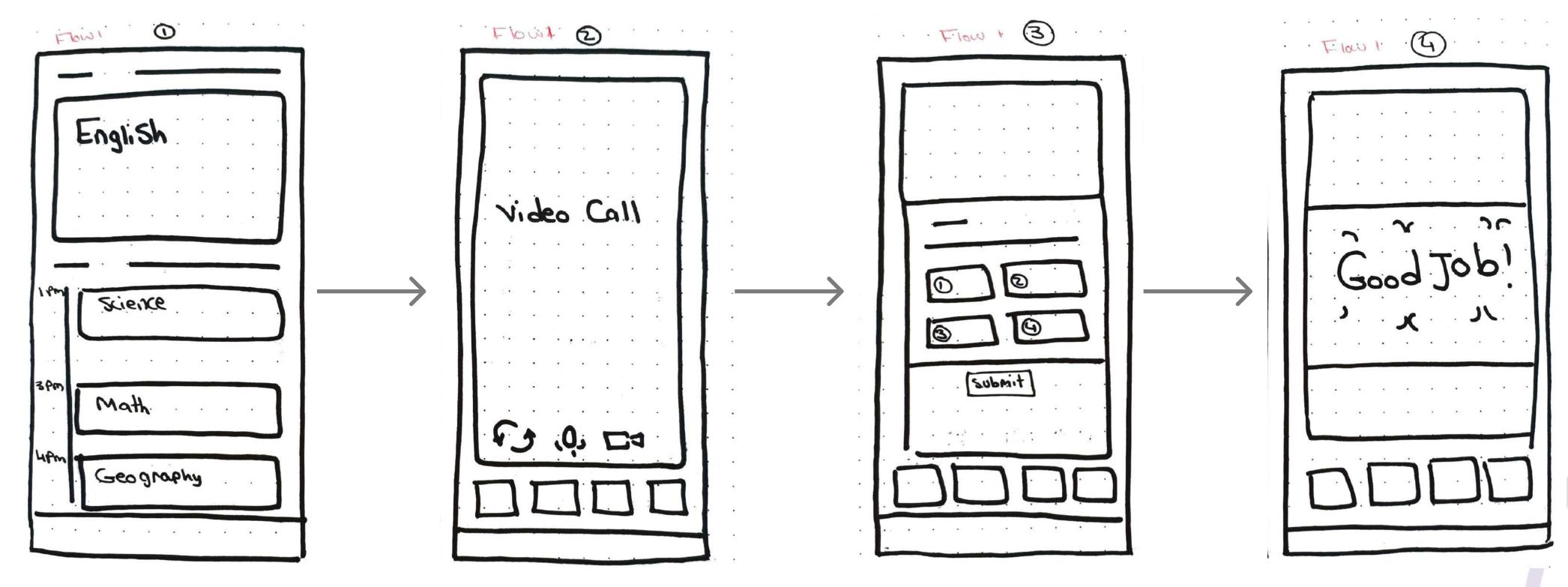
# Exploratory sketches

Having visuals is very important for kids so we are going to guide them through choosing content with showing big picture in addition to having description for each card





## Flow 1: Question Modal flow



The first page is about showing today's schedule to the kids.

As soon as the class goes live, it's card become bigger and a join button will show up

The options for the video calling won't be there all the time.

Teacher can enable and disable each functionality like muting or screen sharing for each student whenever it is necessary.

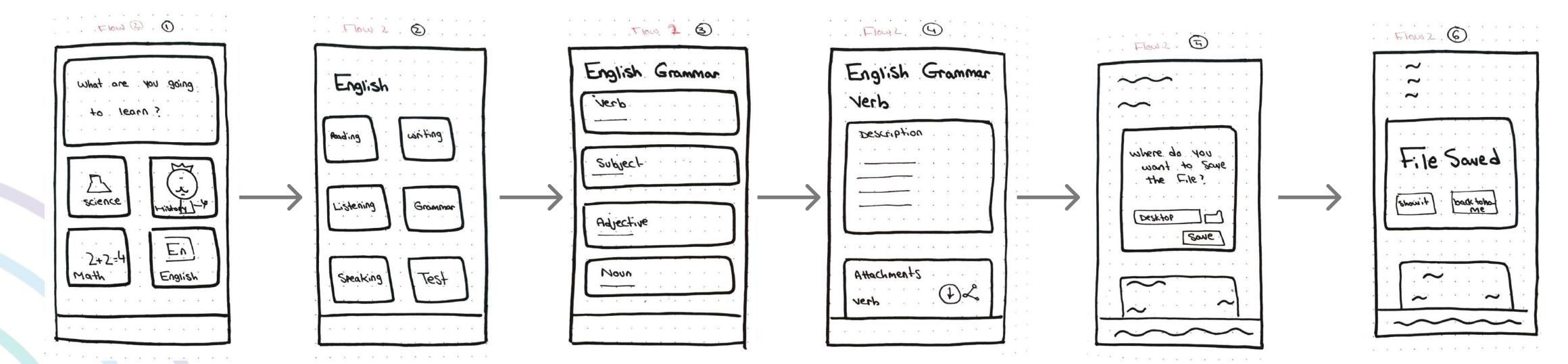
Teacher can ask any question in the middle of the class.

It will appear as a modal while students can hear their teacher.

She will help them complete the quiz if necessary.

If they choose the right answer, we should be able to make them feel good about being right, with having a big, happy page with a positive sentence.

# Flow 2: Downloading Class content



The cards should be big and clear.

Student can choose the topic that she/he wants to learn today.

Options depend on each student and the classes that he/she attends

For each subject
there will be
sub-categories that
help them organize
the topic in their
minds

When they choose one category they will be able to see when each category has been thought.

So they can review the subject from the start or just revisit the last grammar in this example.

There will be a

description for each

topic and they can find

the PDF or Slides of

the subject in its page.

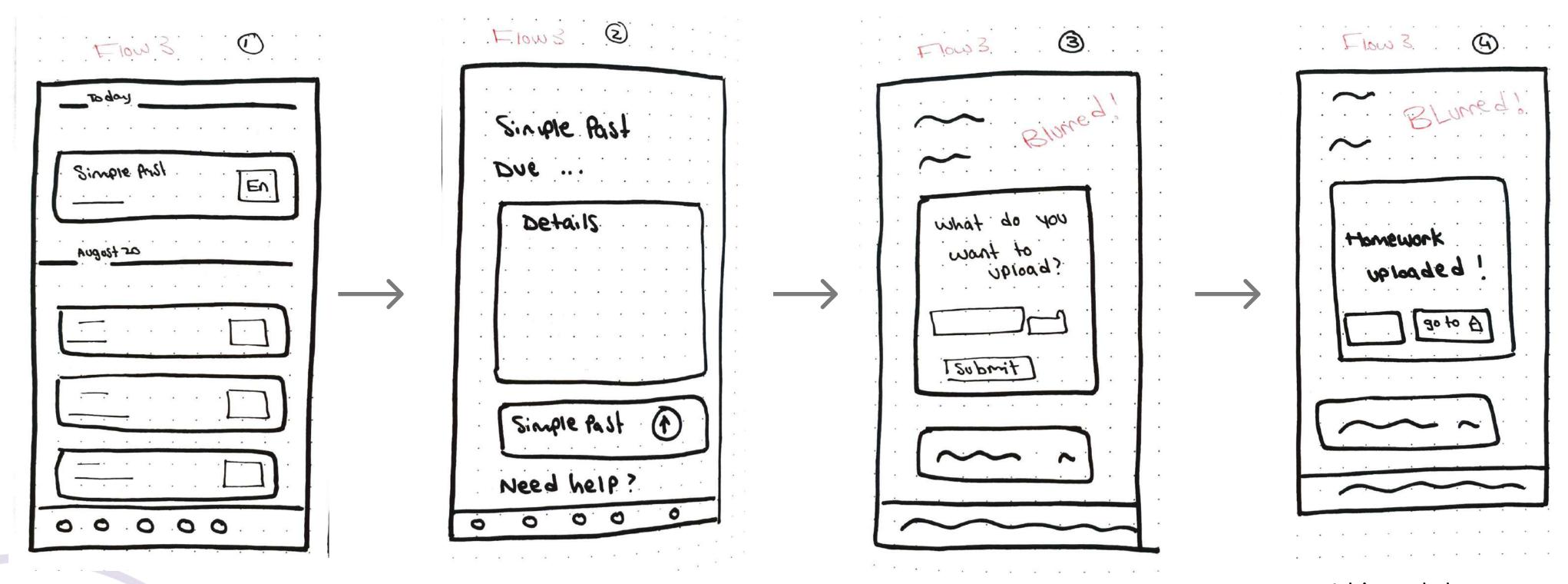
They can choose the place to save the document.

We won't let them loose the file!

We will blur the rest of the page to focus all the attention on the modal. A big and clear confirmation page!

We will blur the rest of the page to focus all the attention on the modal.

## Flow 3:Upload an assignment



For uploading assignments it is important to organize them with their due dates.

The discription page help them know what is their teacher's expectations. and When they tap on "Need help?" button they can message their teacher instantly

They have to upload their homework here We will blur the rest of the page to focus all the attention on the modal.

A big and clear confirmation page!

We will blur the rest of the page to focus all the attention on the modal.

# 05 Design Systems

Typography

Colours

Gradients

Buttons

Navigation Bar

WireFrame Colours

Atomic Design



#### Typography

Rounded fonts don't feature ornate serifs or complex letterforms, making them exceptionally easy to read for early learners. Baloo and Fredoka One manage to balance a rounded design with a stylish, minimal aesthetic.



