Project 1

@ Toddler's Den

Submitted by:

Parth Kapadia
M.Des 2017-19
Interaction Design

Mentored by:

Gautam Arora
Design Head
Toddler's Den

Acknowledgment

This exploration was conducted under the guidance of Mr. Gautam Arora at Toddler's Den, his mentorship and guidance has greatly influenced the completion of this project for which I'm thankful. I also extend my gratitude to the entire Teal labs team for participating and aiding me throughout the project.

This project wouldn't have been possible without the help of Treemouse studios. Their timely denial for internship led me to finding this great opportunity.

I would also like to thank all the staff members of AIS school who went out of their way to aid this project. Last but not the least I would like to thank my parents for enduring my longest stay at home since past few years.

Table of contents

Introduction

Educational technology is "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources".

Educational technology is the use of both physical hardware and educational theoretics. It encompasses several domains including learning theory, computer-based training, online learning, and where mobile technologies are used, m-learning. Accordingly, there are several discrete aspects to describing the intellectual and technical development of educational technology:

- Educational technology as the theory and practice of educational approaches to learning.
- Educational technology as technological tools and media that assist in the communication of knowledge, and its development and exchange.
- Educational technology for learning management systems (LMS), such as tools for student and curriculum management, and education management information systems (EMIS).
- Educational technology as back-office management, such as trainintg management systems for logistics and budget management, and Learning Record Store (LRS) for learning data storage and analysis.
- Educational technology itself as an educational subject; such courses may be called "Computer Studies" or "Information and communications technology (ICT)".

An educational technologist is someone who is trained in the field of educational technology. Educational technologists try to analyze, design, develop, implement, and evaluate process and tools to enhance learning.

At Toddler's Den, their team of educators, researchers, and designers has defined their own child-centred approach to pre-school education.
Their goal is to enable learners to construct their own meaning, to have a strong sense of identity, and to be creative, resilient, and inquiry driven citizens.

As part of toddle program, children are given the tools and support to steer through their own distinct paths of discovery. Their pedagogical philosophy is inspired by the IB PYP and the Reggio Emilia approach.

Guiding principles at Toddlers Den

Whole child development through play-based inquiry

Their inquiry-based approach encourages children to be active participants in the learning process and to develop the skills needed to explore their ideas, interests, and questions in a meaningful way.

Empowering teachers to make a difference

Teachers at Toddler's Den wear many hats. They are designers, facilitators, role models, and most importantly, loving and nurturing individuals. They encourage child initiated activity and challenge and provoke ideas through open-ended questioning.

Proactive partnership with parents

They work together with parents to ensure that both home and school environments provide a mutually supportive framework for children's education.

Creating an enabling environment

Their learning spaces are set up in a provocative manner so as to engage all senses. They design their preschools with only one aspiration - they should be magical places that children love coming back to everyday.

Toddle curriculum

At Toddle's backend is a play-based curriculum created by alumni and faculty members of Stanford and Harvard Graduate Schools of Education. Toddle's curriculum has been created after 25+ years of research in early childhood education and borrows from the best practices in the Montessori, Reggio Emilia, Waldorf, and IB PYP schools of thought. The primary goals of the curriculum are:

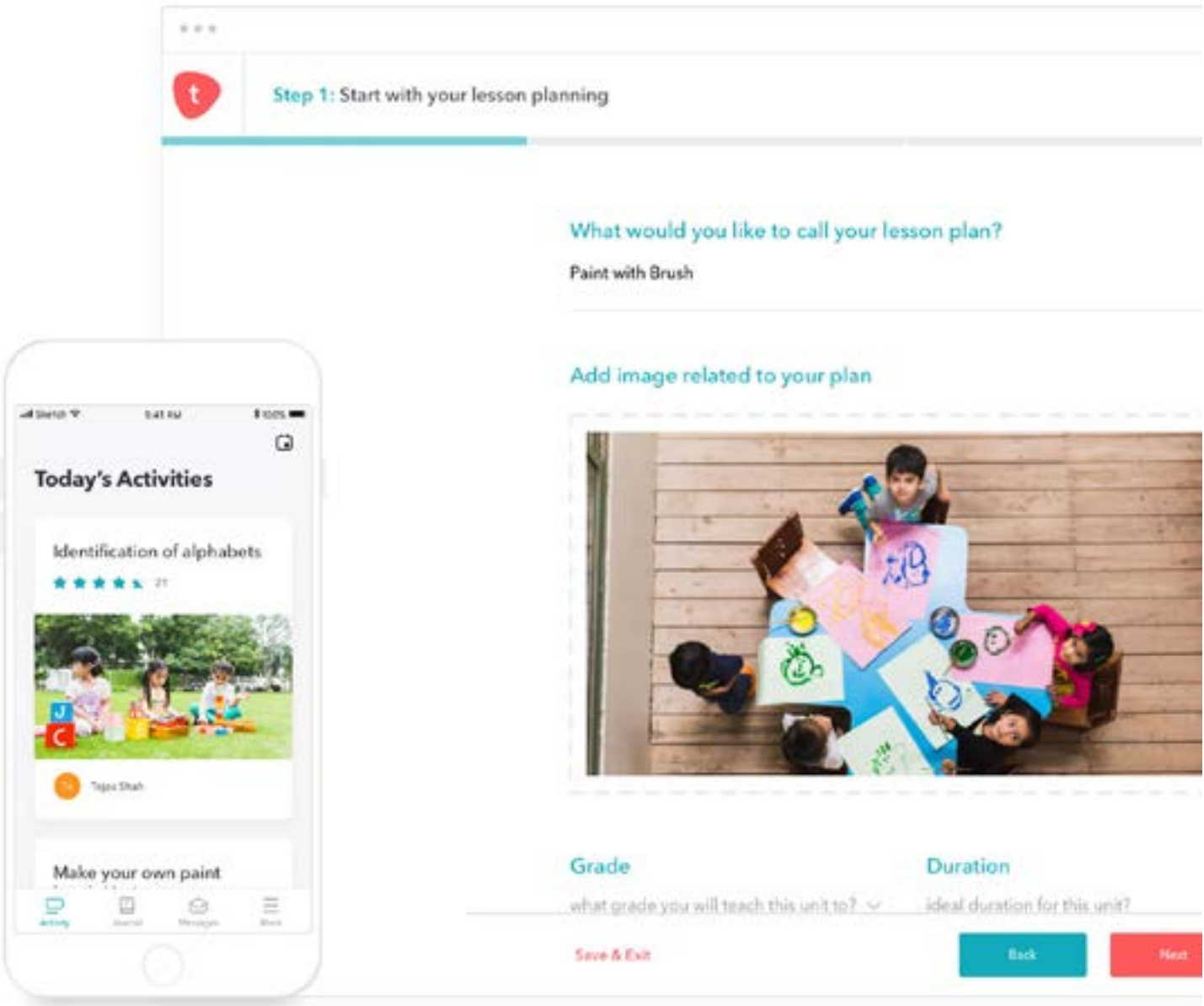
- Helping children develop positive attitudes towards learning
- Promoting strong relationships through collaboration and inquiry
- Developing self regulation through play and risk taking
- Building strong literacy and mathematical behavior

Toddle lets teachers create engaging lesson plans, document each child's learning journey, and communicate with parents with specificity.

