aru

Design Specification
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Advised by

iF intentional futures

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Problem Space

Preface

Sensory processing disorder (SPD) affects 4.7 million people globally. The medical community has only recently recognized SPD as a formal condition, making it difficult for individuals with the disorder and those who care for them to find helpful and reliable information.

What is sensory process?

Sensory processing is the brain's way of organizing and making sense of information received from your seven senses – sight, smell, taste, hearing, touch, vestibular (balance), and proprioception (knowing where your body is in space).

What is sensory processing disorder?

Sensory processing disorder arises when the brain processes this information differently, causing over responsiveness to environmental stimuli. The condition is particularly prevalent among neurodivergent children such as those with Autism Spectrum Disorder.

Why does this matter?

SPD causes children to encounter grave difficulty participating in society. In order to thrive, children with sensory complexities require their parents to seek out early intervention on their behalf. They are required to quickly gain expertise about the manifestations of their child's condition. To do so, they must navigate massive amounts of information and are often disconnected from others who have experience with this condition. These factors impede their ability to provide for their children.

Research

By talking to parents and pediatric health professionals both in Seattle and across the country, we learned of the various barriers parents face when trying to provide their children with a supportive and thriving upbringing.

Our research provided the team with an abundance of insights, however, 3 of those insights drove our final design:

1. Parents lack support in navigating the massive amounts of information to identify necessary interventions.

2. Parents struggle to identify a support network until one point of entry exposes a wealth of community and resources.

3. Advice from more experienced parents is valued above professional recommendations because it allows new parents to identify and prioritize interventions that reduce the burden of trial and error.

Design Principles

Coupled with the insights from our research, we created five key principles that directed our design:

Forge connections
Accessing and forming support networks exposes a wealth of resources while eliminating isolation and insulating families from societal misconceptions. The design should provide opportunities to link users with other people who have a common understanding or similar experiences.

Create efficiency
The design should expedite the process of finding effective interventions by delivering efficient use of the system to the user. New parents, in contrast to the recommendations received from professionals, are more likely to experience success when trying out the highly contextualized advice of a more experienced parent.

Circulate stories
Give parents stories that show them what thriving kids with constantly evolving sensory complexity looks like. The design should circulate personal stories of success that catalyze the user towards trying new and creative solutions.

Accept & encourage the user's emotional journey
Parenting a child with sensory complexity is a life-long adjustment and parents experience a range of reactions. To support acceptance around identification and advance providing necessary treatment, the design should anticipate and acknowledge the user's emotional journey.

Avoid othering
Emotional problems can be heightened when parents lack access to an understanding community who are familiar with the behaviors of children with sensory complexity. Design decisions should not further ostracize the user.

Design Solution

Aru

Aru is a responsive web-based knowledge community for parents of children with sensory complexities. It is a closed community that requires registration. When parents have a question, they can seek the answers by either searching the community's knowledge base or submitting a question directly to the community. The Aru community includes parents, caregivers, occupational therapists, pediatricians, and other related professionals. Aru's user interface and dynamic AI system work together to provide parents a personalized information experience by serving up the answers relevant to their child's unique situation.

AI Driven Information Exchange

In contrast to operating as a traditional social networking site (e.g.Facebook) or functioning as a question-and-answer platform(e.g.Quora), Aru facilitates information sharing by employing an AI recommender system and search engine. Aru's recommender is an intelligent system that personalizes users' feeds based upon self-identified preferences at onboarding as well as analyzing users' usage over time. Additionally, Aru's search engine subtly guides users in creating and reformulating queries. Using as-you-type suggestions including auto-complete, auto-suggest, and instant results help users save time, iterate upon their searches, and get the results they need.

Ethics and Privacy

Safe Environment

Aru facilitates the sharing of important information to a sensitive user population. To foster a safe environment and ensure the veracity of information, Aru follows the guidelines written below. These would be updated to remain aligned with best practices.

Gated community
In order to establish a safe and secure environment and to maintain trustworthiness, Aru is a closed community. Members seeking to join must register and receive notification of acceptance. Non–members are unable to access Aru, which ensures all comments or activity of community members remains confidential to the community.

Do not make medical recommendations
Members are not permitted to make medical recommendations of any kind. The content on Aru, including, but not limited to, the text, graphics, images, links, and other materials are for informational purposes only. The content is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

Transparency of AI
To create greater transparency, the guiding principle for Aru is to provide users with a rationale for all data that is collected. After members join, they are guided through the Aru interface and a wizard explains how collected data will be used. For instance, the wizard points out how the "Aru Recommendations" feed is generated.

Requirements

Users will be required to accept the community guidelines prior to using Aru. To start, community guidelines with be prepared according to best practices and will be revised overtime to incorporate norms that have evolved on the Aru platform.

The community guidelines will include the following:

Sharing information
Do not share personal information about children that are not your own or for whom you are not the primary caregiver or guardian.

Be Respectful
Everyone has their own opinion. We expect you to respect that, even if you don't agree.

Do not discuss corporal punishment
We do not allow posts for or against corporal punishment of any kind (this includes spanking).

No spammy, selling or non–SPD articles.
Postings that do will result in removal from the community.

User Ecosystem

1. Connect
Aru is an essential network which offers needed connections for parents of children with sensory processing complexities.

2. Get Tailored Information
Aru's information experience provides multiple ways to receive and retrieve relevant,useful knowledge.