Typography

Baloo font & Fredoka One headings

H1 Head

H2 Headline

H3 Headline

**H4** Headline

H5 Headline

**H6 Headline** 

Body 1

Subtitle 2

BUTTON

Body 2

Caption

OVERLINE

H1 Head

H2 Headline

H3 Headline

H4 Headline

**H5** Headline

**H6 Headline** 

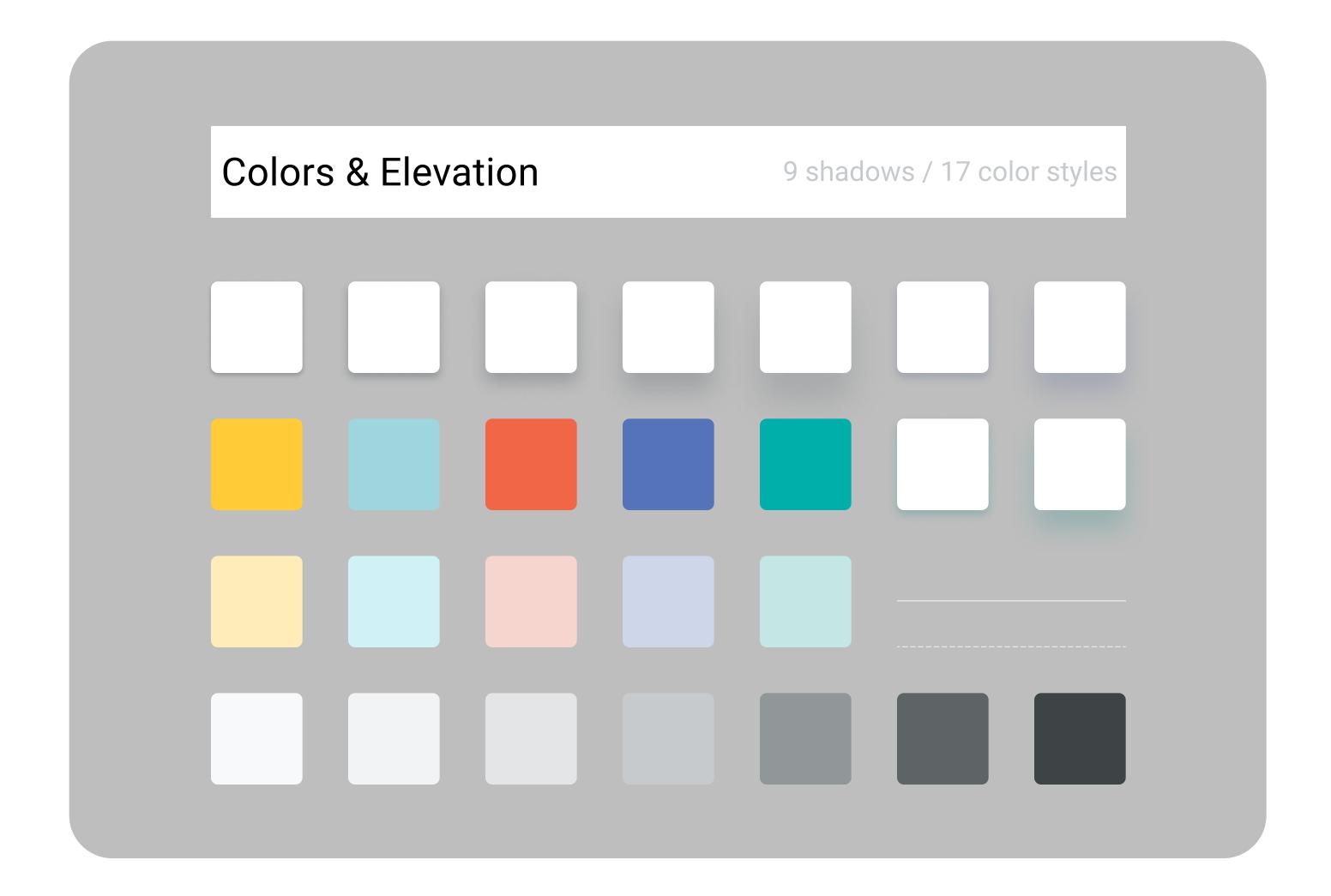
Body 1

#### Colors

The effective use of color and graphics in children's media is one of the most important aspects of design to ensure that you deliver optimal content and a memorable user experience to young users.

Younger children, generally prefer bold, primary colors and high contrasts in graphic layouts that evoke exploration and discovery.

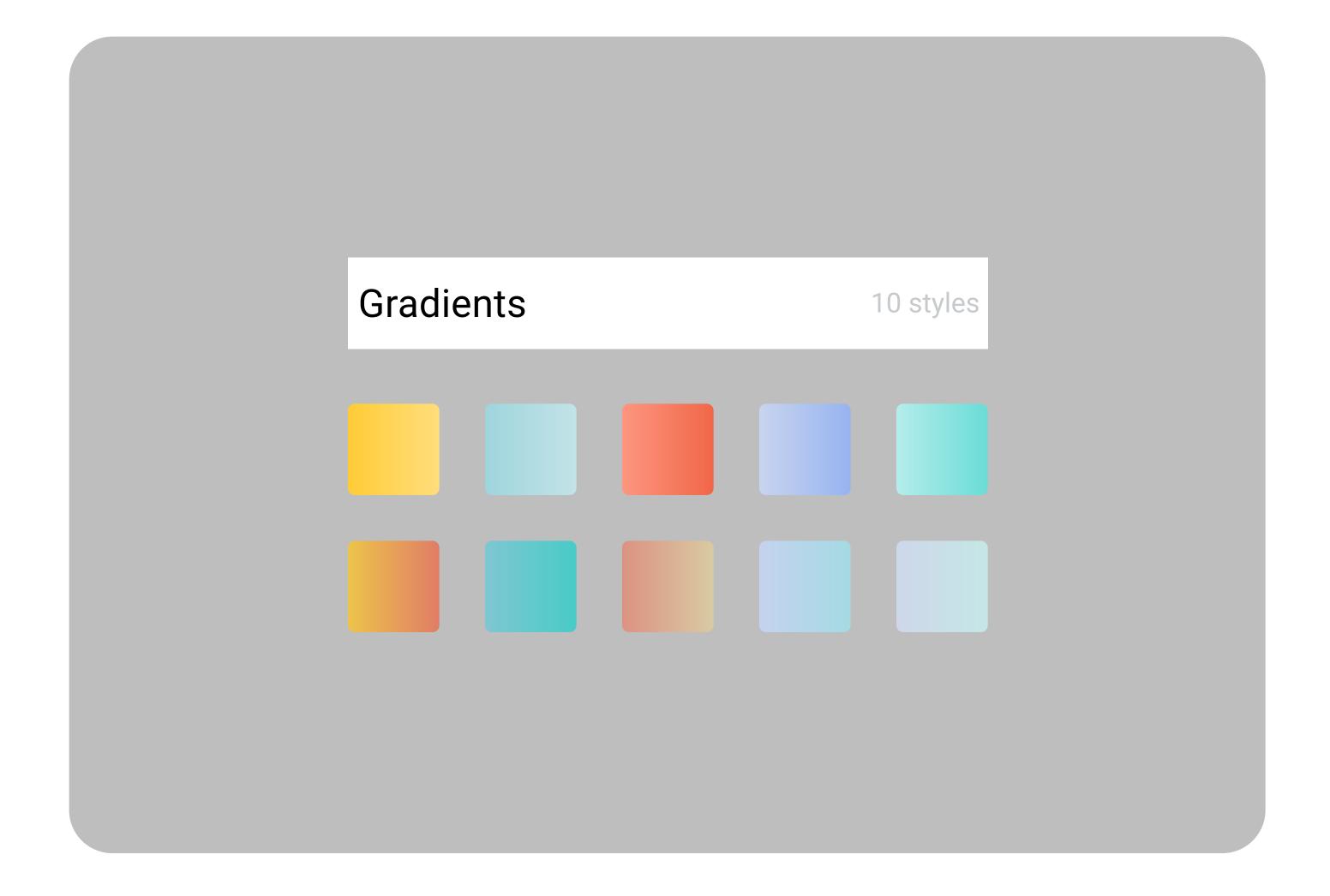




#### Gradients

A gradient creates visual interest and helps move users through a design. The eye will land on one area of color and the change between hues and light and dark areas helps shift focus across the screen. Gradients can be a highly useful and engaging design tool and add spark and intrigue to a multitude of projects.