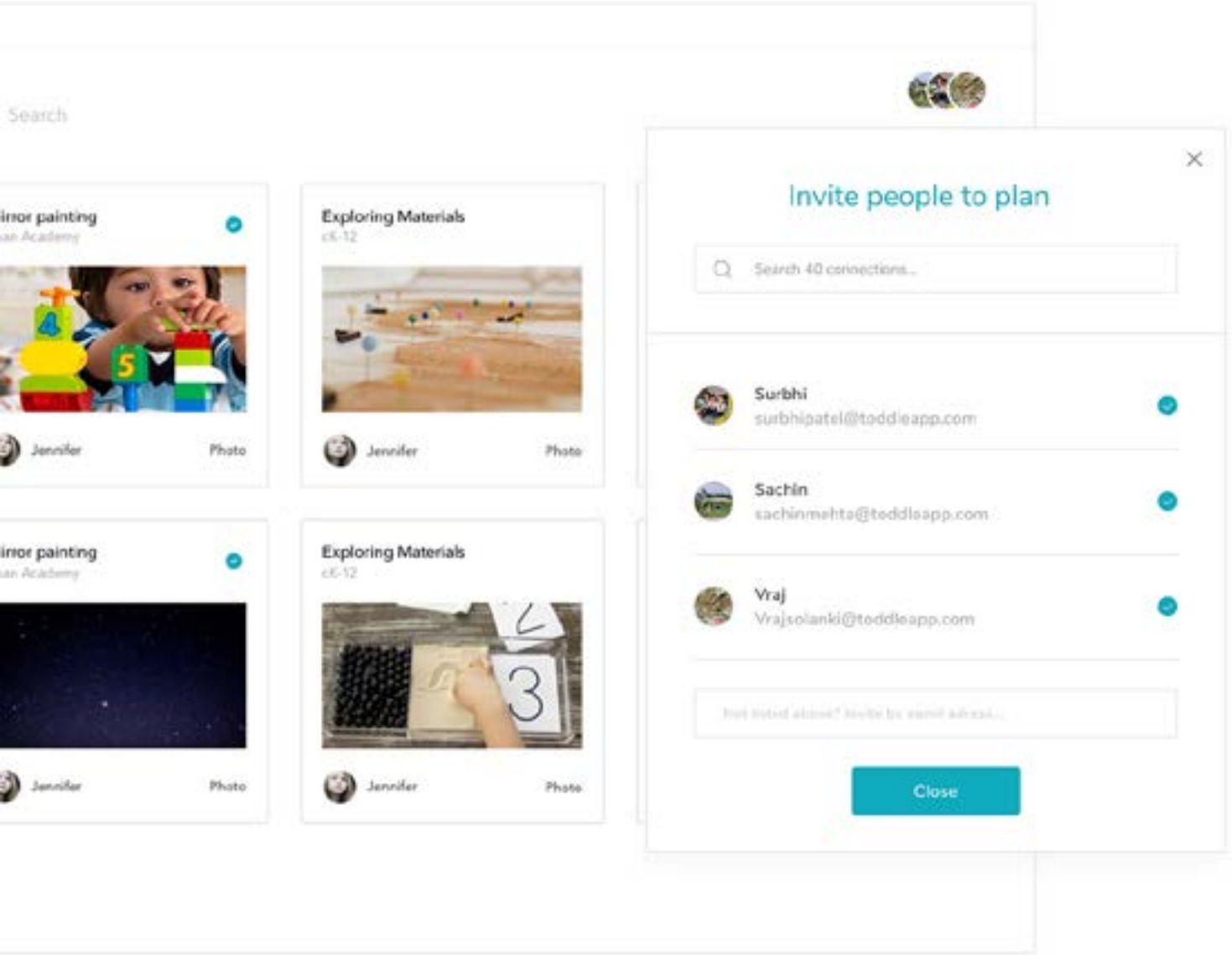
Features of toddle

Start implementing engaging learning experiences from day one

Toddle comes with an inbuilt repository of yearly plans, unit plans, and 500+ play-based activities for 1 to 6 year olds.



Features of toddle



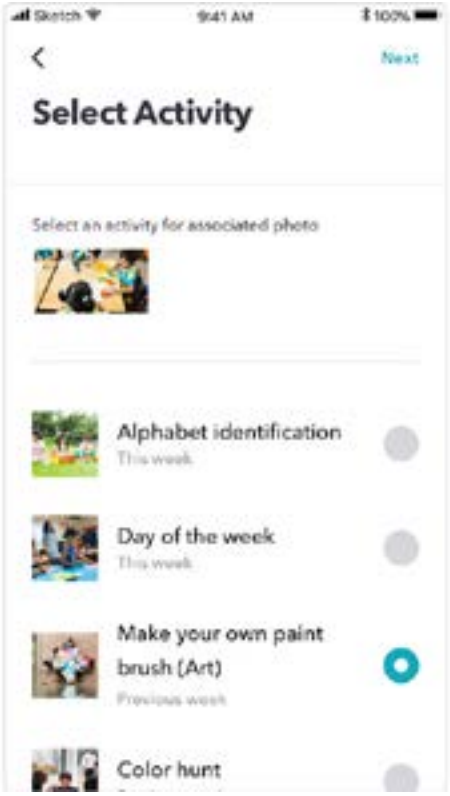
Plan collaboratively

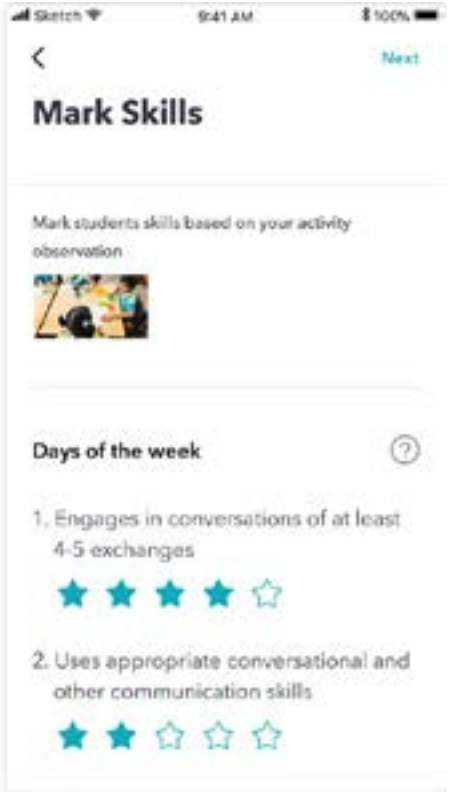
Toddle allows teachers to work together to create meaningful learning experiences.

Features of toddle

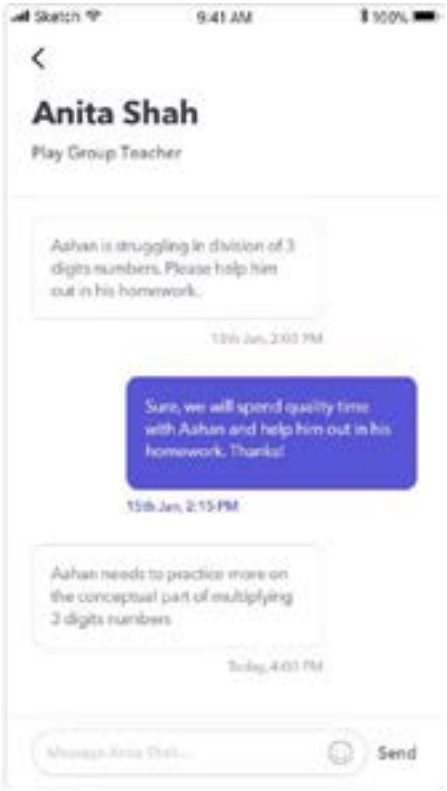
Document authentically and holistically

Toddle allows teachers to document each child's learning journey through photos, videos, and audio notes across 8 areas of development.