3. Be Inspired
Aru's information experience provides multiple ways to receive and retrieve relevant,useful knowledge.
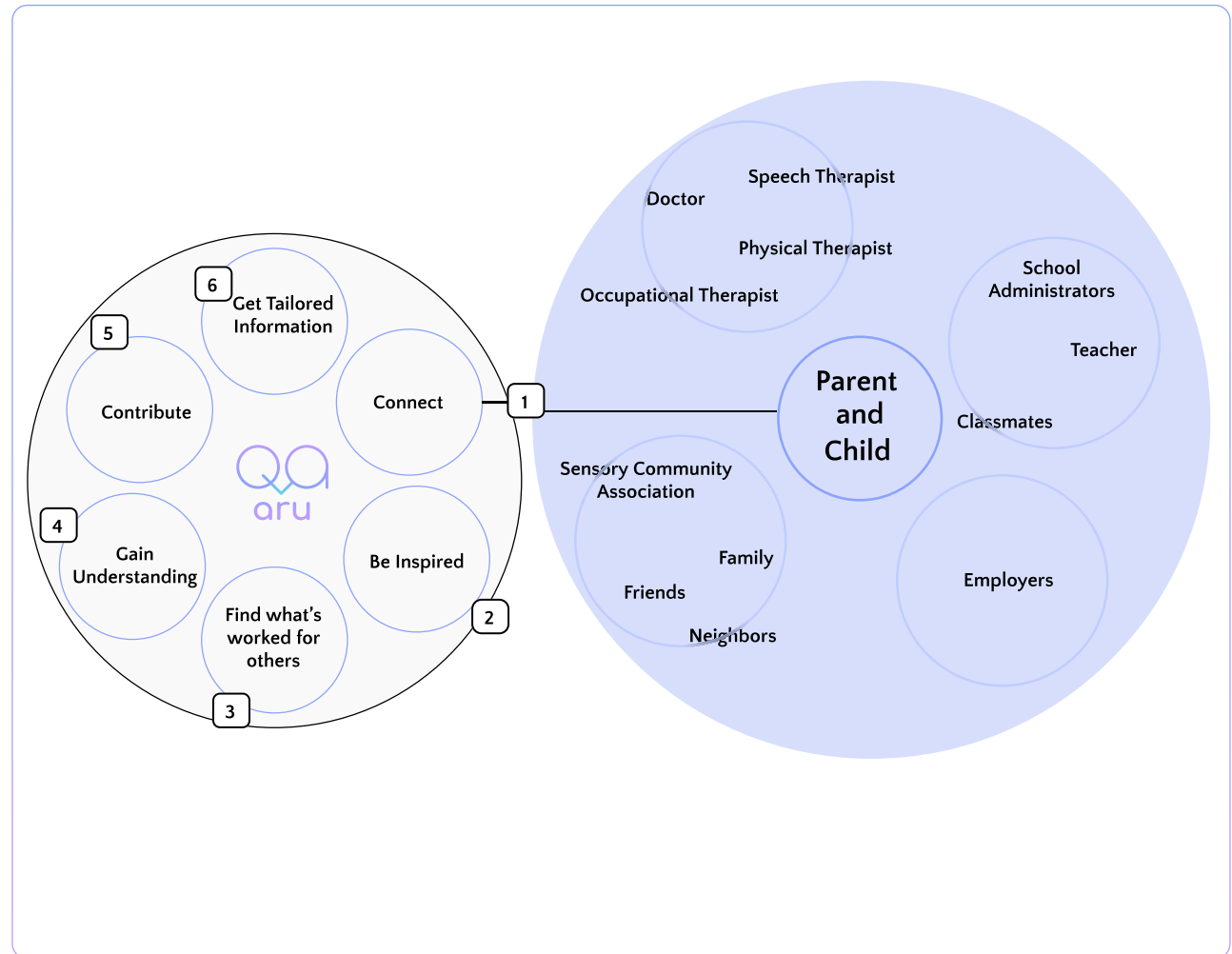
4. Find what works for others
Members gain a place to share their success stories with others.

5. Gain Understanding
Aru, at its core, is a knowledge community where members can go to learn, build expertise, and gain invaluable insight.

6. Contribute
Aru supports parents' desire for reciprocity by providing a way to answer questions from the community and note useful advice.

User Journey Map

System Stages	Discovery	Join	Onboarding	Search	Learn	Ask	Connect	Answer
User Journey	Learn of Aru	Register Interest Request to Join	Verified and Gain Membership	Look for Answers	Find Answers	Submit Answer to Aru Community	Share Experience with Others	Contribute to Aru Community

Parent User Stages

DIAGNOSIS	SEEK HELP	ACCEPTANCE					
	FIND RESOURCES					Stronger Sense of Success	
TRIAL AND ERROR							

	Discovery	Join	Onboarding	Search	Learn	Ask	Connect	Answer
Interactions	Professional recommends Word of mouth Family member recommends	Verify member Provide reason for joining	Approve member Approval notification Aru wizard walkthru	View recommended search terms Populate search words/strings	Bookmark results Note useful results Flag inapropriate results	Confirm submission	Private message members Reply to questions Add comment to answer threads	Question notifications View answered questions
Thoughts & Questions	"I'd try anything that would help."	"Is this community trustworthy?"	"I'm glad to know everyone is vetted."	"Hmm let's see what's here and what people are talking about."	"I'm so glad I found this."	"I'm bet someone here knows."	"They know just what this feels like."	"Let me see who I can help."
Feelings & Emotions	Overwhelmed by how much there is to learn.	A sense of acceptance to join others in similar circumstance	Nervous, but open-minded. Feels welcomed	Informed	Confident and self-aware	Feels empowered through the collaboration	Proud!! Pumped	In pain, but happy
Opportunities	Employer Recommends Schools Recommends	Personalized welcome through IP Address Doctor approved instant verfication	Extend invite to others Smart Wizard returns to support usage	Accessible web design Save searches	Humor Export options	Integration with email accounts Progress updates	Ice breaking Reminders of connections	Elevate account and profile status Show user's journey

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Architecture

System Blueprint | System Logic | Site Map | Interactions | Storyboards

System Blueprint

Drawing from the service blueprint this diagram focus on visualizing the relationships between the UI components, supporting technology and the user's journey.

Channel	Word of Mouth	First website visit	Returns to website	Website	Website	Website	Website	Website
Journey / User Journey	Learn of Aru	Register Interest Request to Join	Verified and Gain Membership	Look for Answers	Find Answers	Submit Answer to Aru Commuunity	Share Experience with Others	Contribute to Aru Community

LINE OF INTERACTION

Interactions								
Front Stage Processes	OT or professional recommends	Verify member	Approve member	Scroll trending search terms	Bookmark results	Confirm submission	Private message members	Question notifications
Technology	Track action from recommendations	Moderator Review	Email link	Search engine	Recommender system Algorithm	In-app Confirmation Notification	Private message members	Question notifications

LINE OF VISIBILITY

BACK OF HOUSE								
BACKSTAGE ACTIONS	Network of therapy servicee providers	Moderators, customer support professionals	Content moderator	Search website crawler	Search website crawl	Web push notifications	Chat infrastructure like Sendbird	Chat messaging platform

LINE OF INTERNAL INTERACTION

| SUPPORT PROCESSES | Conferences, Social media, outreach | Contracting IT support personel, contract engagement | Aru website, domain and Aru email address | Storage, server, search engine indext | Storage, server, search engine indext | App server | Chat Infrastructure management | Chat Infrastructure management |

System Logic

Aru's search engine examines language and intent, incorporating machine learning and artificial intelligence to provide efficiency to the user. Aru uses spell correction and a synonym finder to assist users who many not have the specialized vocabulary that accompanies this condition. A special algorithm is used by Aru to determine its search results.

Query Types
Aru users can use the search bar to enter a specified search and find answers from a broad range of topics through informational query. Or use the horizontal scroll bar to retrieve answers by navigational query.

System Logic

Aru's recommender engine is an intelligent system that personalizes users' feeds based upon self-identified preferences at onboarding and analyzing users' usage over time. The diagram depicts how Aru collects and uses data to improve user experience.