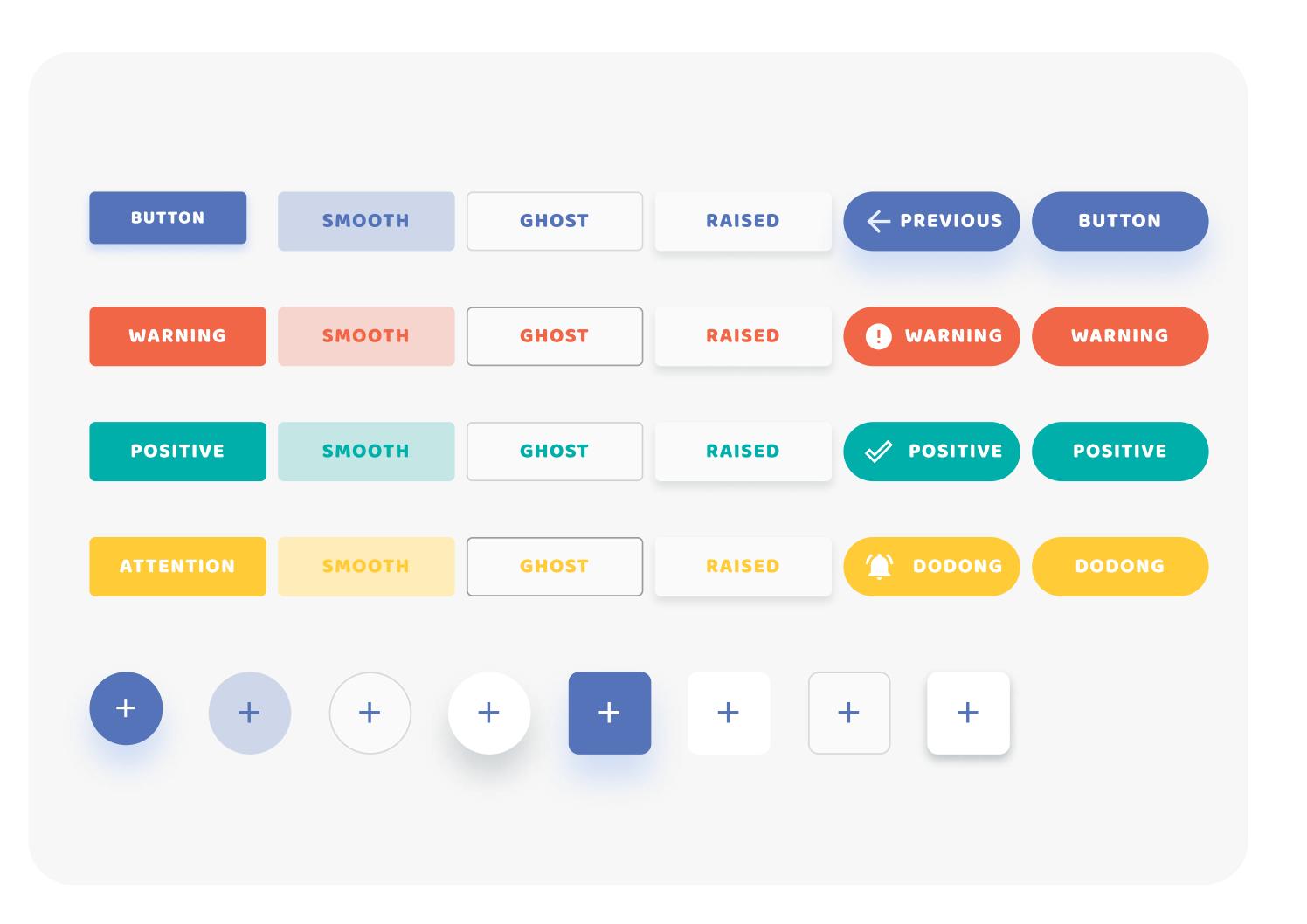


#### **Buttons**

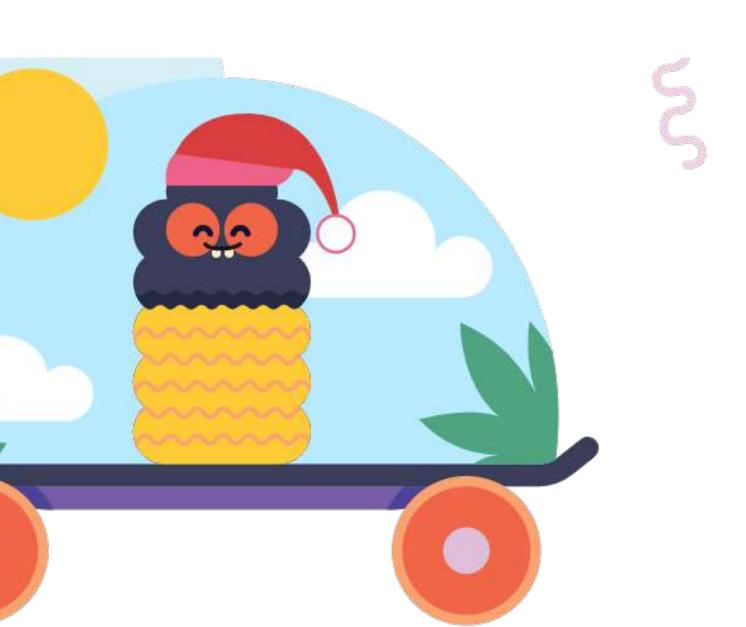
As you are considering kids as your use you should design big, noticeable buttons for touchscreens to take advantage of young children's gross motor skills and support their limited fine motor skills. It was recommend at least 2cm × 2cm touch targets for young children (4 times bigger than the 1cm x 1cm recommended target size for adult users).

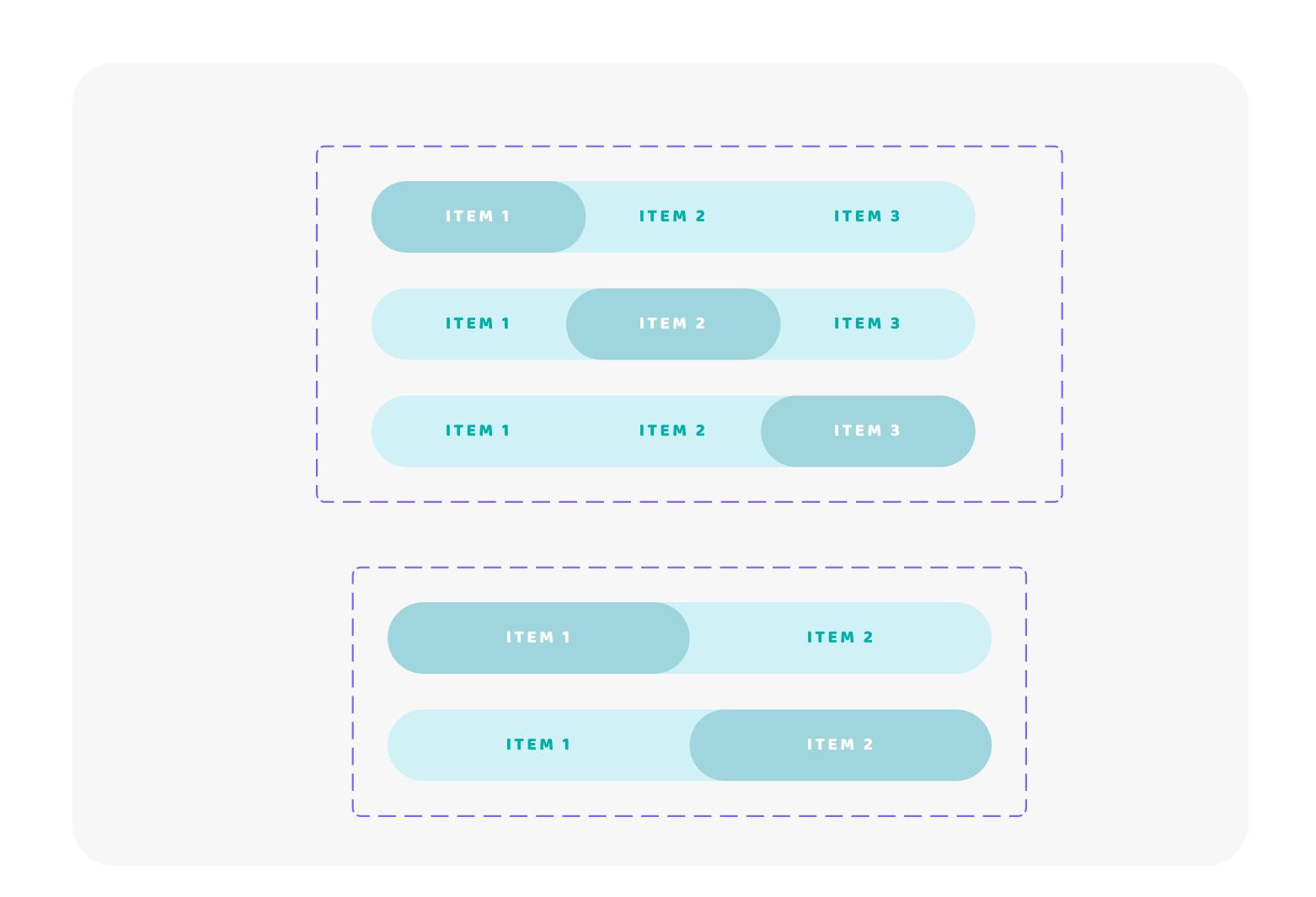
We want to communicate with children with colors too. So we tried to follow the general mantal model of children about green yellow and red.





## Navigation bar

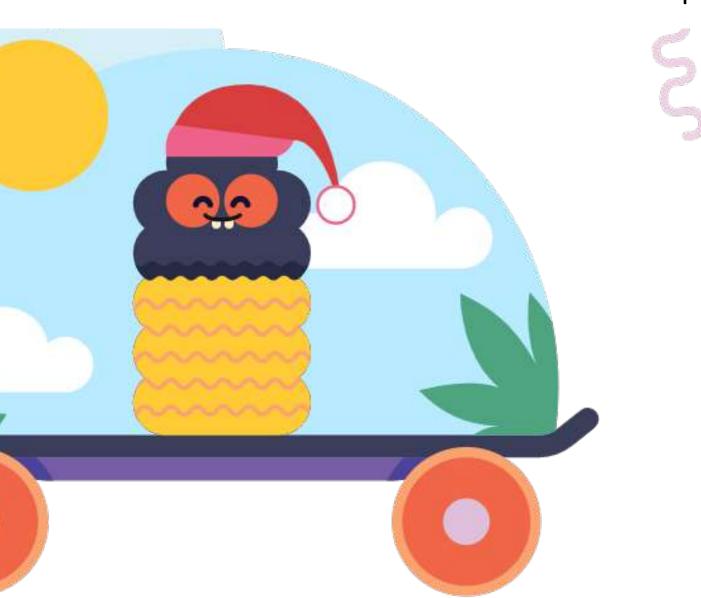


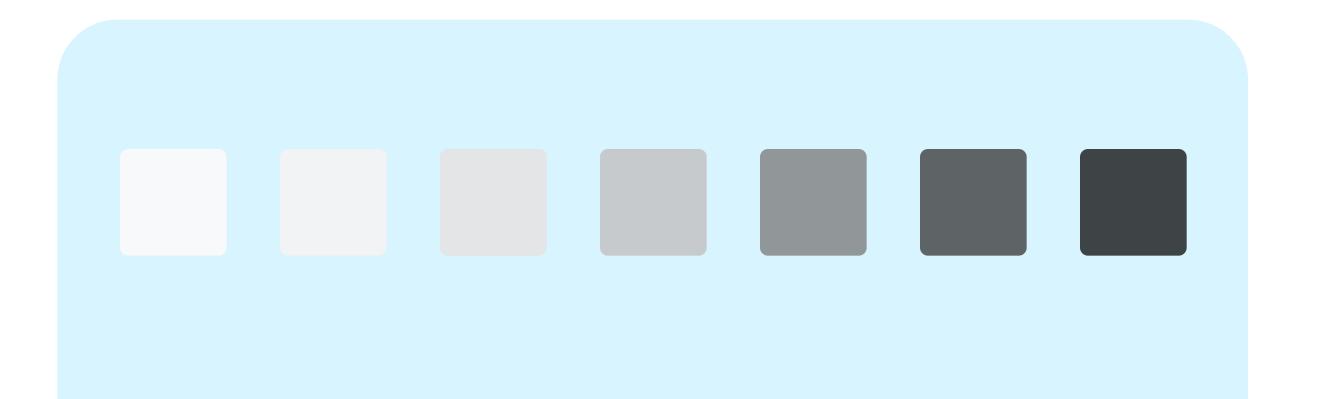


#### Wireframe colors

When you put different shades and colors on your wireframes, viewers get hung up about how each element will look. Even if you tell them the style isn't permanent, they still can't avoid it because it's a natural reaction to what they see. You want them to think about style in the graphics stage, not wireframing. Important questions about site structure and strategy need to get answered first. Wireframe styles make this harder to do. Colors, shapes, fonts and images cloud the vision you're trying to communicate. This can lead to your team making wrong decisions that could have a lasting impact on the site.

So we are going to use different shades of gray in our wireframe. As the shade becomes darker it indicates the color in the application going to be brighter.



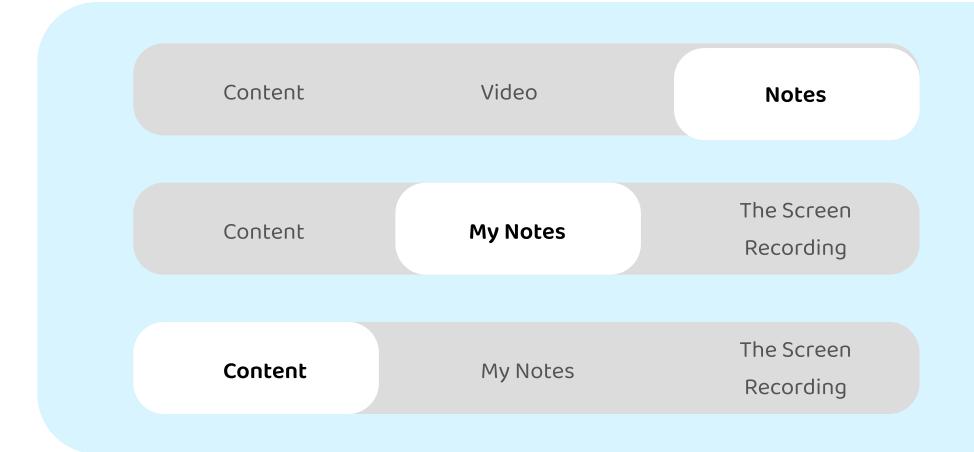


#### Atoms into much more...



For making our design consistent (and easy!)
We have to break each page to smaller parts
Making each component before making the
whole page help us think of our user
interfaces as both a cohesive whole and a
collection of parts at the same time.
These are active and inactive states of
subjects.