Features of toddle



Share the joy with families

Toddle gives families an immediate and personalised window into their child's school day and makes communication with teachers seamless.

My contibution towards toddle

I was actively involved in development of Toddle teacher app which enables the teachers to document each child's learning journey through photos, videos, and audio notes across 8 areas of development. The 8 areas of development are Math, Language and Literacy, Physical development, Science and Tech, Social studies, Arts, Social Emotional Development and Cognitive Development.

My work mainly encompassed around making the app usable and making sure that it complies by the basic guidelines of designing interfaces. The basic guidelines are the eight principles set by Shneiderman and somewhat overlapping with ten Nielsen and Molich's heuristic principles.

Initially I was documenting the design changes required by pointing at every screens but was advised by my mentor to rather just note down the actionables in an excel sheet to keep up with the pace. Eventually after finding out the shortcomings I prototyped the iterations for the interfaces.

Apart from Toddle teacher app, I was engaged in developing the scheduler for the web portal which allows teachers to schedule their units across the year, week and on daily basis.

Secondary research

See-saw

Seesaw's educational app lets students save and share their assignments with their teachers, parents, and fellow classmates. They just snap a photo or video, draw, or write.

But rather than just the finished product, students can add audio narration or doodled annotation to show how they got there. This lets teachers identify where students went wrong when they make mistakes.

Seesaw sounds simple but solves some major problems. It lets teachers easily collect assignments and track a student's progress over time. When parents want to know what their kid did at school, rather than asking and getting the same moody "nothing!", they can just look in Seesaw. Students learn 21st century technology skills while getting faster feedback on work and an audience that encourages them to try harder.

Instead of banning personal technology in the classroom, Seesaw lets teachers embrace it.

Airbnb Design

Instagram

Brightwheel

Brightwheel's mobile app helps pre-K teachers and care providers to manage their business, while sending parents updates about their kids throughout the school day. The app handles payments, and records sign-in and sign-out data when parents drop off or pick up kids at school. Caregivers can also use it to share photos and information with parents through a secured platform rather than giving them notes on paper, or sending them ad hoc through text messages, or social networks like Facebook.

Designing interfaces by Jenifer Tidwell

Designing Interfaces provides solutions to common design problems that you can tailor to the situation at hand.

Designing with mind in mind by Jeff Jhonson

Pixel Perfect Precision

iOS design guidelines

Mail chimp for copy

Neilsen and Molisch's heuristic principles

- Visibility of system status. Users should always be informed of system operations with easy to understand and highly visible status displayed on the screen within a reasonable amount of time.
- Match between system and the real world. Designers should endeavor to mirror the language and concepts users would find in the real world based on who their target users are. Presenting information in logical order and piggybacking on user's expectations derived from their real-world experiences will reduce cognitive strain and make systems easier to use.
- User control and freedom. Offer users a digital space where backward steps are possible, including undoing and redoing previous actions.
- Consistency and standards. Interface designers should ensure that both the graphic elements and terminology are maintained across similar platforms. For example, an icon that represents one category or concept should not represent a different concept when used on a different screen.
- Error prevention. Whenever possible, design systems so that potential errors are kept to a minimum. Users do not like being called upon to detect and remedy problems, which may on occasion be beyond their level of expertise. Eliminating or flagging actions that may result in errors are two possible means of achieving error prevention.
- Recognition rather than recall. Minimize cognitive load by maintaining task-relevant information within the display while users explore the interface. Human attention is limited and we are only capable of maintaining around five items in our short-term memory at one time. Due to the limitations of short-term memory, designers should ensure users can simply employ recognition instead of recalling information across parts of the dialogue. Recognizing something is always easier than recall because recognition involves perceiving cues that help us reach into our vast memory and allowing relevant information to surface. For example, we often find the format of multiple choice questions easier than short answer questions on a test because it only requires us to recognize the answer rather than recall it from our memory.
- Flexibility and efficiency of use. With increased use comes the demand for less interactions that allow faster navigation. This can be achieved by using abbreviations, function keys, hidden commands and macro facilities. Users should be able to customize or tailor the interface to suit their needs so that frequent actions can be achieved through more convenient means.

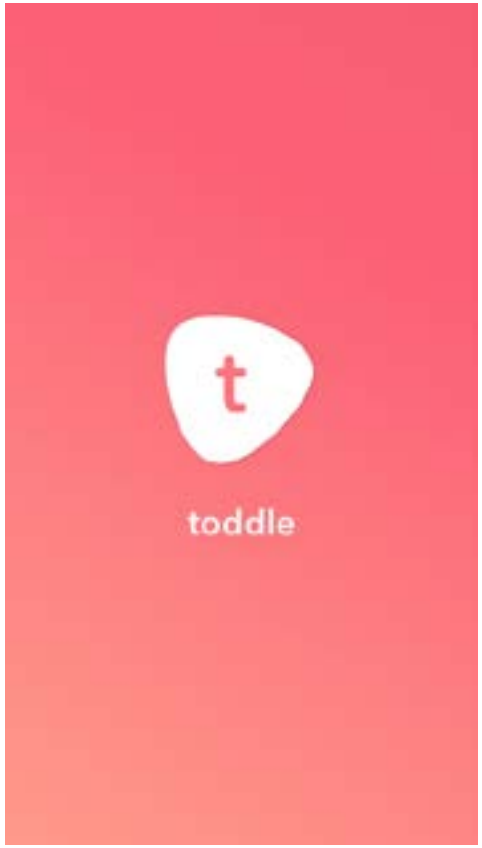
- Aesthetic and minimalist design. Keep clutter to a minimum. All unnecessary information competes for the user's limited attentional resources, which could inhibit user's memory retrieval of relevant information. Therefore, the display must be reduced to only the necessary components for the current tasks, whilst providing clearly visible and unambiguous means of navigating to other content.
- Help users recognize, diagnose and recover from errors. Designers should assume users are unable to understand technical terminology, therefore, error messages should almost always be expressed in plain language to ensure nothing gets lost in translation.
- Help and documentation. Ideally, we want users to navigate the system without having to resort to documentation. However, depending on the type of solution, documentation may be necessary. When users require help, ensure it is easily located, specific to the task at hand and worded in a way that will guide them through the necessary steps towards a solution to the issue they are facing.