KEY

Onboarding Data

User Behavior Data

Professional

How we collect data to improve user expereience

Answer

Search

Ask

Professional Profile
–Specializations
–Area of expertise
–Professional affiliations

New Parent

Experienced Parent

Search

Child's Profile

–Sensory sensitivities
–Related conditions
–Age
–Gender
–Location

Child's Profile

–Sensory sensitivities
–Related conditions
–Age
–Gender
–Location

Answer

Ask

Answer

Search

Ask

How we use collected data

Aru

Aru Recommendation Feed

Algorithmic Processing

User Data Extraction

Aru Data Base

Site Map

This diagram provides a birds-eye-view (and in Aru's case said bird is an owl) of Aru's entire system. Shown hierarchically, each box represents a user view or action.

Aru

Check
"Aru
Activity"

Search

View
Question feed

Ask a Question

View
Asked
Questions

Enter
Search
Words

View
Answered Questions

Receive
Notification of Reply

View
Answered
Questions

Scroll
Recommended
Search Words

Reply to
Answered Questions

Send
Private Message

Reply to
Answered Questions

Send
Private Message

View
Bookmarked Questions

View Recommended
Questions

Interaction Flow

ONBOARDING

To join users submit membership details, register intereest, and await approval.

```
Landing
Page
  │
  ▼
Returning User ──Y──▶ Login
  │
  N
  │
  ▼
Account Setup
  │
  ▼
Account
Created
  │
  ▼
Welcome
Page
```

Searching & Asking

To find information users can conduct a search query, browse recommended search terms or submit a question to the community.

```
Welcome
Page
  │
  ▼
Enter              Aru
keywords in ──▶ Recommends ──▶ Keywords      ──Y──▶ Select
search bar       Keywords       acceptable?          Keywords
                                    │
                                    N
                                    ▼
                                 Enter
                                 remaining
                                 keywords

Desirable Results? ──N──▶ Ask Aru
       │                      │
       ▼                      ▼
   Scroll Results         Question?
       │                   │      │
       ▼                   Y      N
   Select answerd          ▼      ▼
   questions            Enter    Enter Poll
       │                Question     │
       ▼                   │         ▼
     Reply                 │      Enter poll
      │ │                  │      responses
      │ │                  │         │
 Public  Private           ▼         ▼
 reply   Message         Click Submit
 to
 thread
```

KEY

- User Action
- User Choice
- System Action

Replying to Member's questions

Users can help others by answering questions shown in their feed or by responding to "Answered" notifications.

```
Home Page ──▶ Click
              "Answered"
          │        │
          │        ▼
          └──▶ Scroll      ──▶ Selects   ──▶ Reads   ──▶ Reply
               Questions Feed    Question      Question      │ │
                                 to Answer               ┌───┘ └───┐
                                                         ▼         ▼
                                                    Public reply  Private
                                                    to thread     Message
```

Overview

Meet Marissa

Marissa has a 3 year old daughter, Kara who was diagnosed with autism and sensory processing disorder several months ago. At the time of her diagnosis, she remembers the panic, distress and feelings of fear that set in when the doctor was explaining the results of her evaluation.

Aftere the initial shock wore off. Marissa resolved that she would learn as much as possible about these conditions and do everything she could to help Kara have a great childhood. Soon after Marissa signed Kara up for occupational therapy (OT). During her visit the therapist recommended Aru, a community for parents of kids with sensory complexities.

The following flows depicts the typical user journey (as represented through Marissa) of finding information, asking a question, and eventually answering the questions of other members.

Onboarding

Marissa registers for Aru.

Finds Information

Marissa finds information by searching, browsing and submitting a question to the Aru community.

Gives Advice

Marissa answers questions from other Aru members.

Parent of 3 year old daughter, Kara

Kara's complexities include:

Austism Spectrum Disorder

Sensory Processing Disorder

Allergies

Onboarding

Marissa goes to the website her OT recommended and lands on this page.
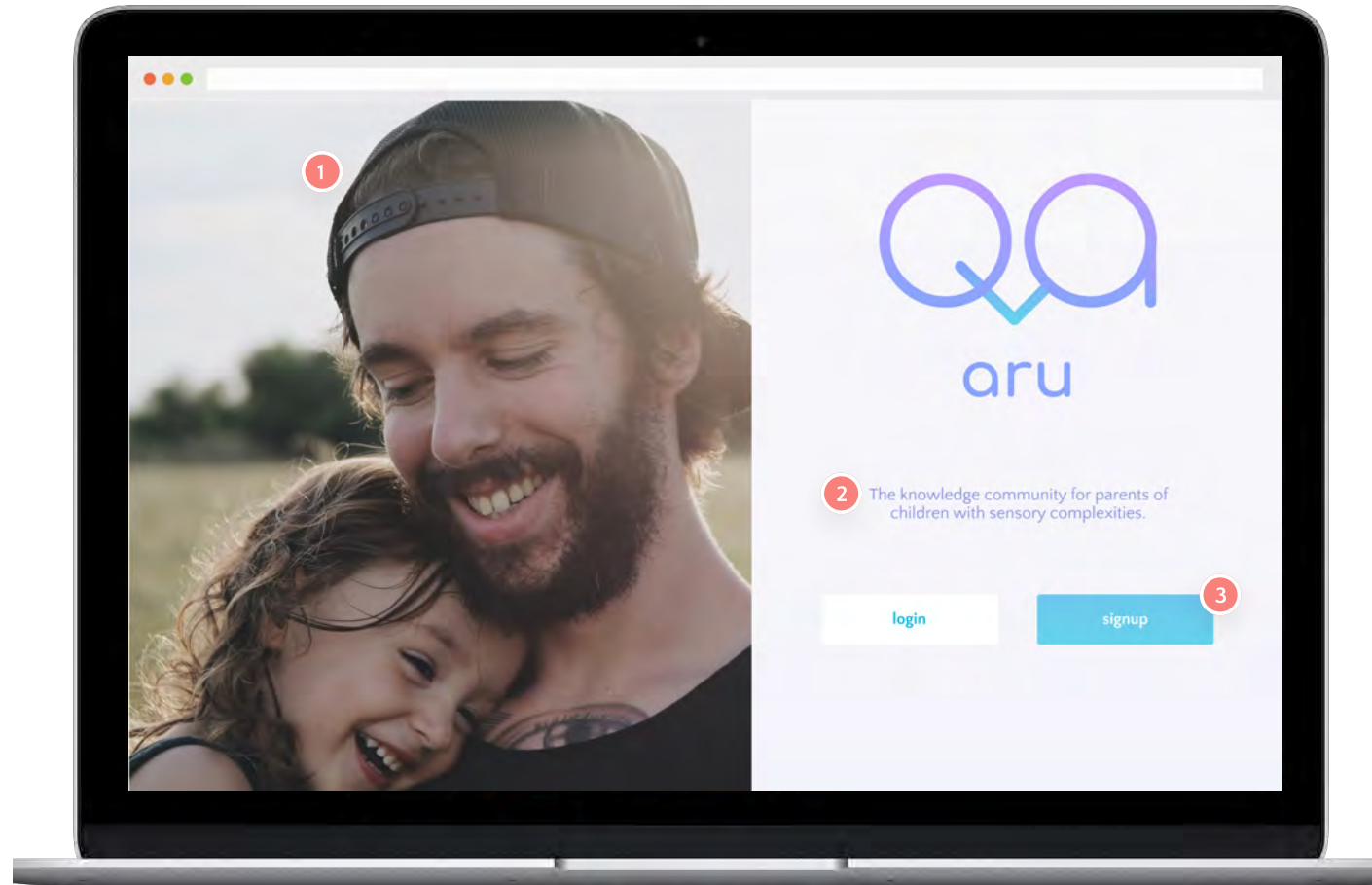
1 Marissa is welcomed to Aru by an image of a father holding his daughter.