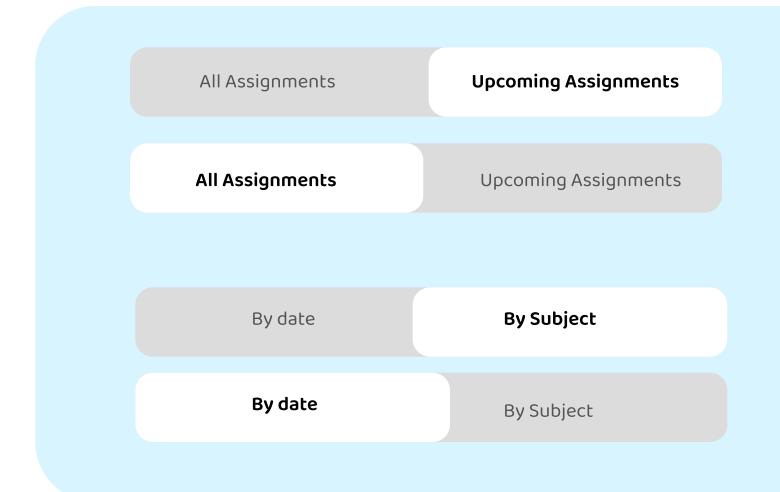




Making variants of the same component before designing a page make the design easier to understand.

The component has the same layout in every page and help students know what to expect in each page

### Organisms into much more...



Although grownups are so used to seeing page sort like this:

By date
By Subject
By Name
By teacher

But children don't have the same mental model. So instead of the dropdown menu we want to show them all the available options













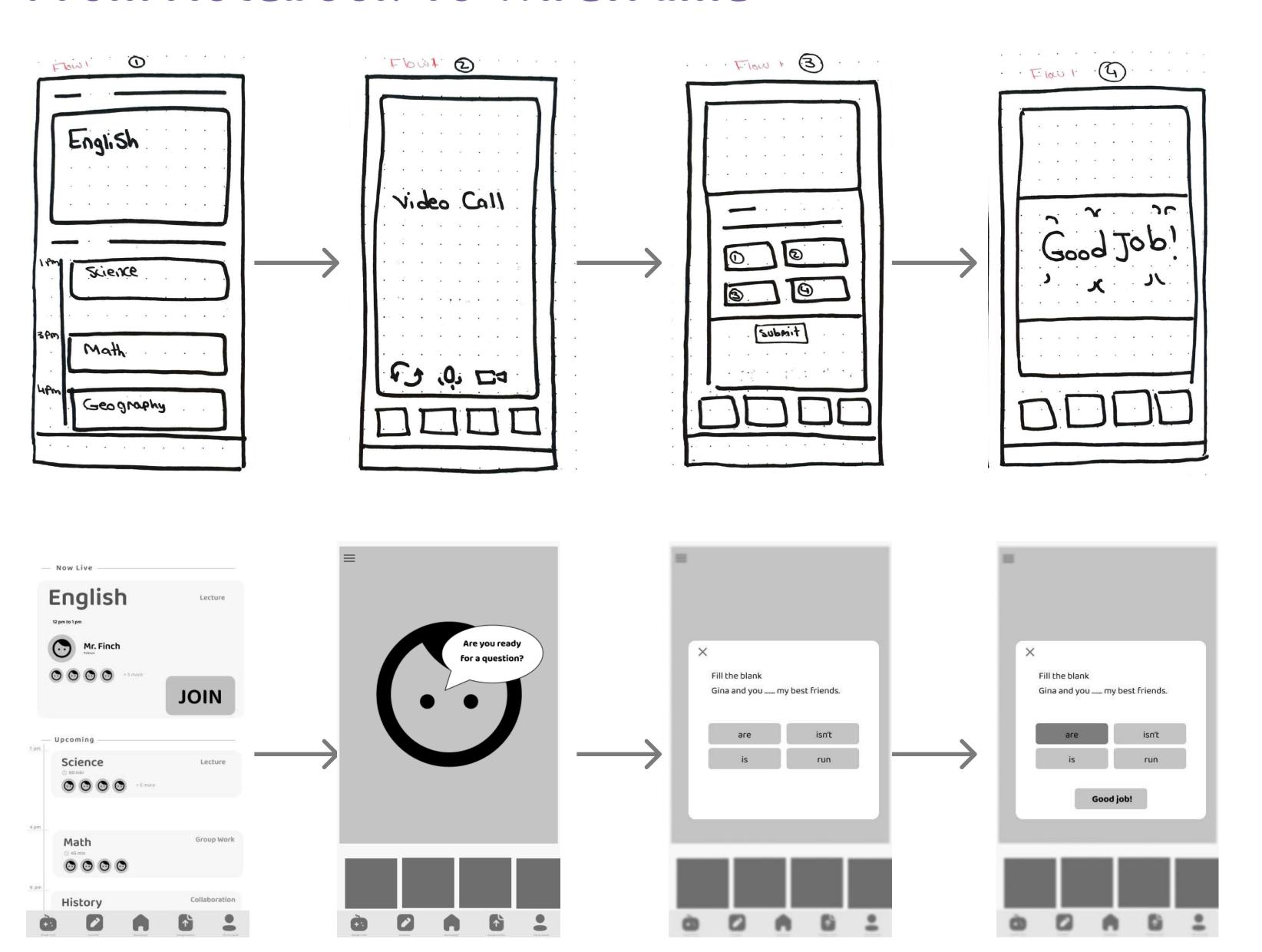
I tried to choose an easy to understand icon for the navigation bar, But without the description any icon might be new for our user.