8 Golden Rules by Ben Shneiderman

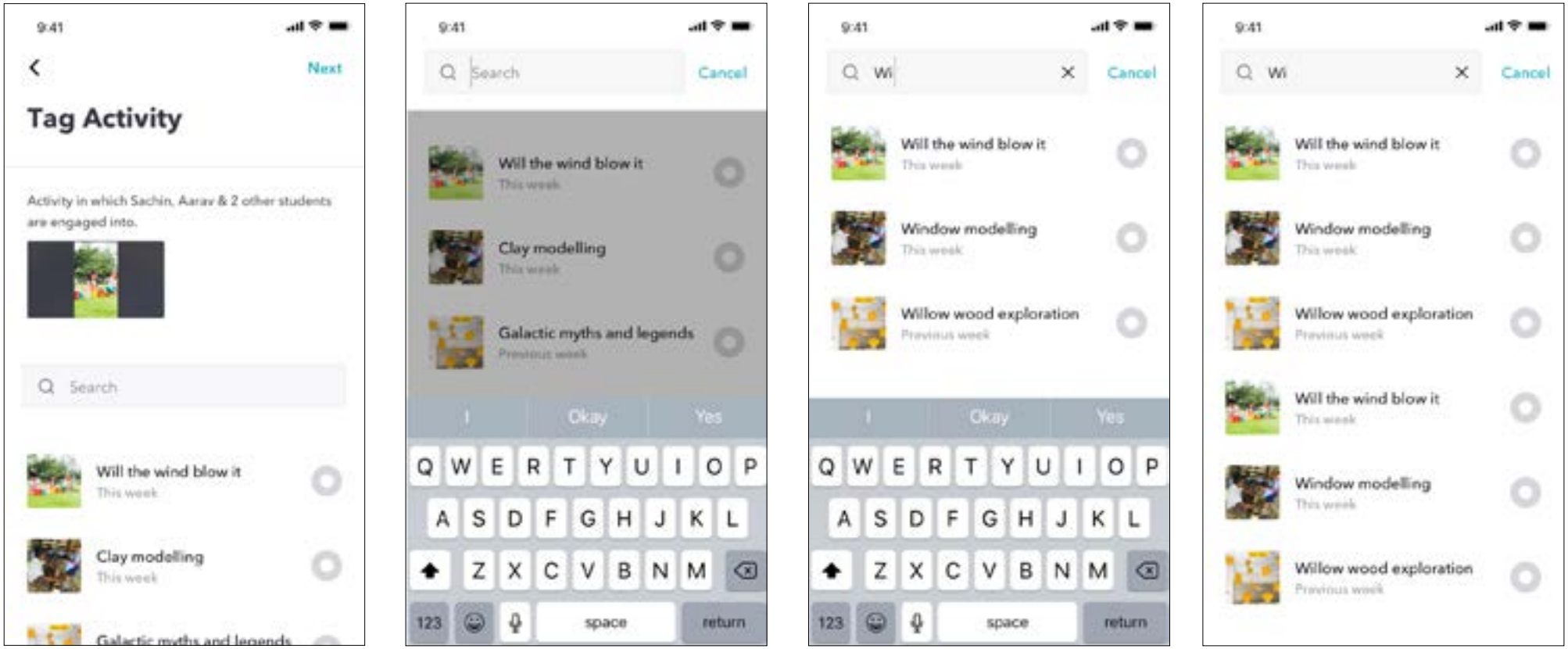
- Strive for consistency by utilizing familiar icons, colors, menu hierarchy, call-to-actions, and user flows when designing similar situations and sequence of actions. Standardizing the way information is conveyed ensures users are able to apply knowledge from one click to another; without the need to learn new representations for the same actions. Consistency plays an important role by helping users become familiar with the digital landscape of your product so they can achieve their goals more easily.
- Enable frequent users to use shortcuts. With increased use comes the demand for quicker methods of completing tasks. For example, both Windows and Mac provide users with keyboard shortcuts for copying and pasting, so as the user becomes more experienced, they can navigate and operate the user interface more quickly and effortlessly.
- Offer informative feedback. The user should know where they are at and what is going on at all times. For every action there should be appropriate, human-readable feedback within a reasonable amount of time. A good example of applying this would be to indicate to the user where they are at in the process when working through a multi-page questionnaire. A bad example we often see is when an error message shows an error-code instead of a human-readable and meaningful message.
- Design dialogue to yield closure. Don't keep your users guessing. Tell them what their action has led them to. For example, users would appreciate a "Thank You" message and a proof of purchase receipt when they've completed an online purchase.
- Offer simple error handling. No one likes to be told they're wrong, especially your users. Systems should be designed to be as fool-proof as possible, but when unavoidable errors occur, ensure users are provided with simple, intuitive step-by-step instructions to solve the problem as quickly and painlessly as possible. For example, flag the text fields where the users forgot to provide input in an online form.
- Permit easy reversal of actions. Designers should aim to offer users obvious ways to reverse their actions. These reversals should be permitted at various points whether it occurs after a single action, a data entry or a whole sequence of actions.
- Support internal locus of control. Allow your users to be the initiators of actions. Give users the sense that they are in full control of events occurring in the digital space. Earn their trust as you design the system to behave as they expect.
- Reduce short-term memory load. Human attention is limited and we are only capable of maintaining around five items in our short-term memory at one time. Therefore, interfaces should be as simple as possible with proper information hierarchy, and choosing recognition over recall. Recognizing something is always easier than recall because recognition involves perceiving cues that help us reach into our vast memory and allowing relevant information to surface.

Design Prototypes

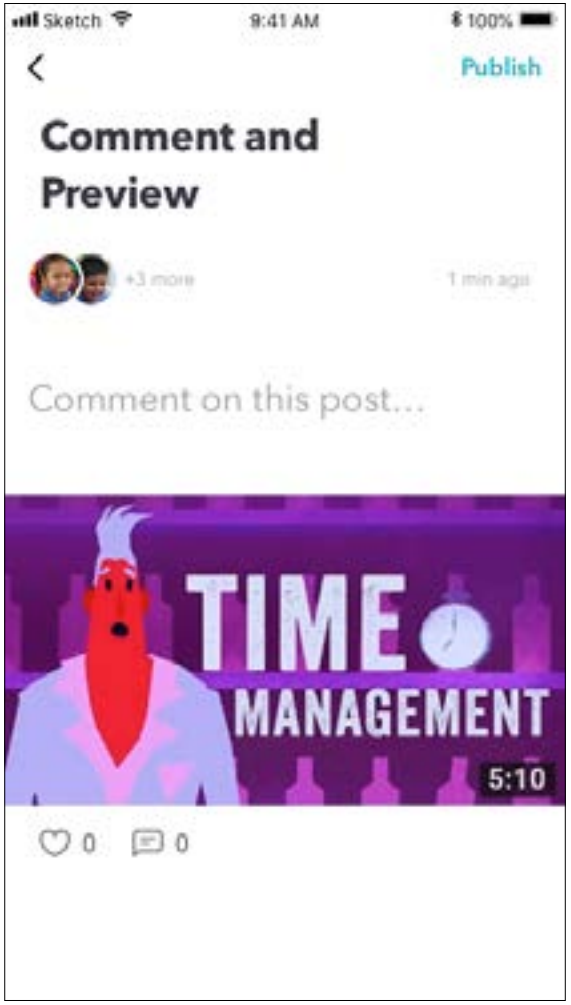
Paper prototyping followed by digital prototyping