2 Feeling upbeat and curious she reads Aru's description and learns she's found a place where she belongs.

3 So she clicks this to signup for Aru.

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Onboarding

Now Marissa has started to register.

1 The more we know about you and your family, the better we can make the system. We want to make sure we always recommend the best questions and answers!
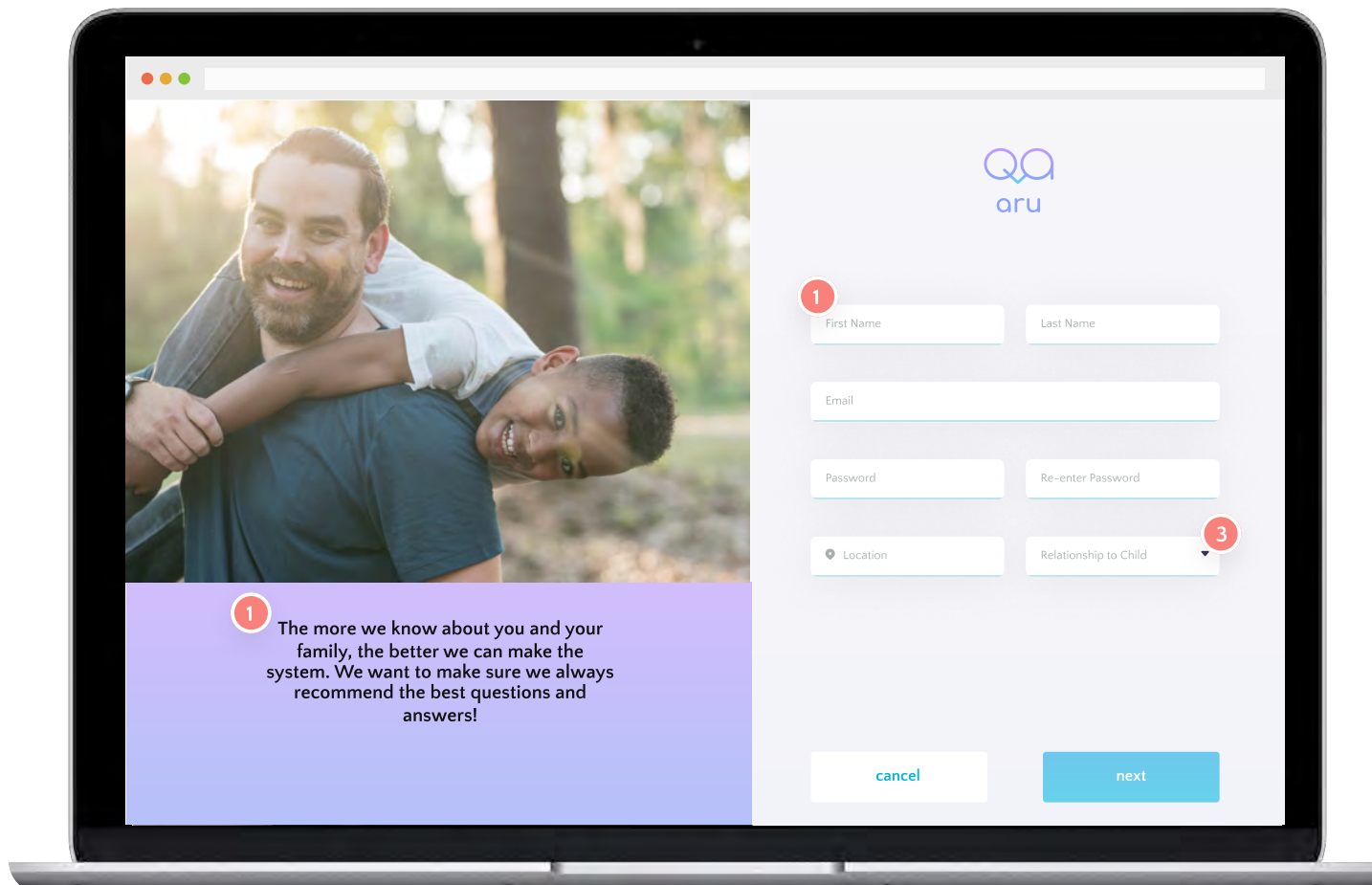
1 Marissa learns that Aru will give her recommendations.