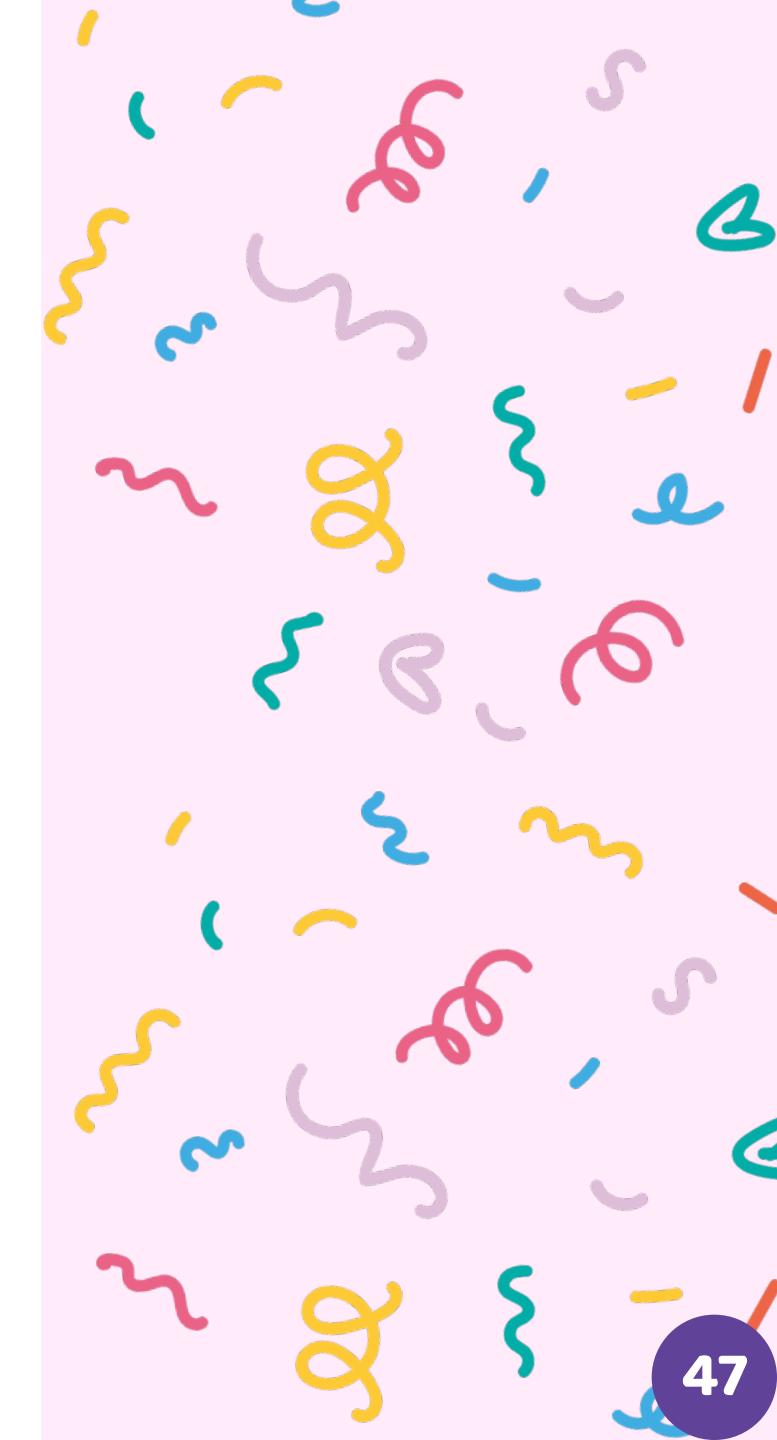
# 06 Wireframe

From Notebook to Wireframe

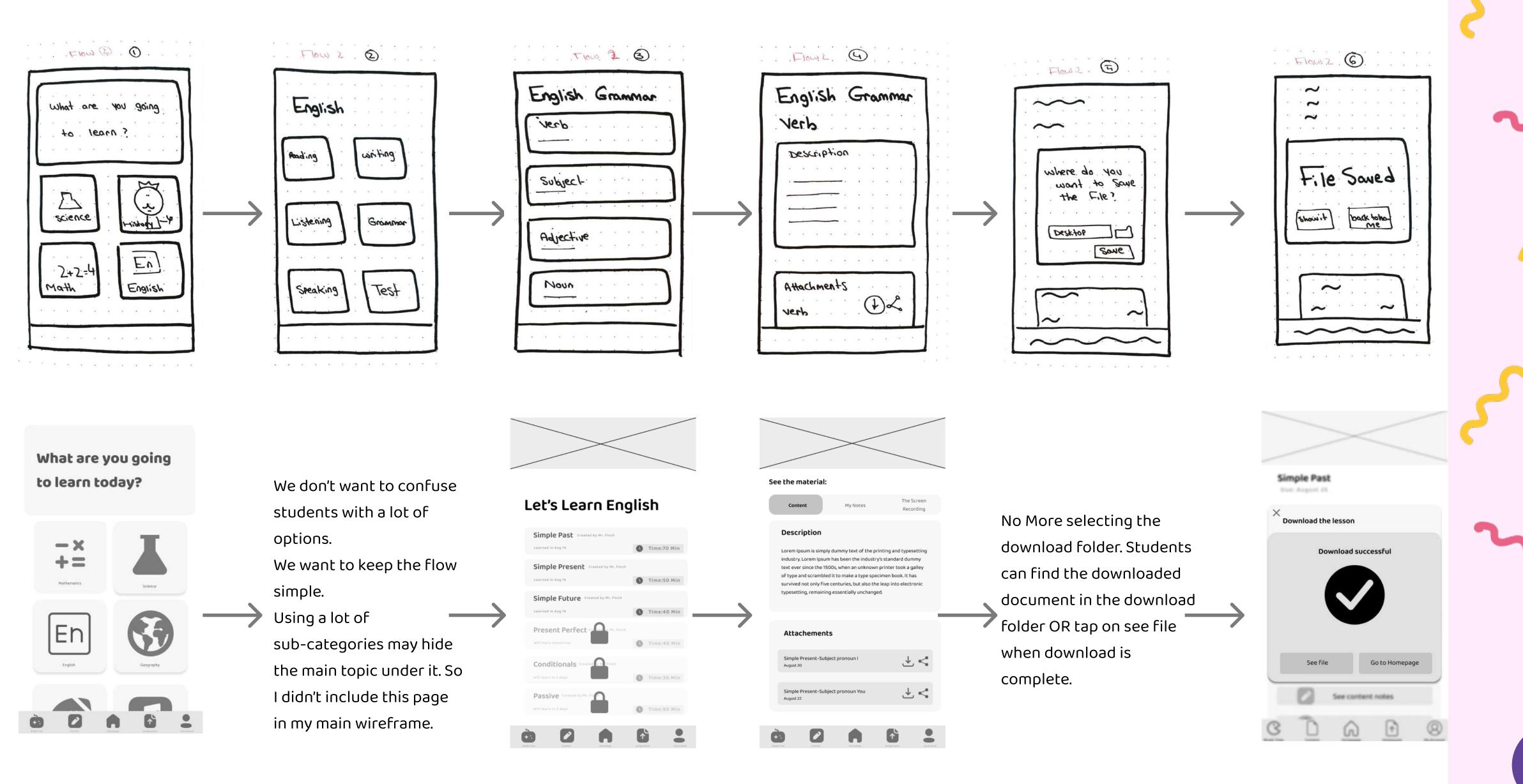


#### From Notebook To Wireframe

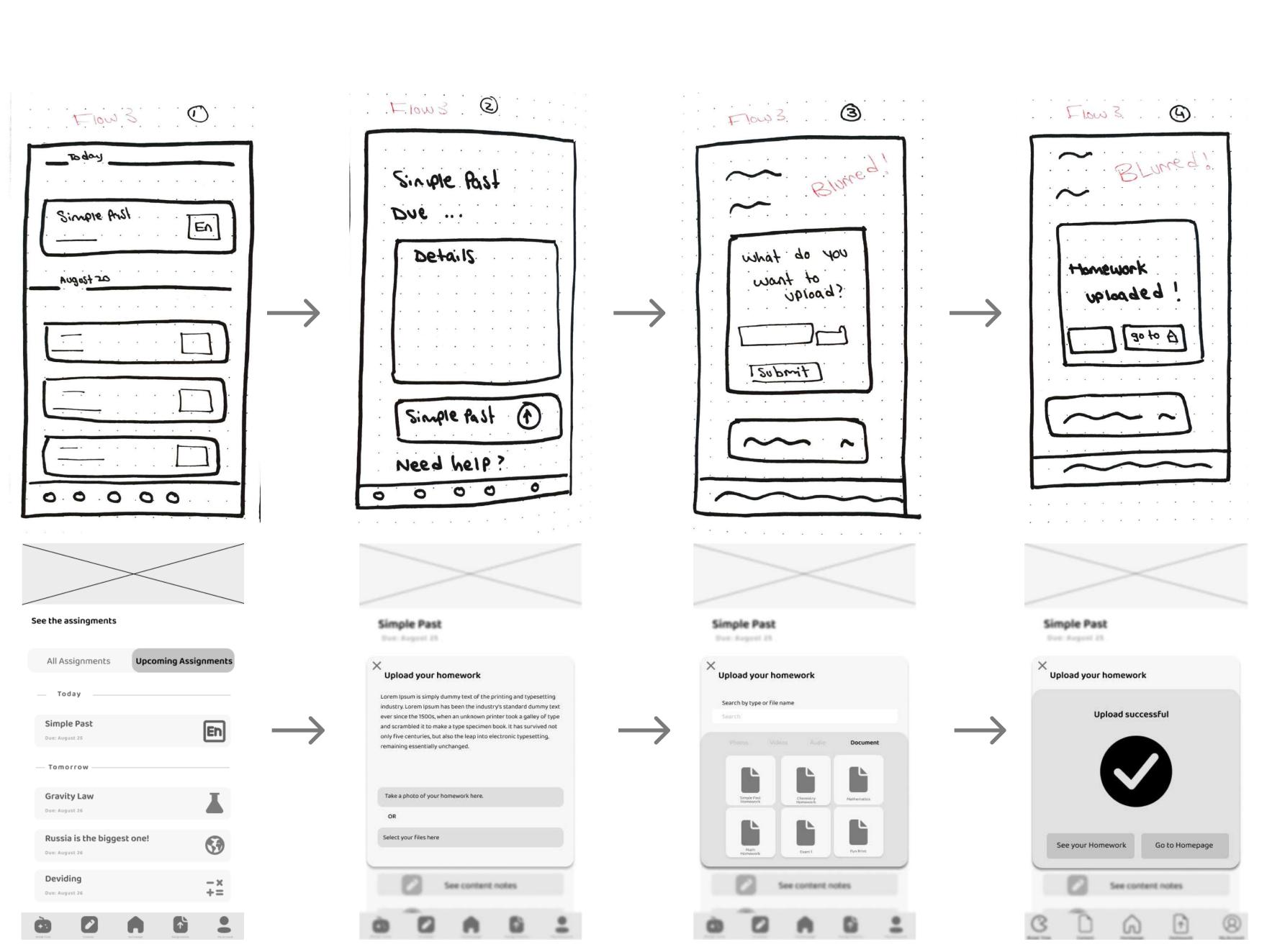




#### From Notebook To Wireframe



#### From Notebook To Wireframe

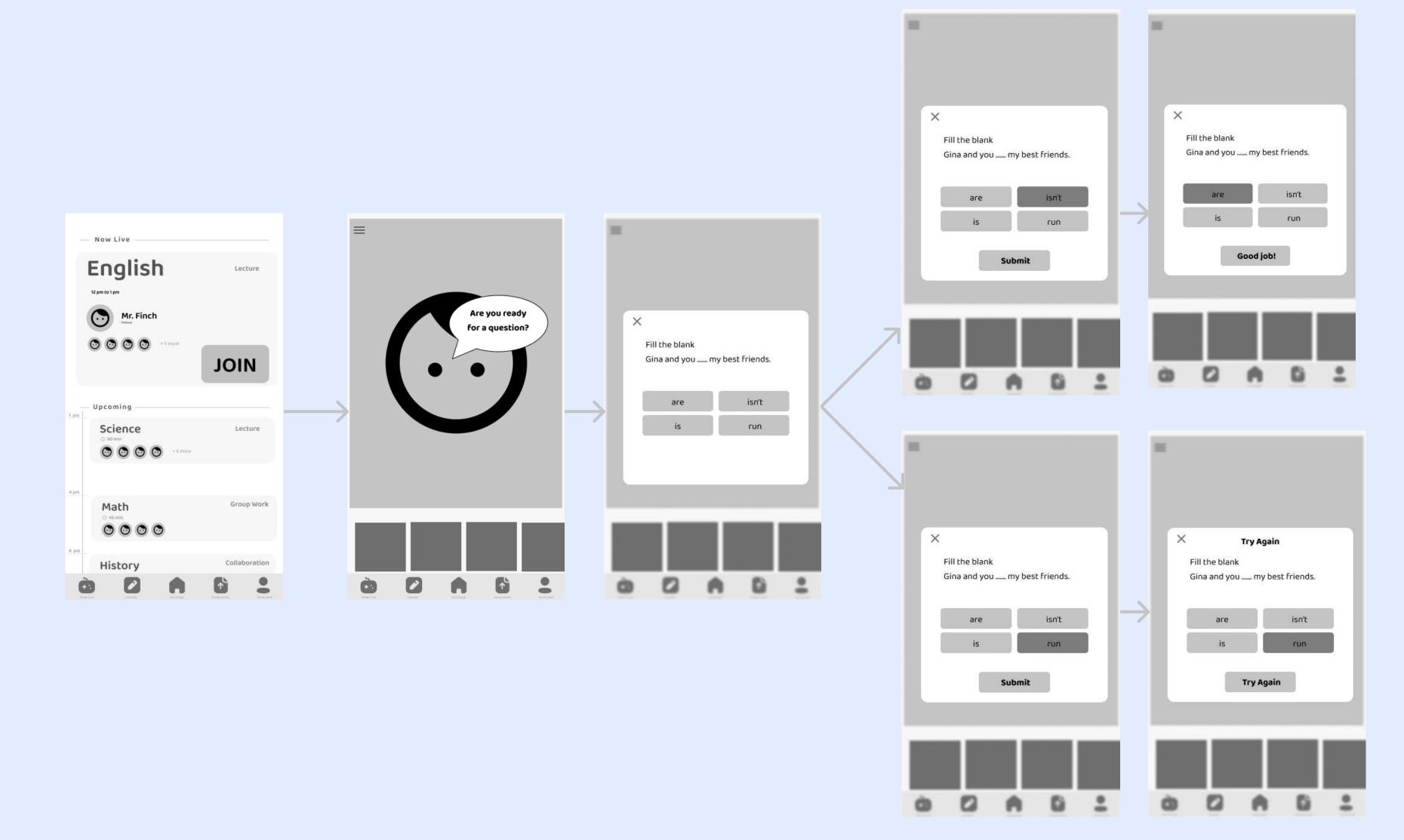




# 07 Wireframe Flows



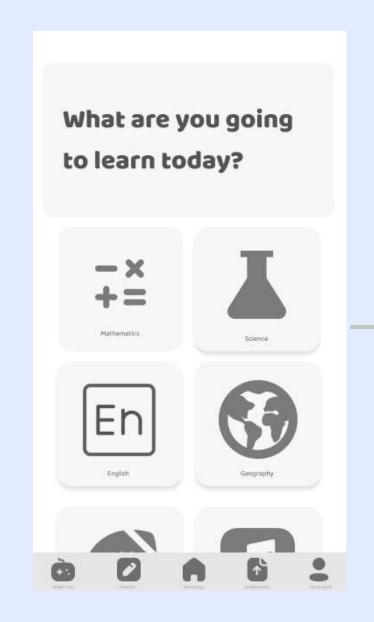
### Flow 1 (Wireframe): Question Modal flow