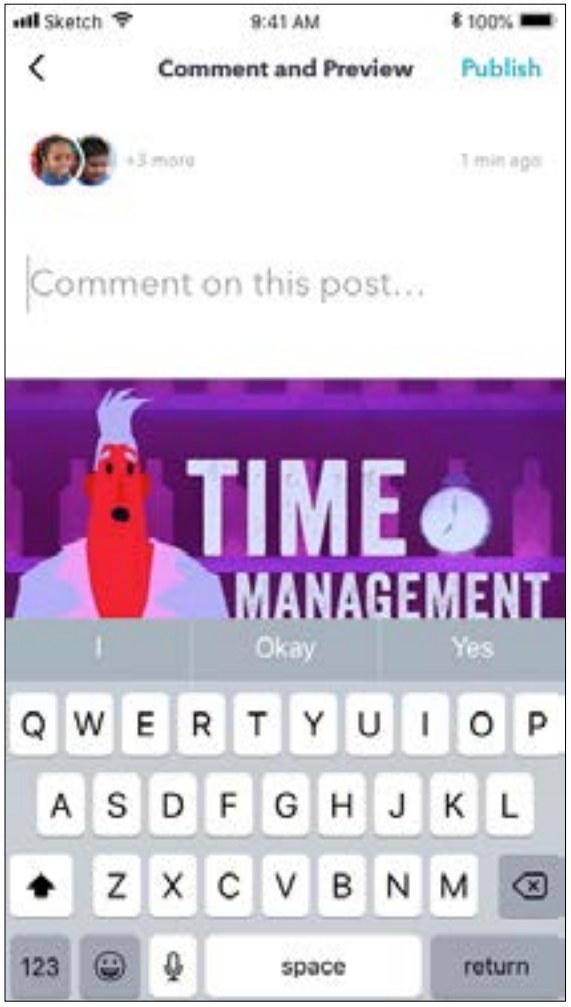


Some onboarding screens



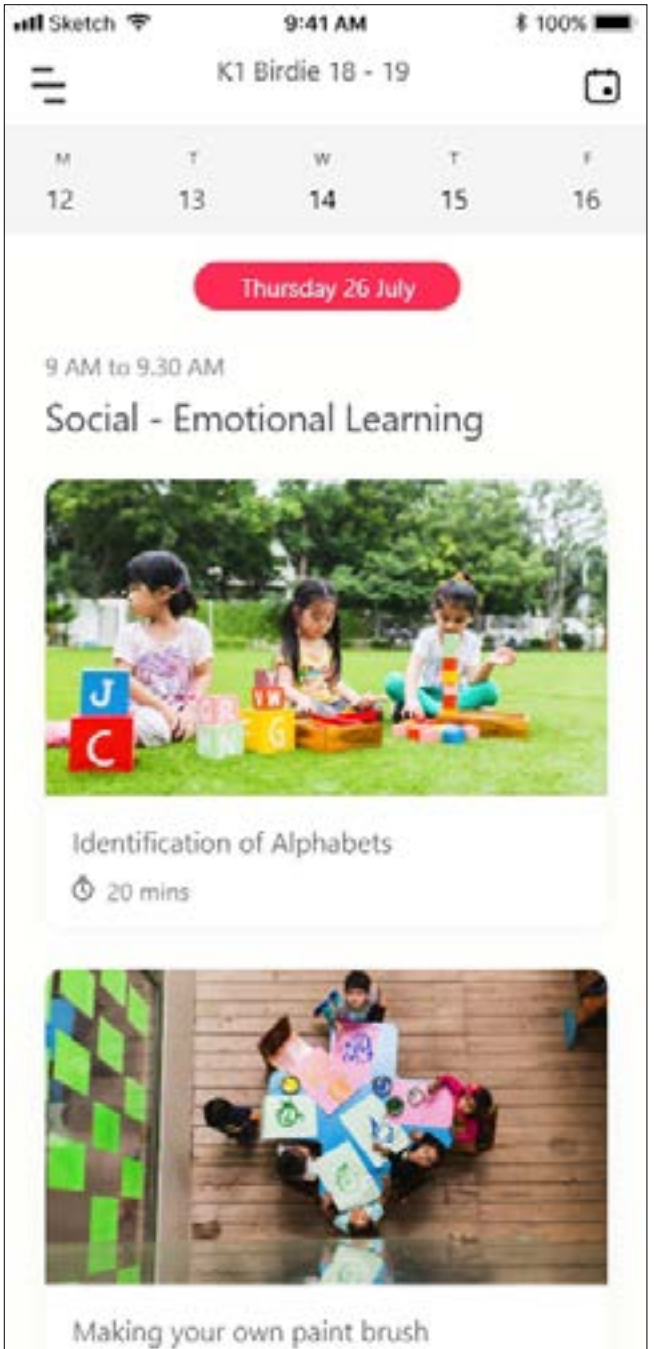
User flow of how search works
Left to right



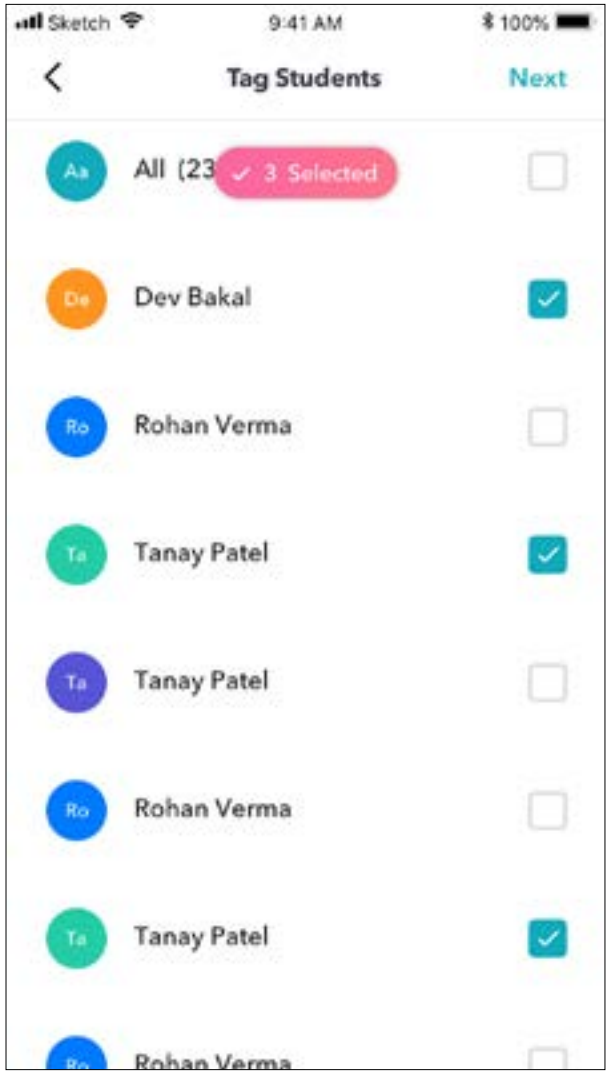


Publishing a post involved 5 sequential steps which was reduced down to 4 with this design therby enhancing its experience and helping user achieve their goal quickly.