2 Marissa fills in here first and last name here.

3 She fills in where she lives and inputs her relationship to a child with sensory complexities as: Parent.

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Onboarding

Marissa continues thru registration to add information about Kayden, her son.
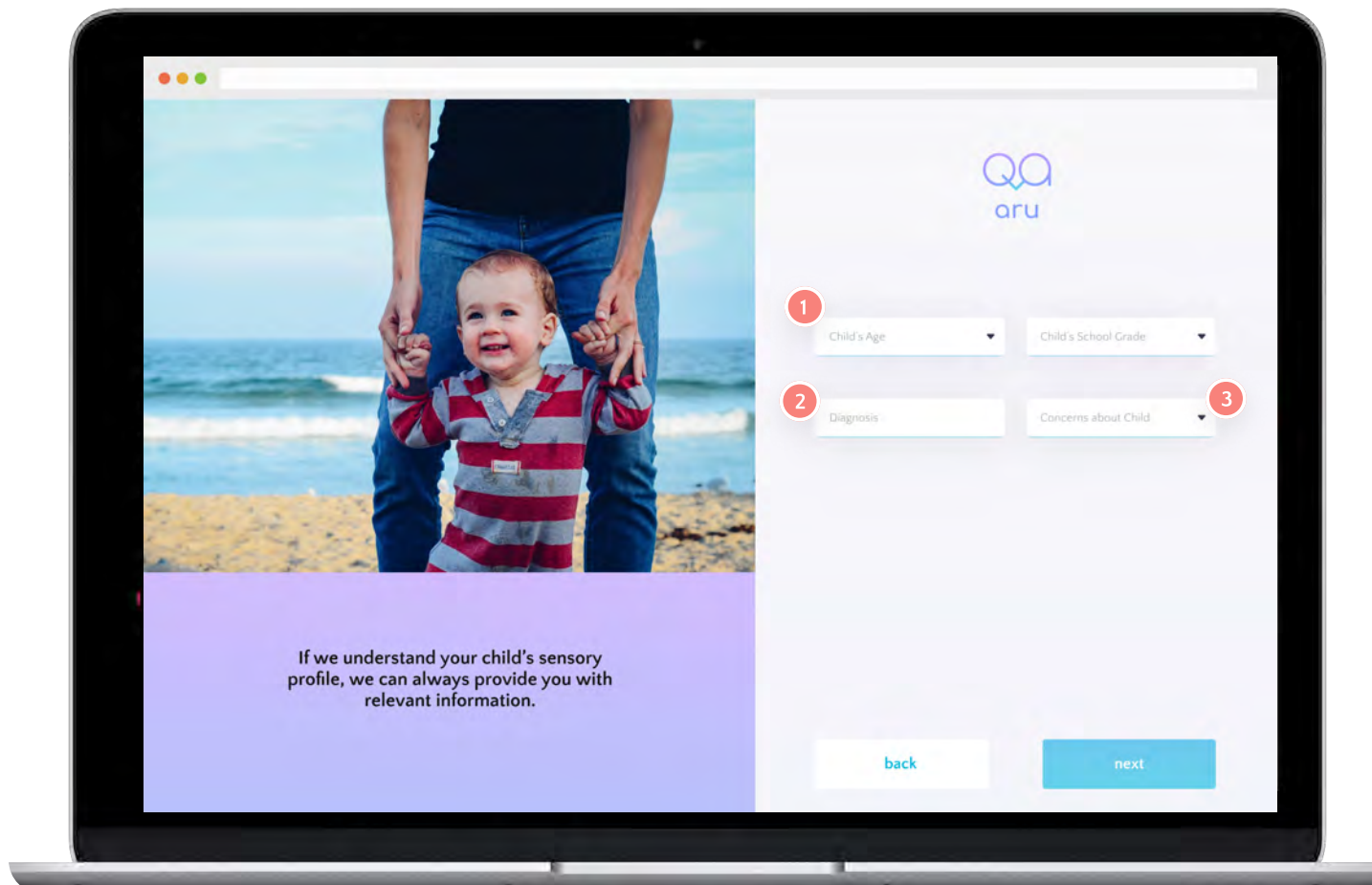
1   Marissa selects Kara's age from the drop down.

2   Marissa enters her autism and sensory processing disorder diagnosis.

3   By selecting Marissa adds other concerns including Kara's allergies and vestibular sensitivity.

Onboarding

Marissa arrives at the membership registration page.
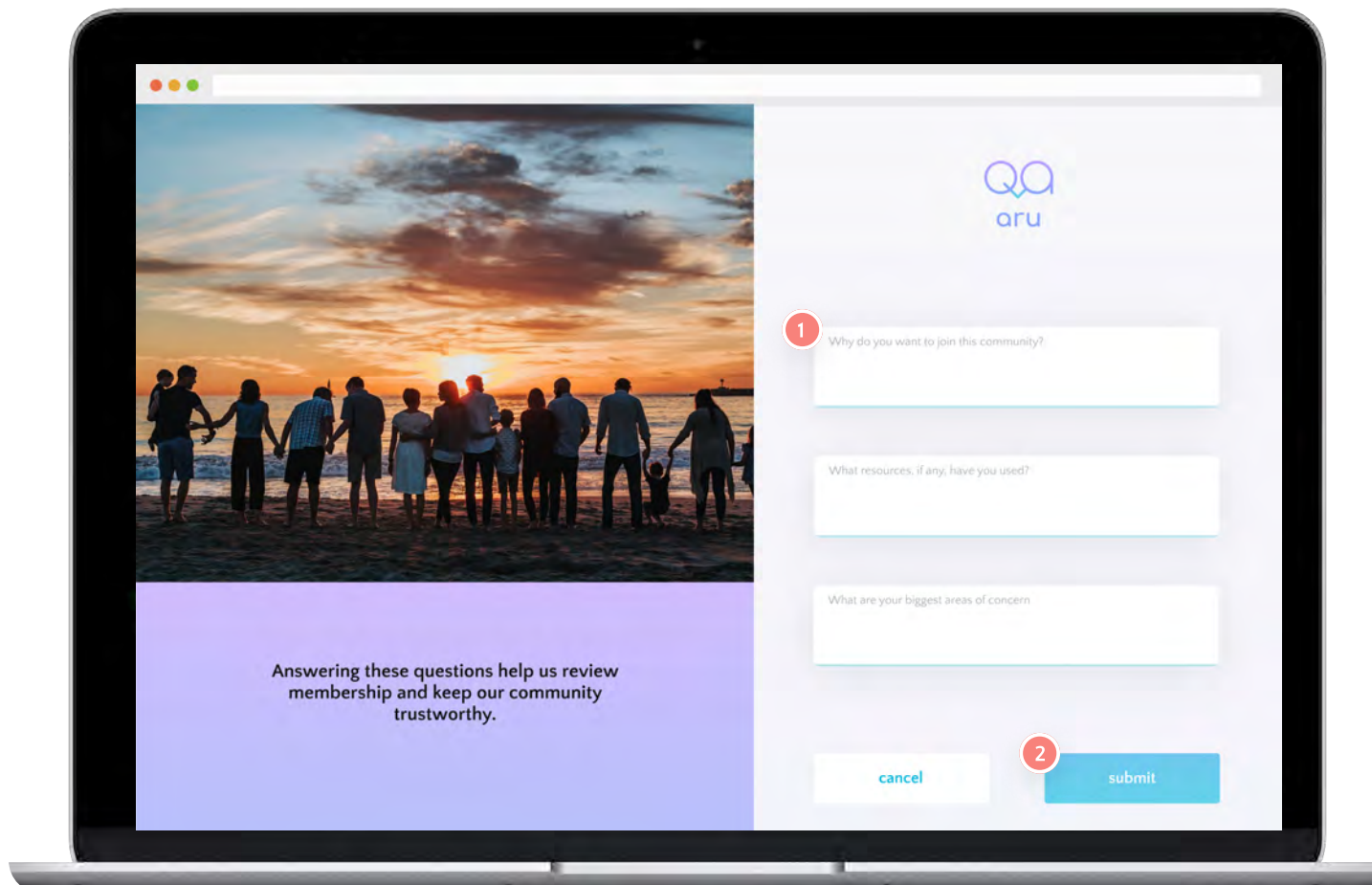
1 Marissa inputs her reasons for wanting to join Aru including a description of any concerns so Aru can provide her personalized information.