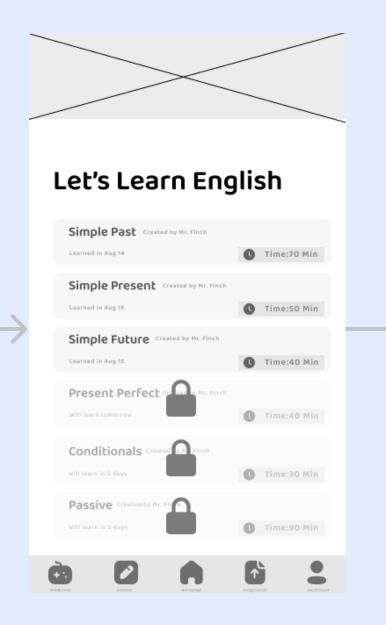


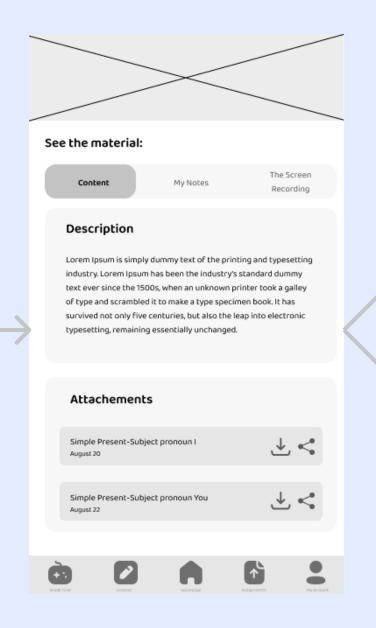


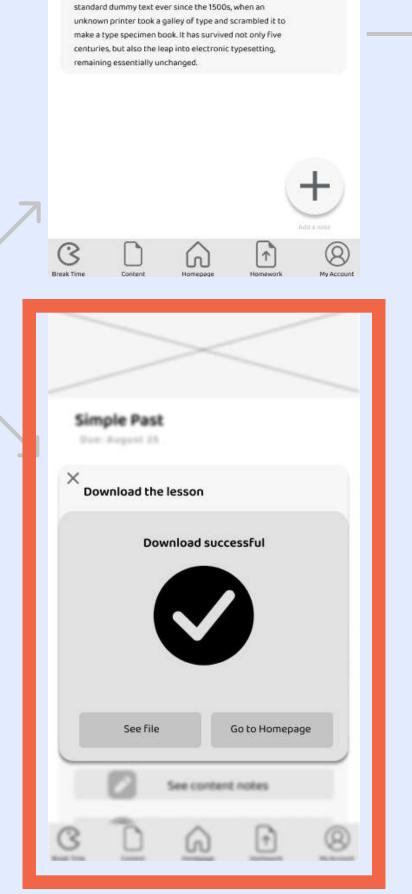
## Flow 2(Wireframe): Downloading Class content











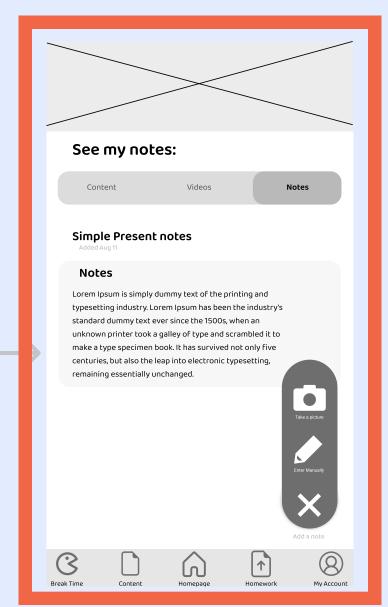
See my notes:

Simple Present notes

Lorem Ipsum is simply dummy text of the printing and

typesetting industry. Lorem Ipsum has been the industry's

Notes



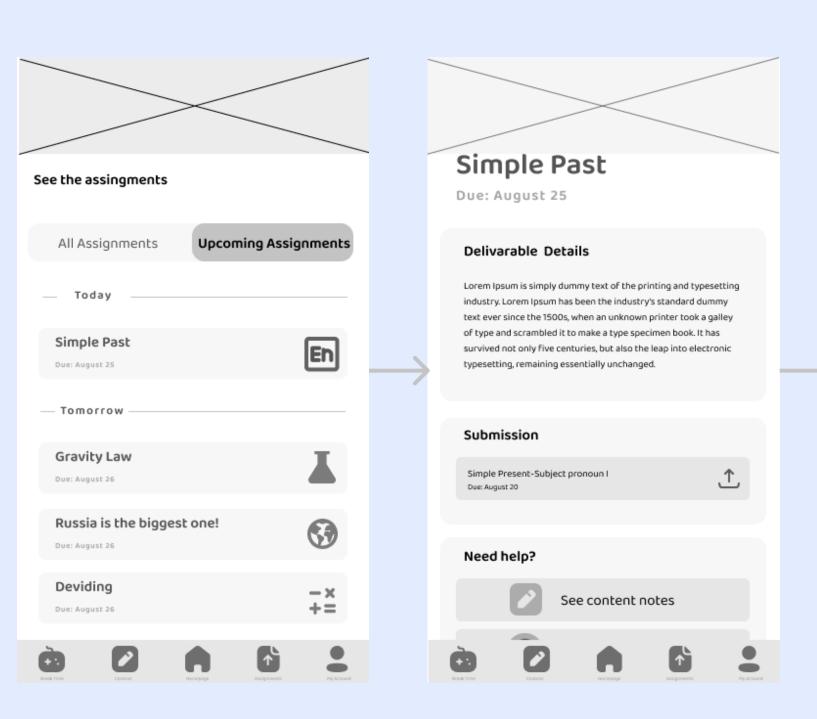
This page was added after user testing

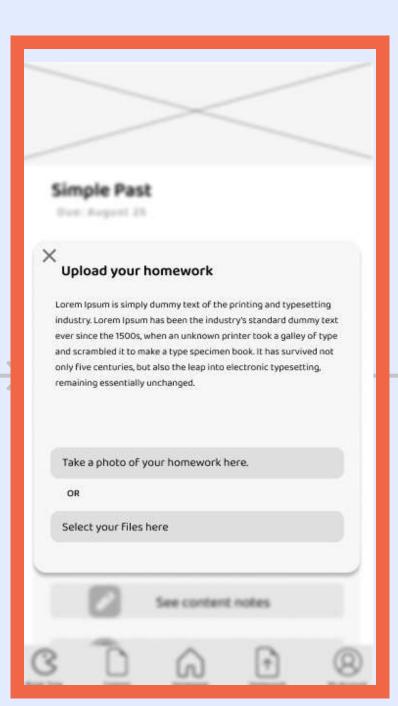


This page was added after user testing

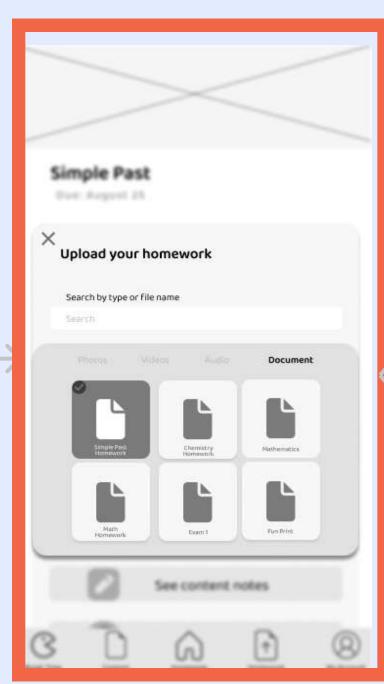
## Flow 3(Wireframe): Upload an assignment

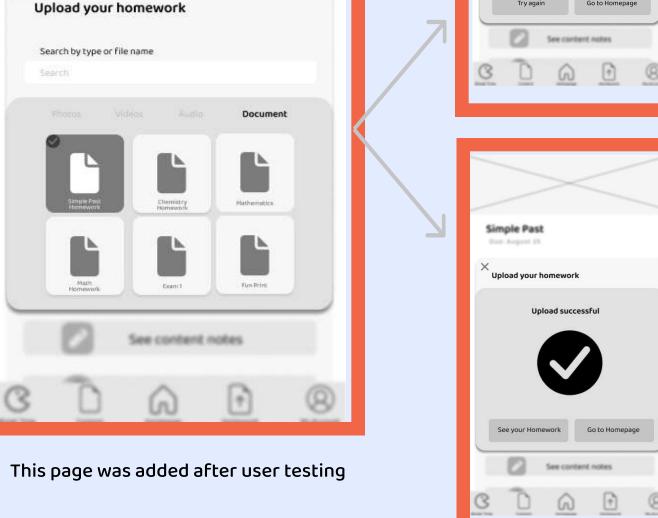






This page was added after user testing





These pages were added after user testing

# 08 User testing

Test Criteria

Assumptions

Test Scripts

User Test Key Findings

Mapping Usability Issues

Iterations



#### **Test Criteria**

- My users are between ages of 8 to 12
- English is their second language
- They have been studying online for past 2 years in developing countries
- They have been uploading their homeworks into messaging apps for the past 2 years
- They used educational applications that are not designed for kids
- I am going to test my prototype with 7
  young children and 3 grown ups. I want to
  make sure parents can use this app as
  efficiently as children



Maryam Farid
Her parents signed the Minor (Child) Photo Release Form

## Assumptions

- User is logged in
- They have been using this app for a while now.
- They have been uploading their assignments and downloading class content with this app for a while
- They have added different classes that they attend
- They are attending math class, English class, science class... and wants to download the content of English class.
- User is in elementary school and know how to read and write



Nazanin Bahrami
Her parents signed the Minor (Child) Photo Release Form

## First Task In class question modal

#### You want to know today's schedule.

- What classes do you have today?
- When do you have science class?
- How can you go to the classroom?

# Your teacher asks a question from all the students.

- Can you answer the question?
- What do you think will happen if you don't answer it correctly?
- Was your answer correct or wrong?



# Second Task Uploading Assignments

#### You want to know what are your homeworks

- Which homework you have to do first? Why?
- What are the next homeworks? When is their due?
- Can you upload your homework?
- How can you be sure that you have uploaded your file successfuly?



# Third Task Downloading Class content

# You want to review your English grammar for your exam

- Where can you find English content?
- Where can you upload your handwritten notes?
- After downloading the content where can you find the file?
- What to you expect to see in each of the tabs in navigation bar?



	Ability to upload the assignment	Ability to download class content	Ability to answer to in class quizes	Understandable language	Easy to understand icons	
User 1						
User 2						
User 3						
User 4						
User 5						
	5/5	5/5	4/5	3/5	4/5	

# Assumption Mapping

#### **Effort Required to fix**

I am not sure if the task is The icons at the bottom of the finished or not. I like to see a big page is confusing - Nazanin - Delsa congratulations page when I answer correctly to a question! - Roieh The text under each icon is very light and small These are not words that we - Samantha use in our classes. - Maryam

I am going to fix all the issues from the first round of user testing to make sure second round will be smoother.