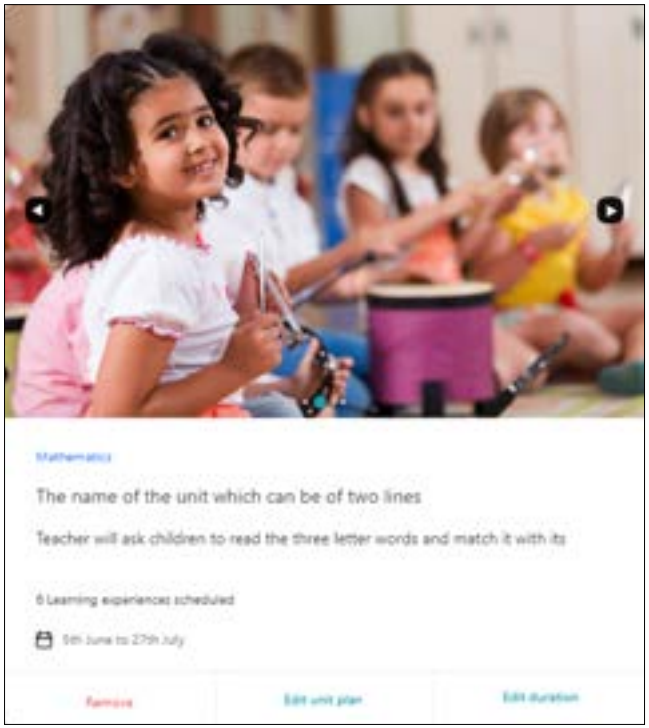
Some explorations with top navigation and card design