2 Marissa completes registration by clicking submit.

Onboarding

Marissa is sees she will bee notified after her information has been reviewed by Aru.
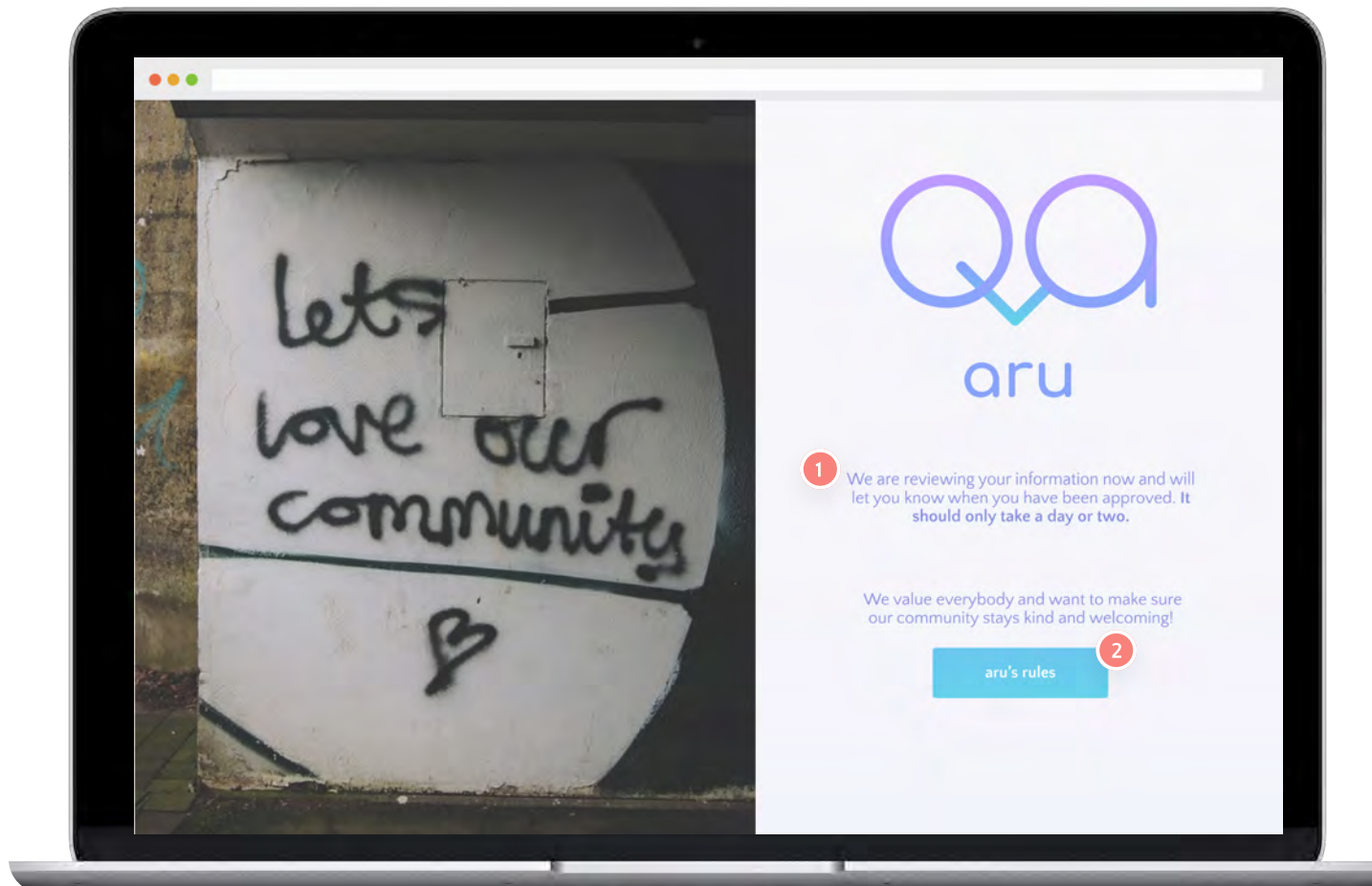
1 Marisaa learns that she is joining a closed community and will be notified after Aru reviews her information.

2 Aru clicks this to read Aru's rules and guidelines.

*See ethics section to view these rules.

1 We are reviewing your information now and will let you know when you have been approved. It should only take a day or two.

We value everybody and want to make sure our community stays kind and welcoming!

2 aru's rules

Finding Information

After gaining approval to join, Marissa started using Aru. Today she logs on to search for information about a sensory swing for Kaya.
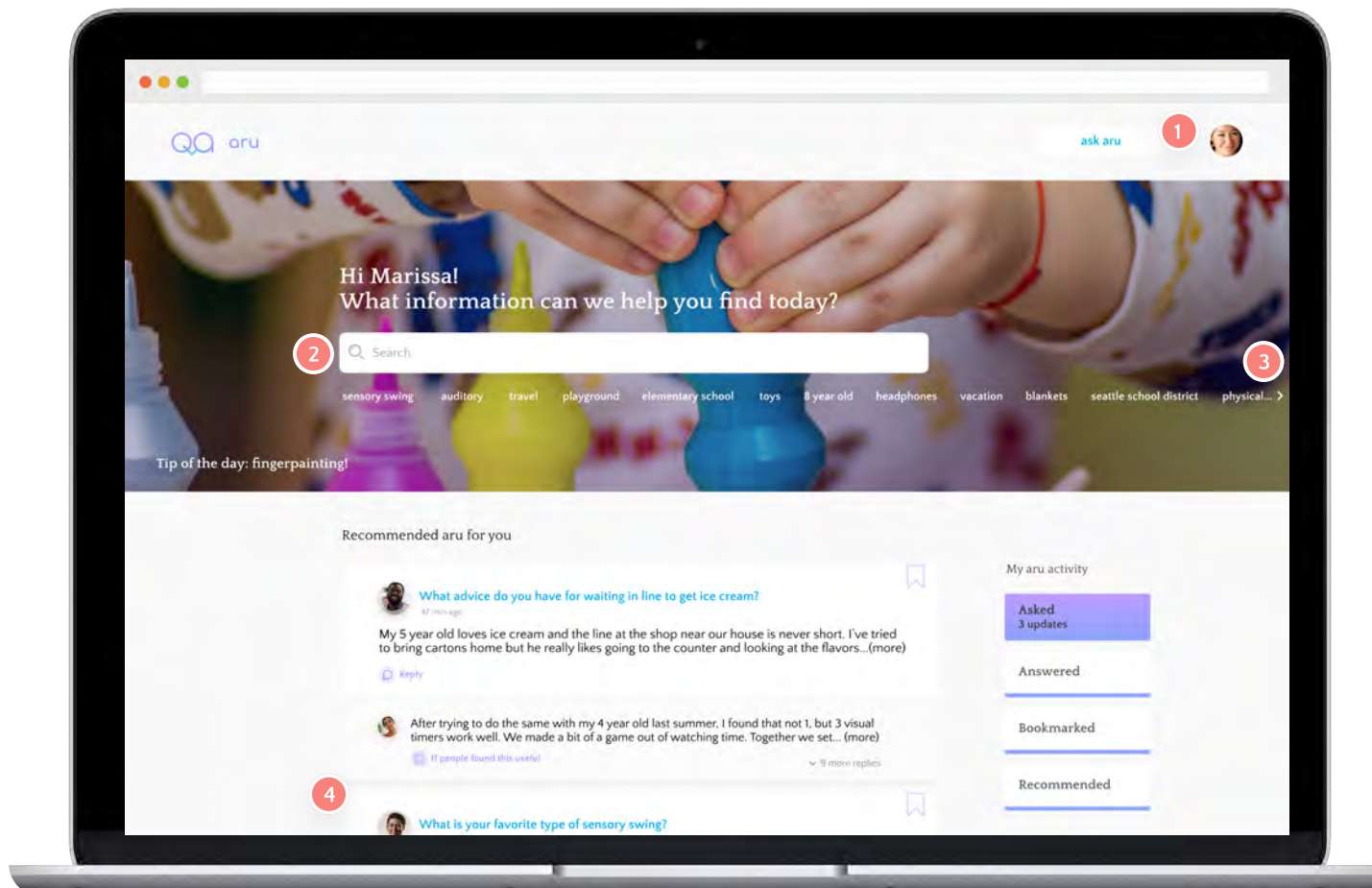
1 Marissa can view and modify her account details here.