## Not enough visuals



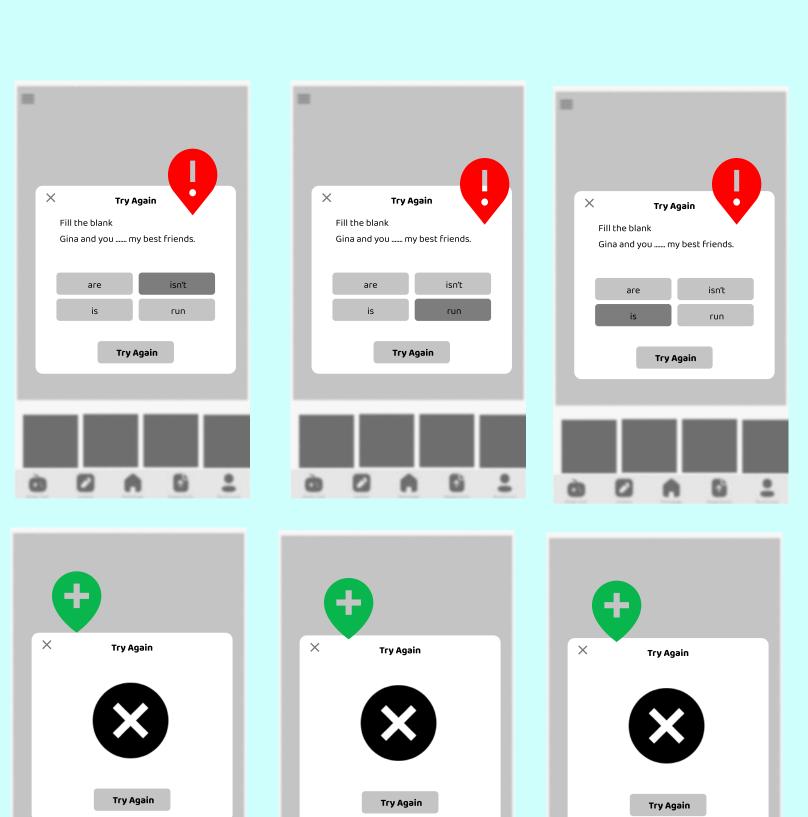
The Confirmation for in class

quizzes weren't as encouraging

as what students expected it to

be.

So the signs that indicate if the answer is wrong or right has changed.



Gina and you ...... my best friends.

Go to Class

### Vague Navigation Bar

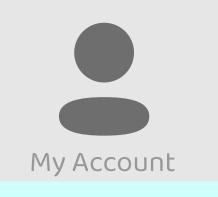




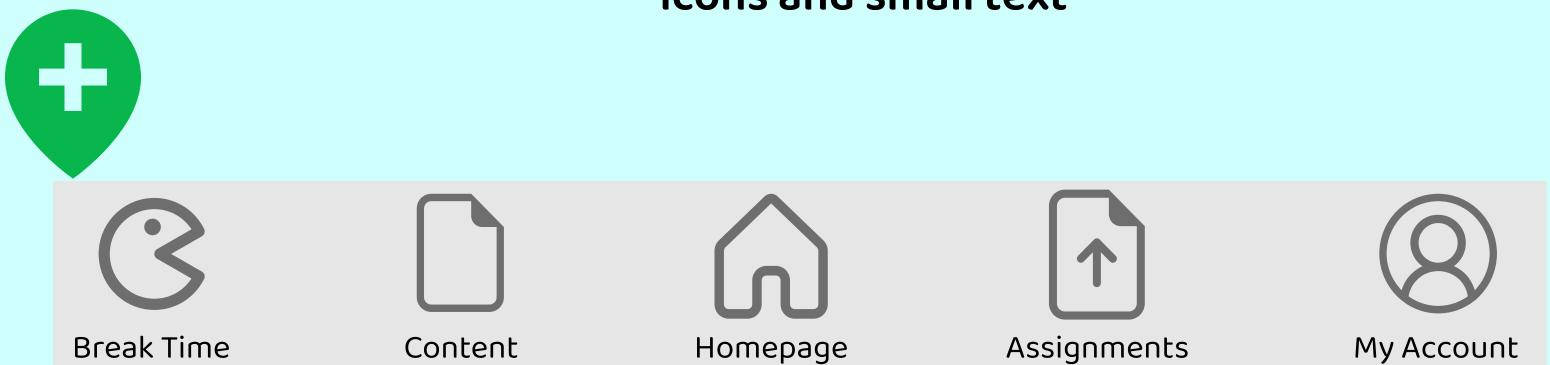








Previous Navigation Bar with not so understandable icons and small text



New Navigation bar is bigger and has more white space and bigger text description for each icon



### Easy Language

As users are young children that English is not their first language we try to keep the language as simple as possible so after some confusion in user testing these words has changed:

Deliverable Homework

Attachments Files

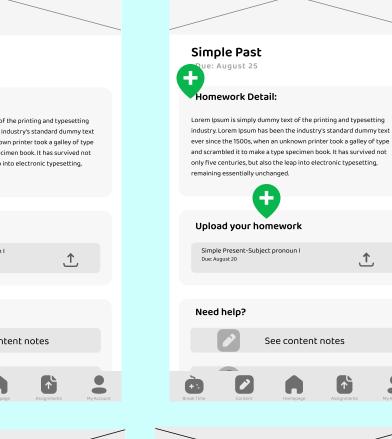
Collaboration Group Work

Class Lecture

Class Material Teacher notes

Description What you have learned





English

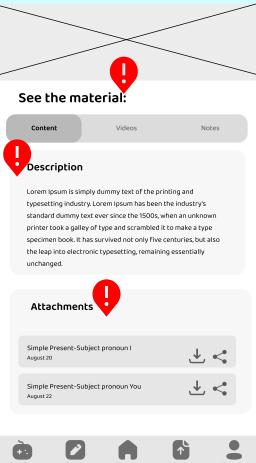
Mr. Finch

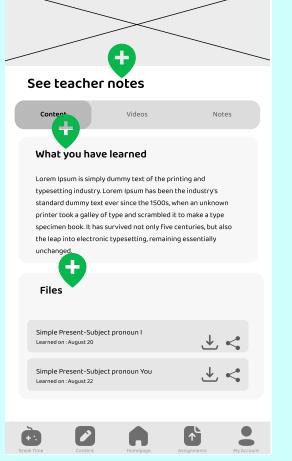
Science

**6 6 6** 

History

JOIN

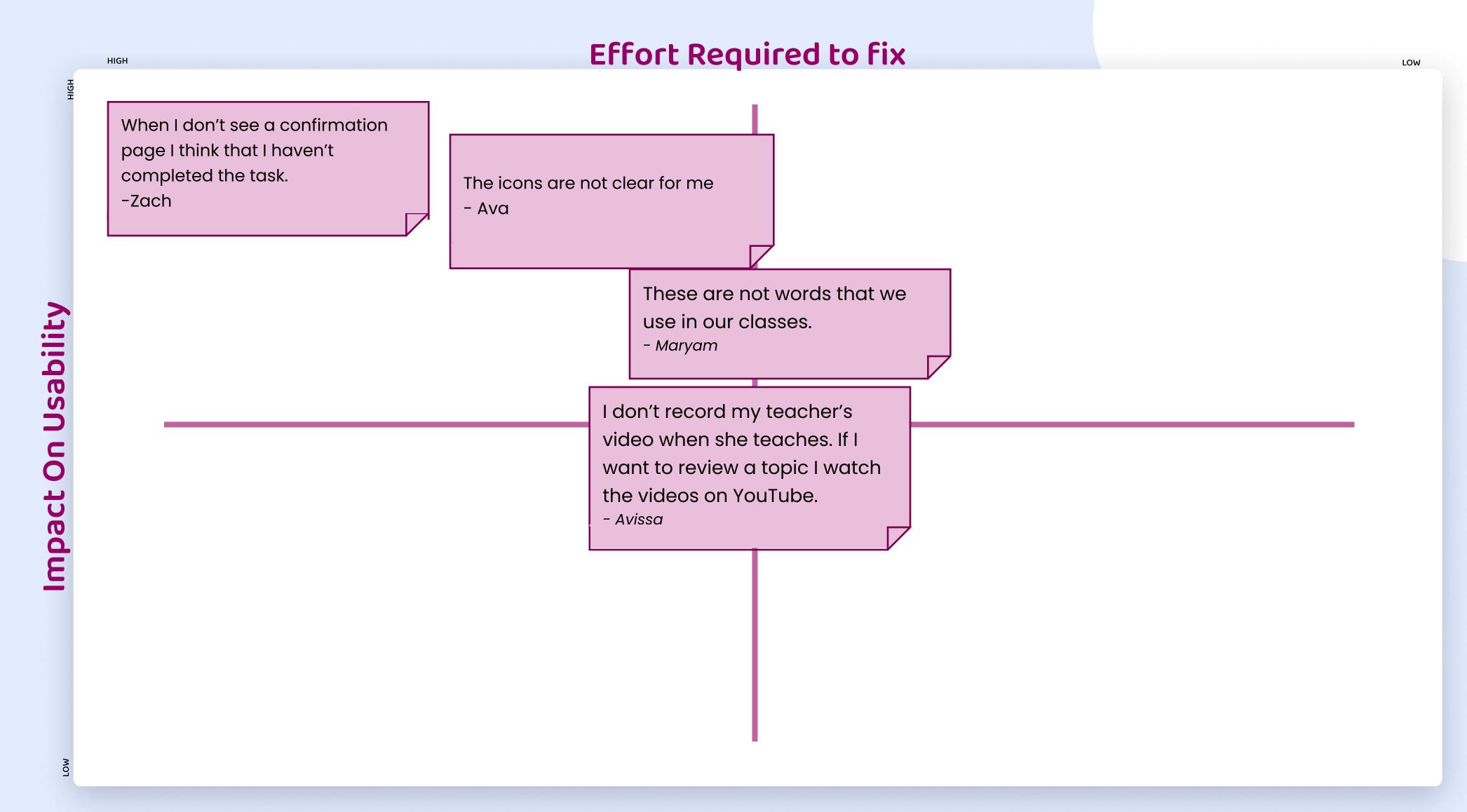




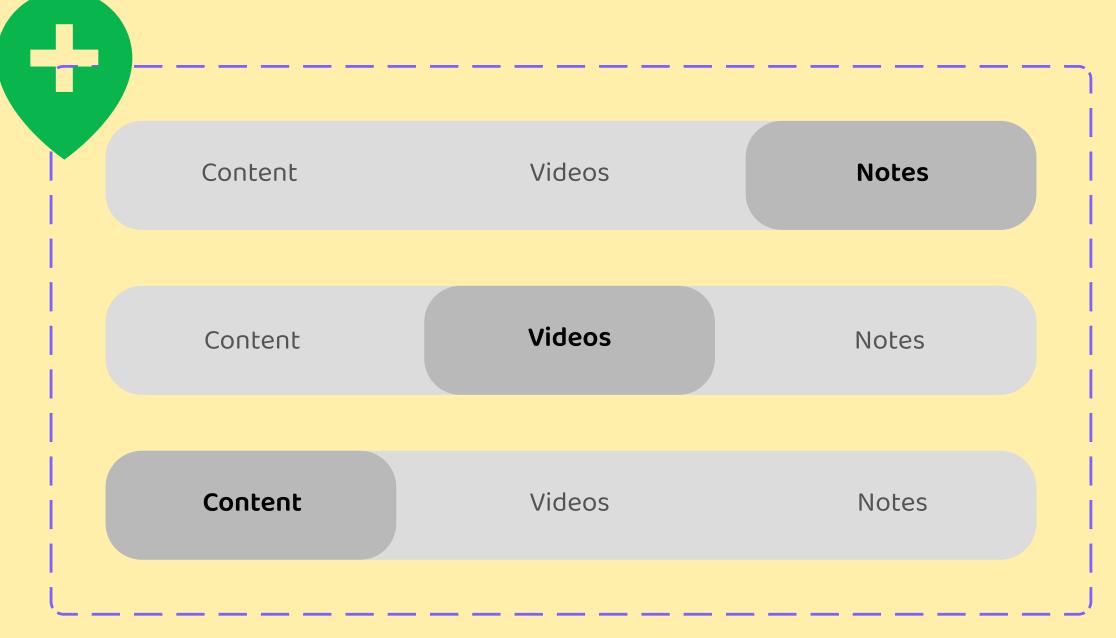


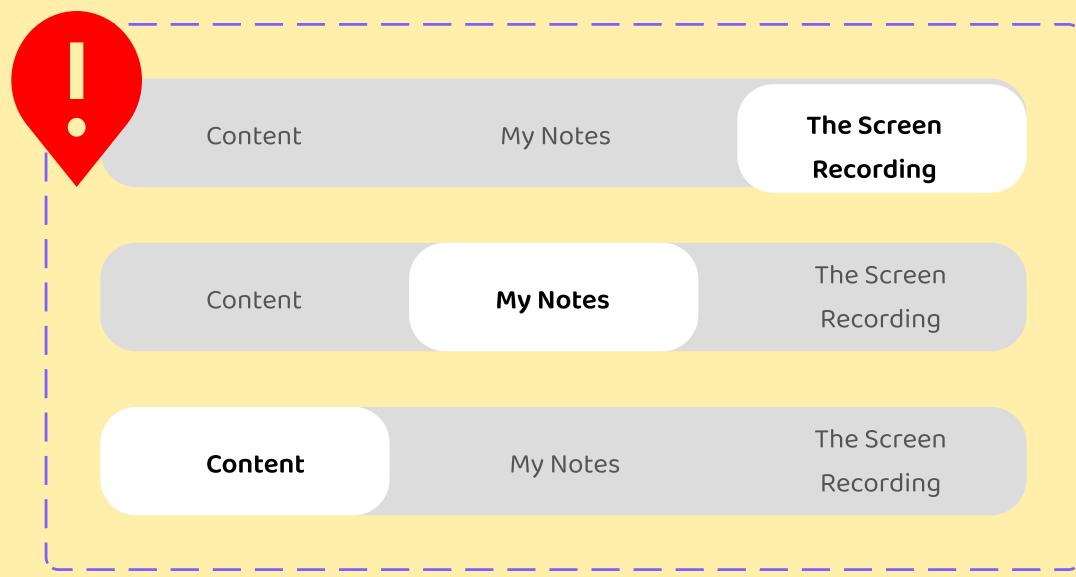
	Ability to upload the assignment	Ability to download class content	Ability to answer to in class quizzes	Understandable language	Easy to understand icons	
User 6						
User 7						
User 8						
User 9						
User 10						
	4/5	5/5	5/5	4/5	5/5	

# Assumption Mapping



### Better order for learning





Having easy language in your product and organizing your data in your category is important for designing for kids.

That is why I have changed the layout of the navigation bar and made the order different.

I have included videos instead of

screen recordings for visual

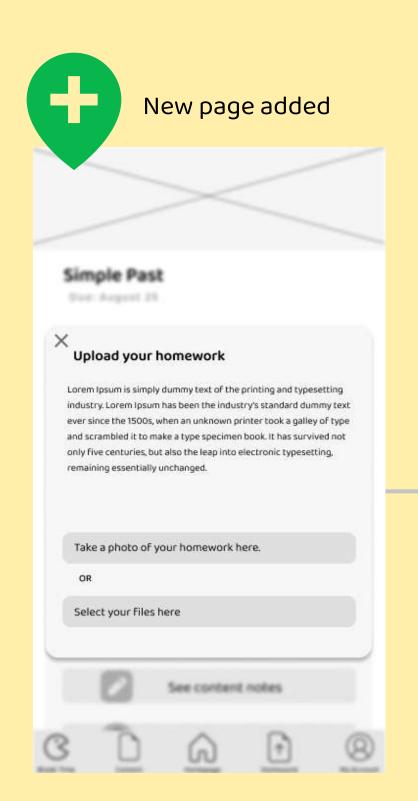
learners in the app and Changed

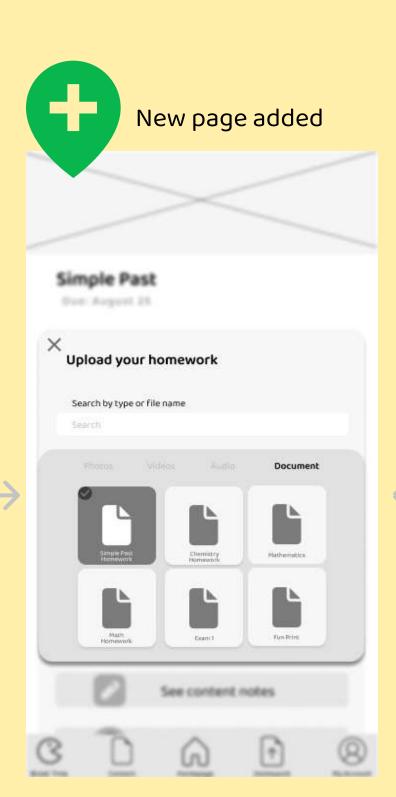
my notes to keep the text light and

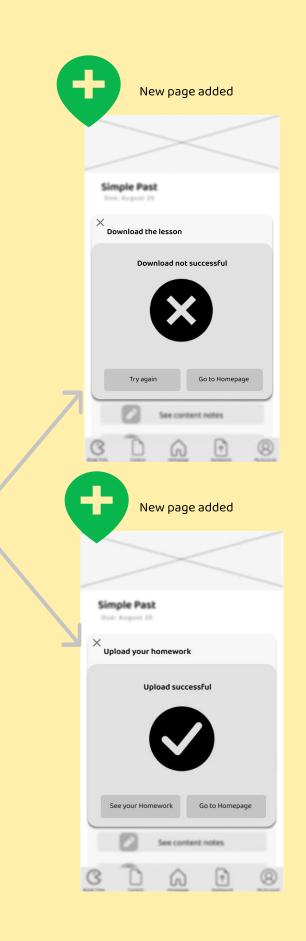
simple.



### Complete flow, Complete test







Having a confirmation page and uploading made the user testing easier and helped most of the testing more clear.

Although I thought having an upload
button will indicate the feeling of
uploading something, User tester didn't
think that they have completed the
task due to lack of confirmation page.



# 09 Next Steps



- Adding break time and my account is going to be the next task that I am going to follow.
- As I have done 2 rounds of user test and made sure the flow is understandable for my users. I will continue making the high fidelity version of the prototype in the next phase of this project.
- Next step of this project will be more about changing the grayscale prototype into a fun interface for young children that help them learn more efficiently.

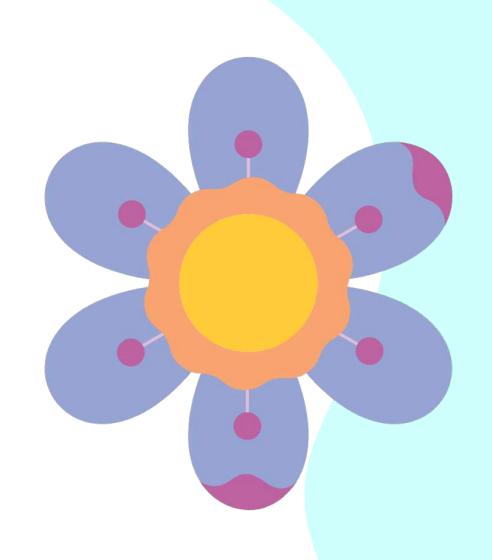


**Ava Golzari**Her parents signed the Minor (Child) Photo Release Form

# 10 Appendix



# Appendix



#### Here you can find my Prototype:

https://www.figma.com/proto/xwgNkk5FUilgza tl2Ha4Ep/Wireframes?node-id=2%3A15&scalin g=min-zoom&page-id=0%3A1&starting-pointnode-id=2%3A15

#### You can find my presentation deck here:

https://www.figma.com/file/n5PCfMsMfuOG Y5PJoXSztH/Parmis\_Meshgi\_CapstoneProp osal?node-id=291%3A2588

# Appendix

#### Design System's for the project:

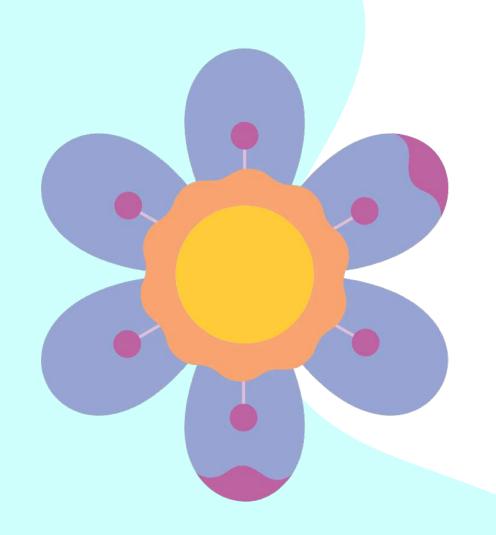
https://www.figma.com/file/4Tulo8QpUNaGXG5sNp2e tn/System-Design-Library?node-id=0%3A1

#### You can see Capstone Part 1 here:

https://www.figma.com/file/n5PCfMsMfuOG Y5PJoXSztH/Parmis\_Meshgi\_CapstoneProp osal?node-id=99%3A330

#### You can see paper interactive prototype here:

https://marvelapp.com/68280da



# Secondary Research

https://www.nngroup.com/articles/children-ux-physical-development/

https://uxdesign.cc/design-considerations-for-little-fingers-ad2a19ed3816

https://www.uxmatters.com/mt/archives/2011/10/effective-use-of-color-and-graphics-in-applications-for-children-part-i-toddlers-and-preschoolers.php#top

https://indesignskills.com/inspiration/free-fonts-childrens-books/

https://www.lifewire.com/best-kid-coloring-apps-4174282

https://atomicdesign.bradfrost.com/chapter-2/#:~:text=Atomic%20design%20is%20atoms%2C%20molecules,parts%20at%20the%20same%20time.

https://www.nngroup.com/articles/childrens-websites-usability-issues/