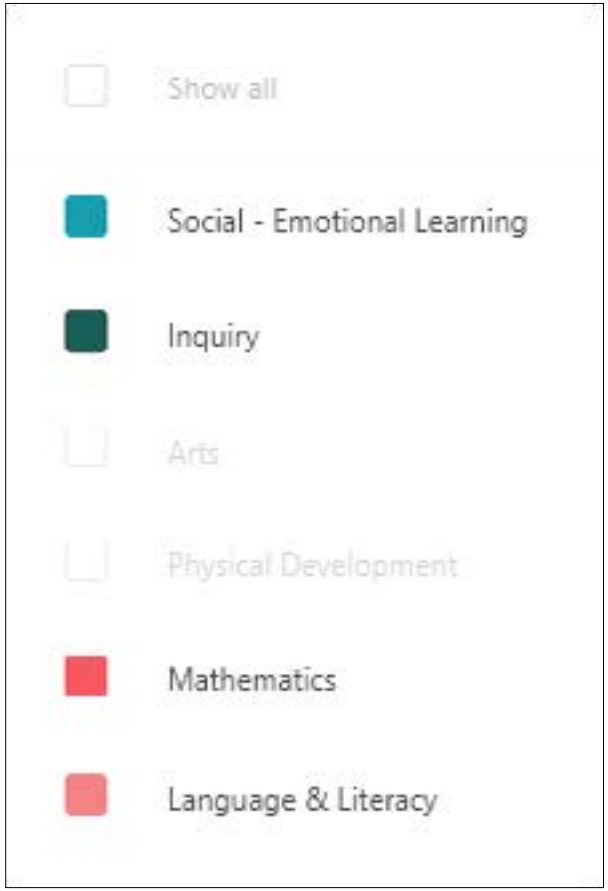


Calendar, list view and toast design

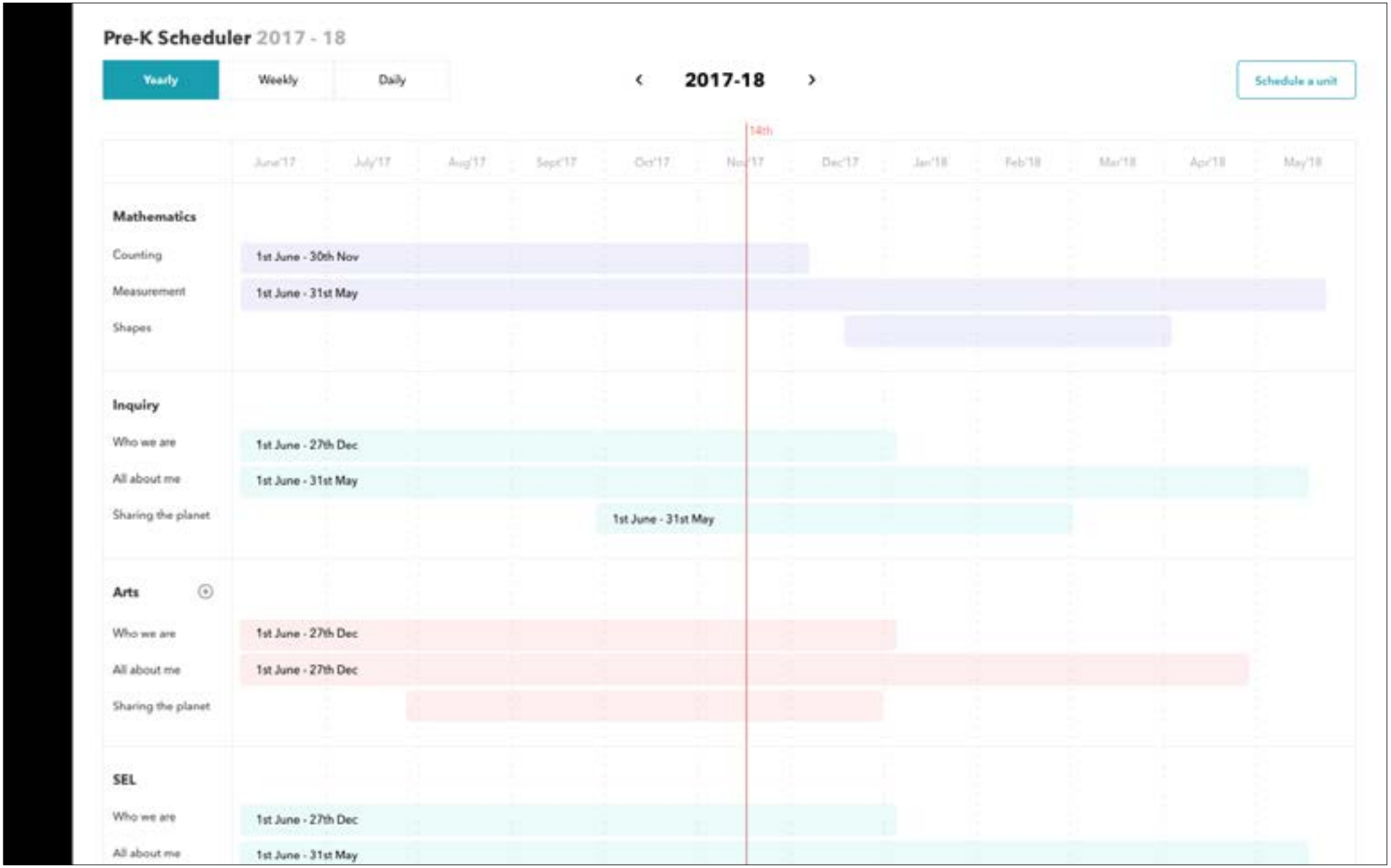


Card and dropdown filter menu design

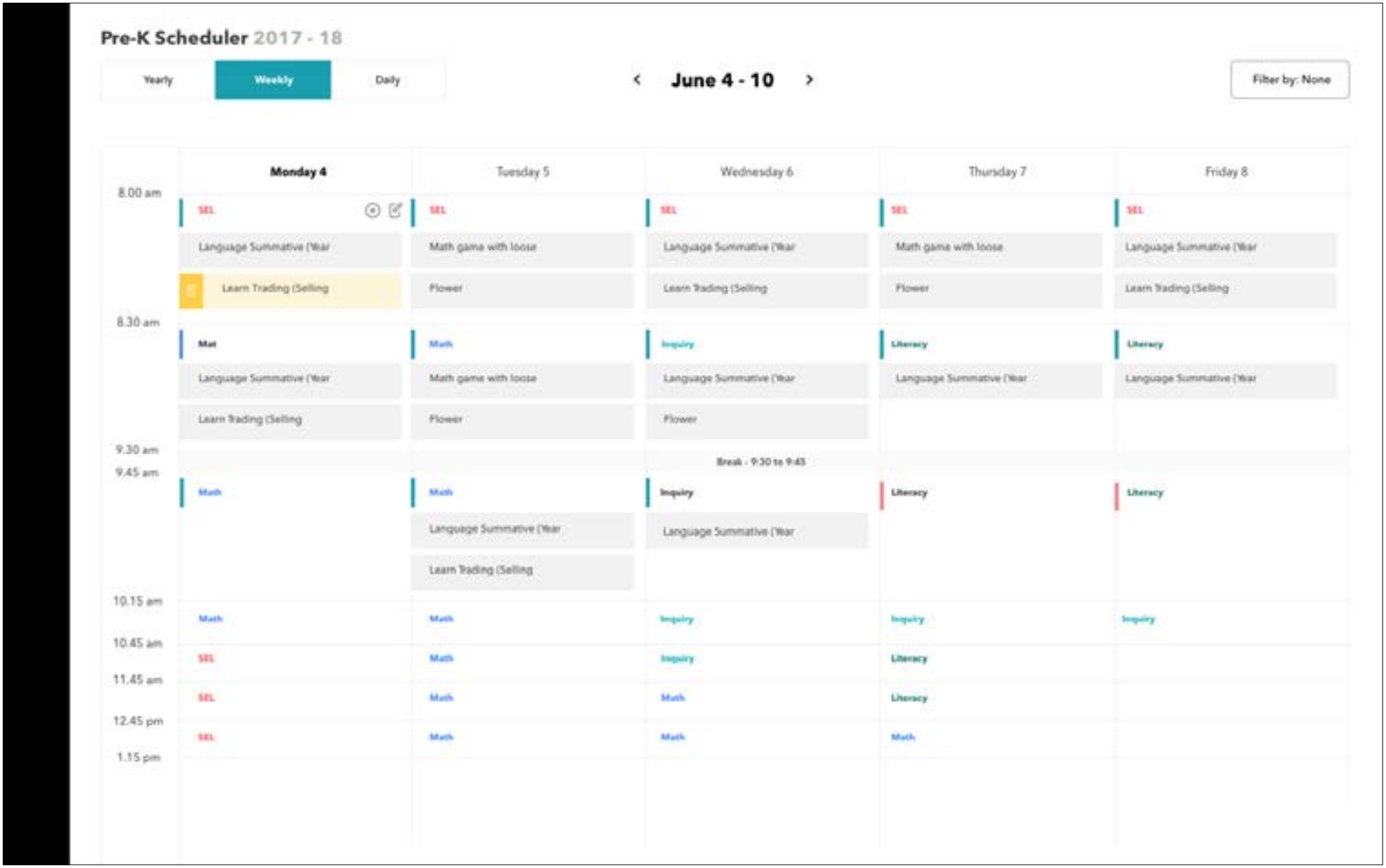




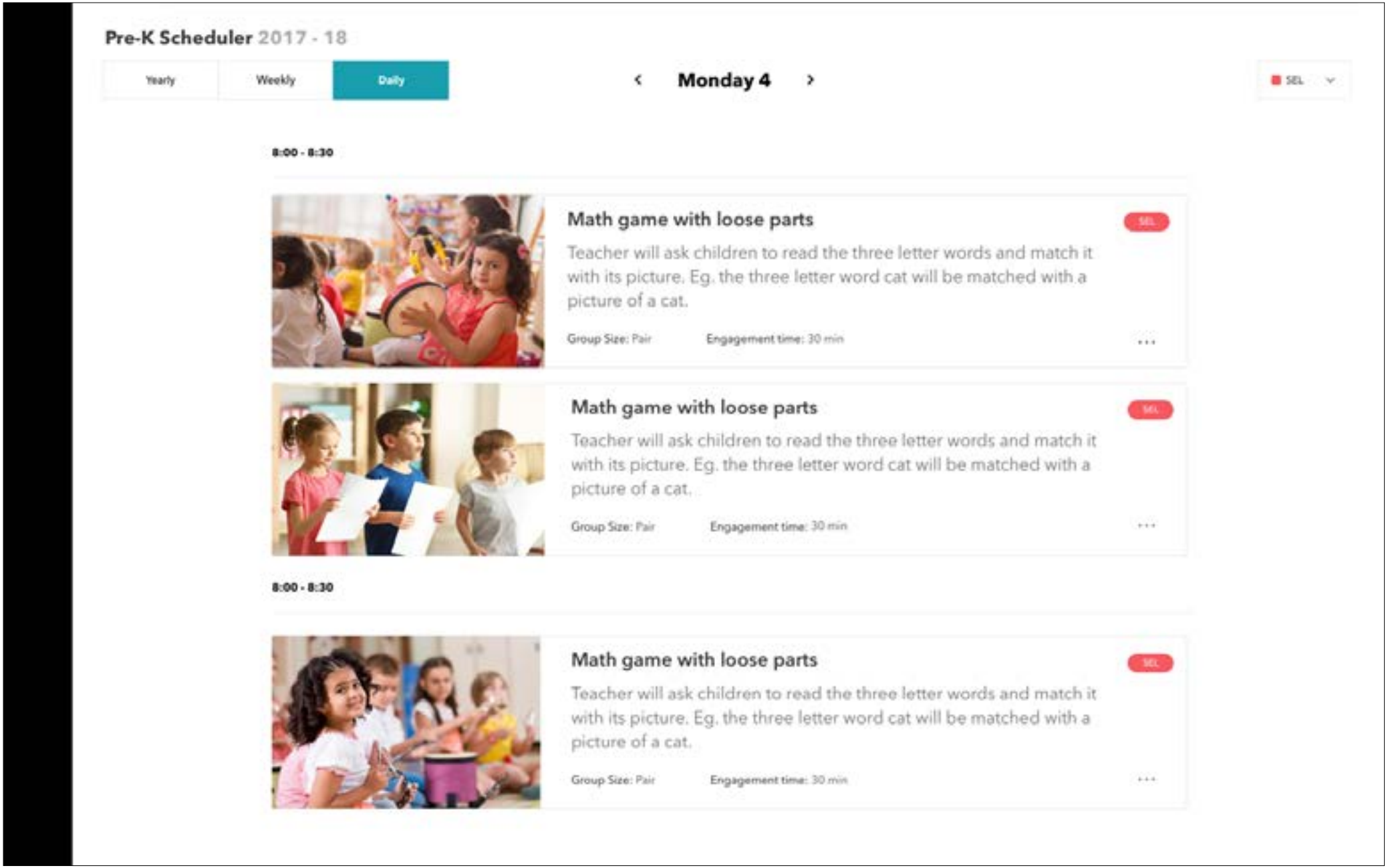
Annual scheduler design



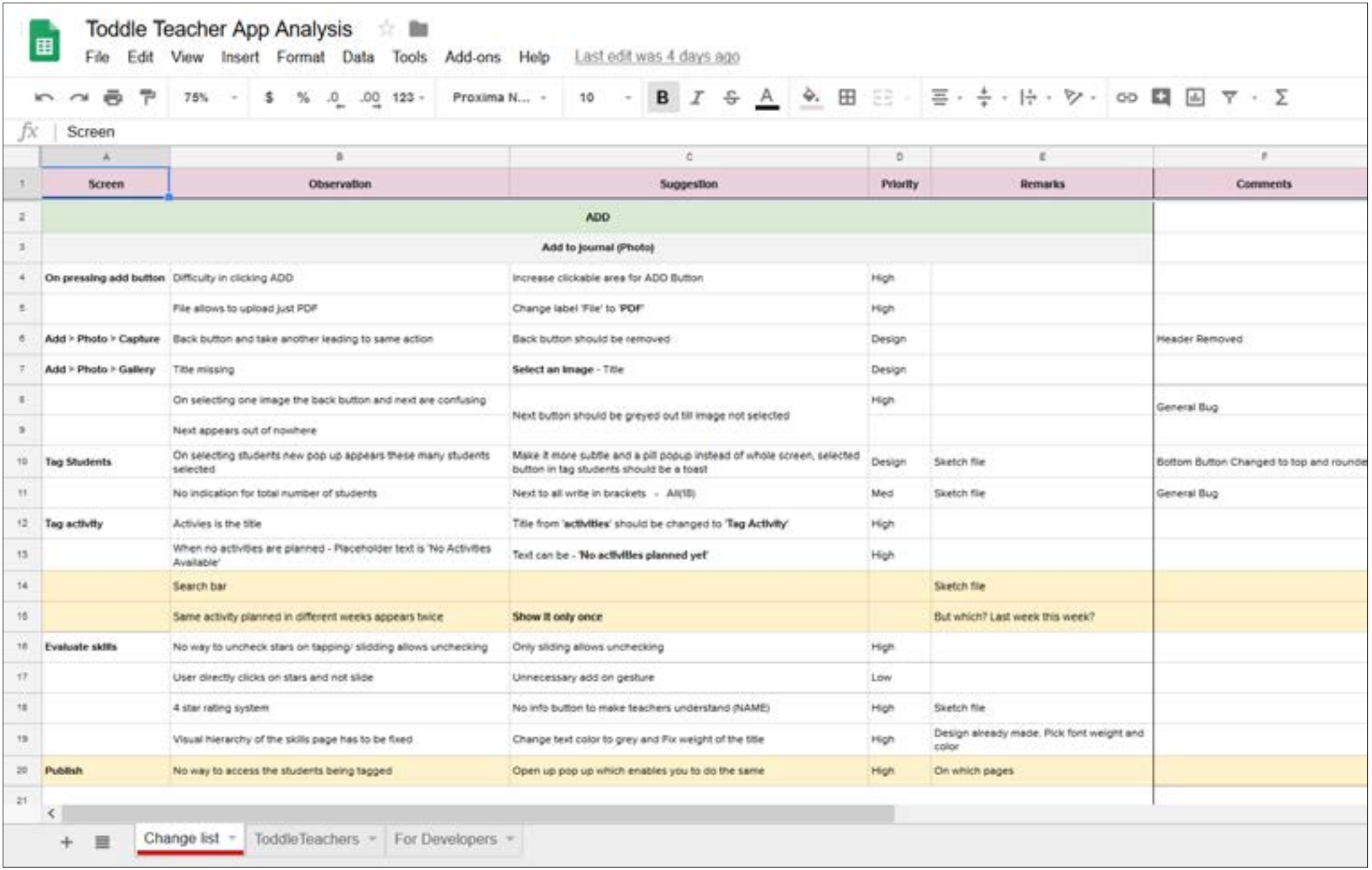
Weekly scheduler design



Daily scheduler design



Snap of some other design changes recommended



Toddle Teacher App Analysis

File Edit View Insert Format Data Tools Add-ons Help Last edit was 4 days ago

Screen

	Screen	Observation	Suggestion	Priority	Remarks	Comments
2			**ADD**			
3			**Add to journal (Photo)**			
4	**On pressing add button**	Difficulty in clicking ADD	Increase clickable area for ADD Button	High		
5		File allows to upload just PDF	Change label 'File' to **'PDF'**	High		
6	**Add > Photo > Capture**	Back button and take another leading to same action	Back button should be removed	Design		Header Removed
7	**Add > Photo > Gallery**	Title missing	**Select an image** - Title	Design		
8		On selecting one image the back button and next are confusing	Next button should be greyed out till image not selected	High		General Bug
9		Next appears out of nowhere				
10	**Tag Students**	On selecting students new pop up appears these many students selected	Make it more subtle and a pill popup instead of whole screen, selected button in tag students should be a toast	Design	Sketch file	Bottom Button Changed to top and rounde
11		No indication for total number of students	Next to all write in brackets - All(18)	Med	Sketch file	General Bug
12	**Tag activity**	Activies is the title	Title from **'activities'** should be changed to **'Tag Activity'**	High		
13		When no activities are planned - Placeholder text is 'No Activities Available'	Text can be - **'No activities planned yet'**	High		
14		Search bar			Sketch file	
15		Same activity planned in different weeks appears twice	**Show it only once**		But which? Last week this week?	
16	**Evaluate skills**	No way to uncheck stars on tapping/ slidding allows unchecking	Only sliding allows unchecking	High		