2 Marissa can fill in a search query by inserting keywords, a phrase, or a complete question.

3 Marissa can scroll through recommended search terms.

4 Marissa can browse the answered questions on her personalized feed to find information about a sensory swing.

Finding Information

Marissa decides to use the search bar to make her query.
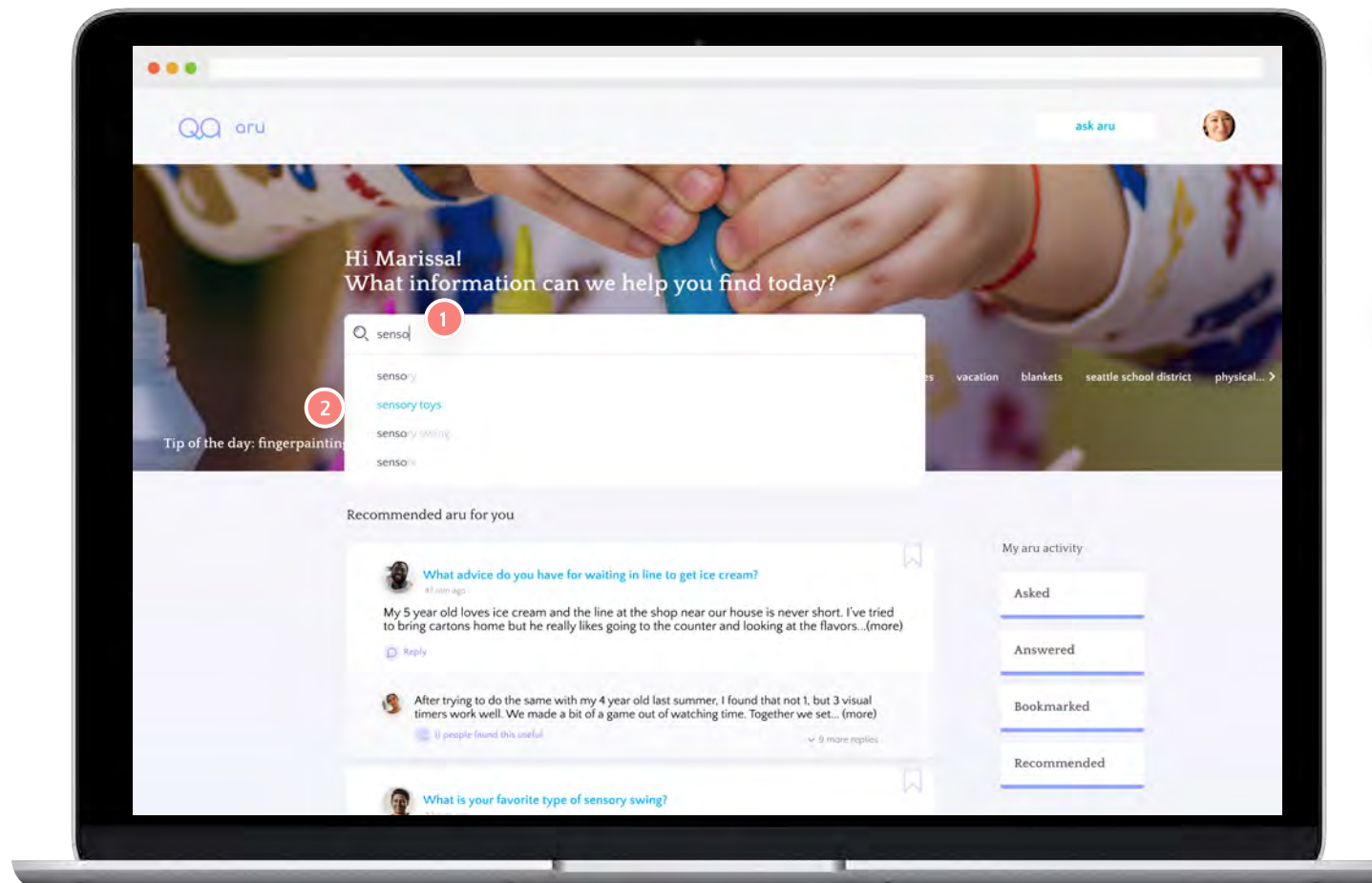
1 As Marissa begins to enter "sensory swing" she sees a list of related keyword suggestions instantly populate.