17		User directly clicks on stars and not slide	Unnecessary add on gesture	Low		
18		4 star rating system	No info button to make teachers understand (NAME)	High	Sketch file	
19		Visual hierarchy of the skills page has to be fixed	Change text color to grey and Fix weight of the title	High	Design already made. Pick font weight and color	
20	**Publish**	No way to access the students being tagged	Open up pop up which enables you to do the same	High	On which pages	
21						

Change list | ToddleTeachers | For Developers

Learnings

Improved drastically from visual design point of view.

Understood the different levels in education technology

How important are brand guidelines for faster work flow

Agile methodology of working

How to prioritise work and drop certain things for second version

Kickstarted my reading habit

Familiarised myself with MacOS and learnt to use prototyping tools like Sketch

How designs are passed from designers to developers

Got acquianted with many UI design terminology

Pro & Cons @Toddler's Den

PRO

Flexibility in work hours

I could directly interact with all team members

Engineers had decent design thinking approach which made operations easier

It was possible to have multiple 1 to 1 sessions with my mentor

Startup culture let me explore various domains from marketing to operations to engineering apart from designing

Cricket at end of day

CONS

Agile methodology led to incompleteness in the product at every level

The first client were themselves which did not make them put unnecessary pressure on themselves with deadlines.

Too many family members involved which did not lead to fostering of proffesional environment.

References

[1] www.toddleapp.com

[2] www.todden.com

[3]www.interaction-design.org/literature/article/shneiderman-s-eight-golden-rules-will-help-you-design-better-interfaces

[4]www.nngroup.com/articles/ten-usability-heuristics/

[5] libgen.io for books

[6] Designing interfaces by Jenifer Tidwell