2 When Marissa hovers over a keyword it appears in the list highlighted.

Finding Information

After selecting the suggested search term.Marissa finds instant results.
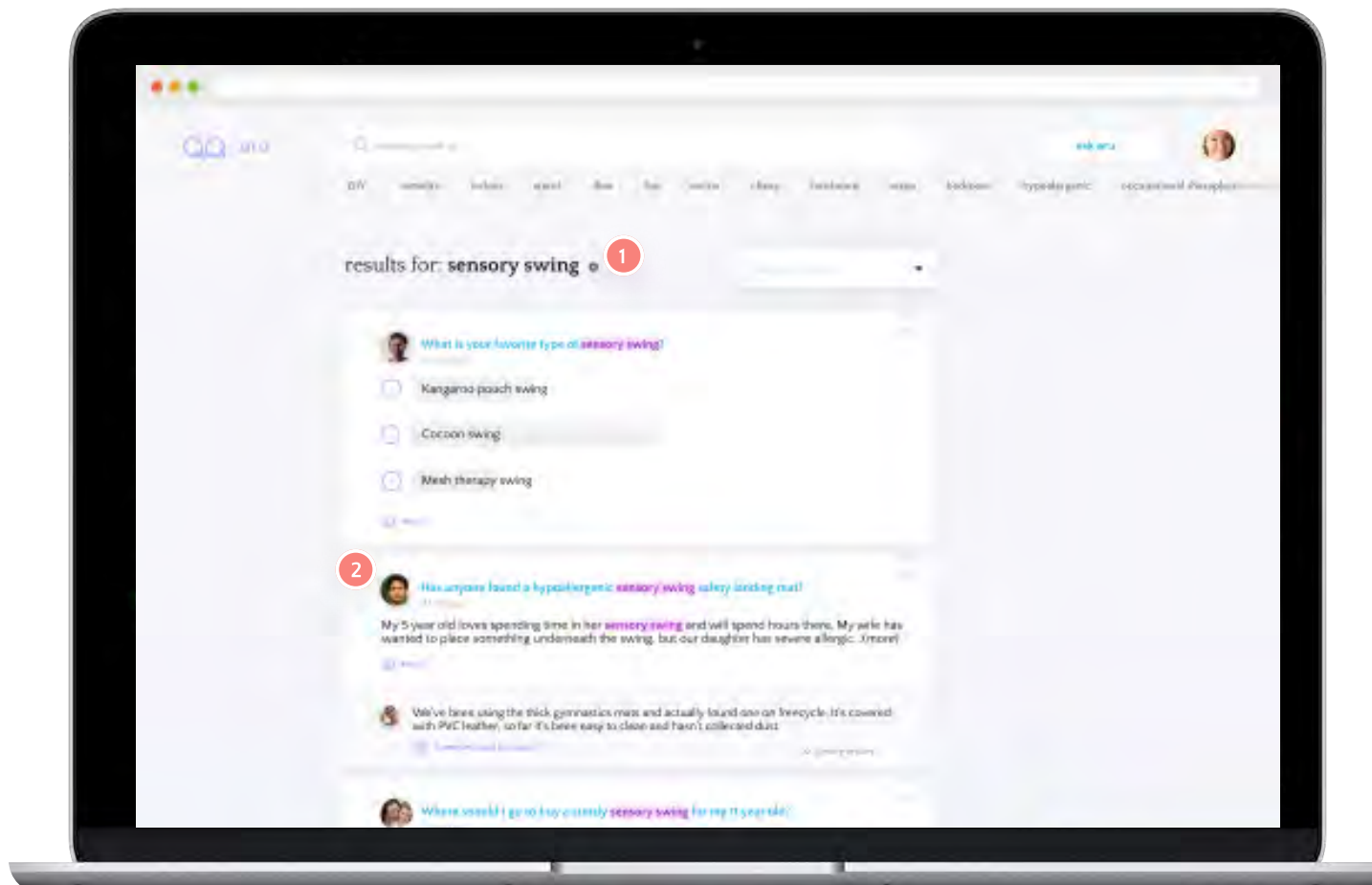
1 Marissa sees another user has posted a poll about sensory swings.

2 Marissa goes back to the the results of her search and clicks the "X" to exit the search.

Finding Information

Marissa exits the sensory swing search and is returned to her home page.
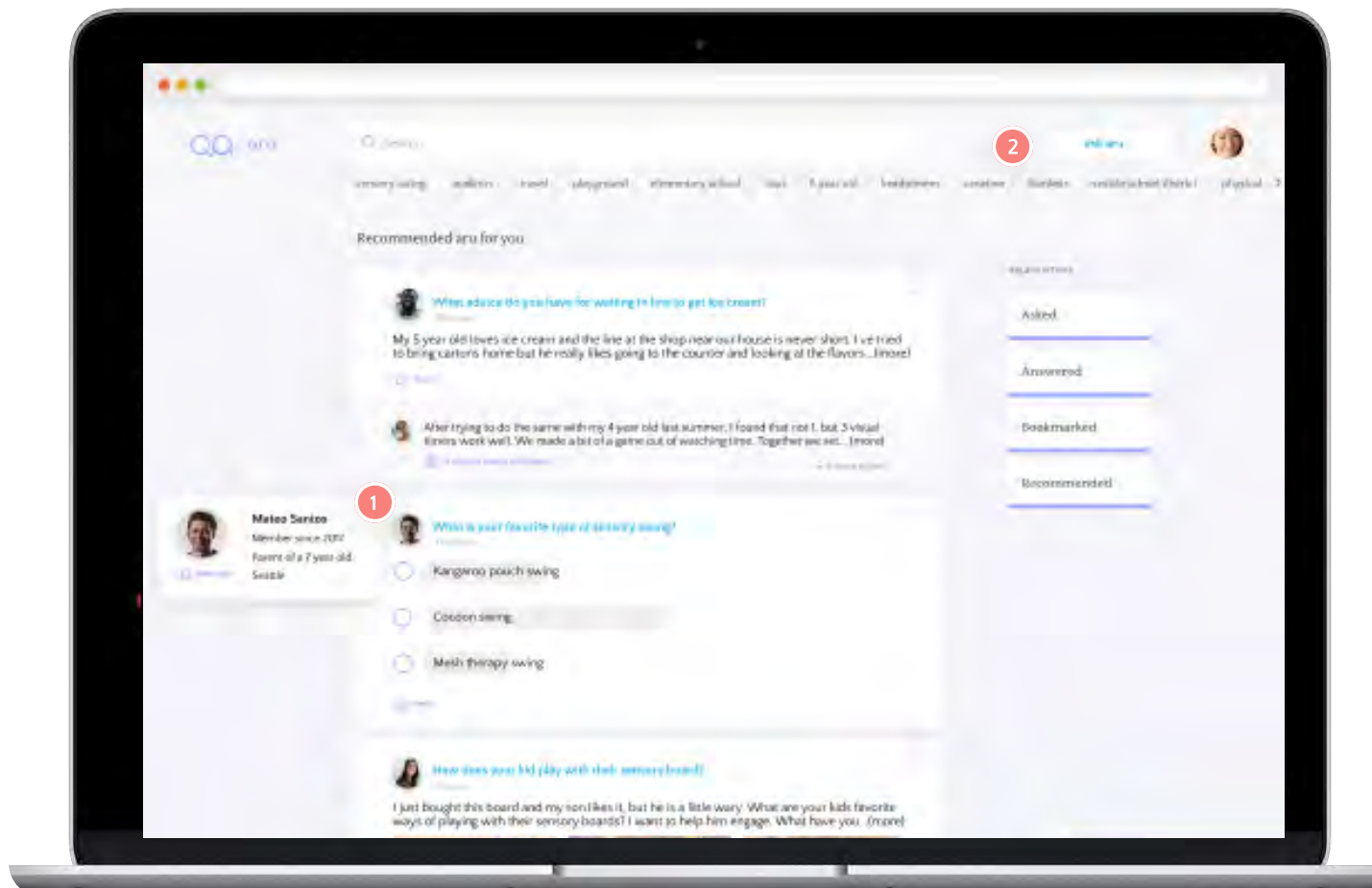
1   Marissa sees a poll to a question she might want to answer but first wants to know who is asking this question. When she hovers over the member's avatar she learns he is a father who has a 7 year old.

2   After seeing the results of the poll, Marissa clicks here to submit a question.

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Finding Information

Marissa sees the question form pop out from the right side of her screen.
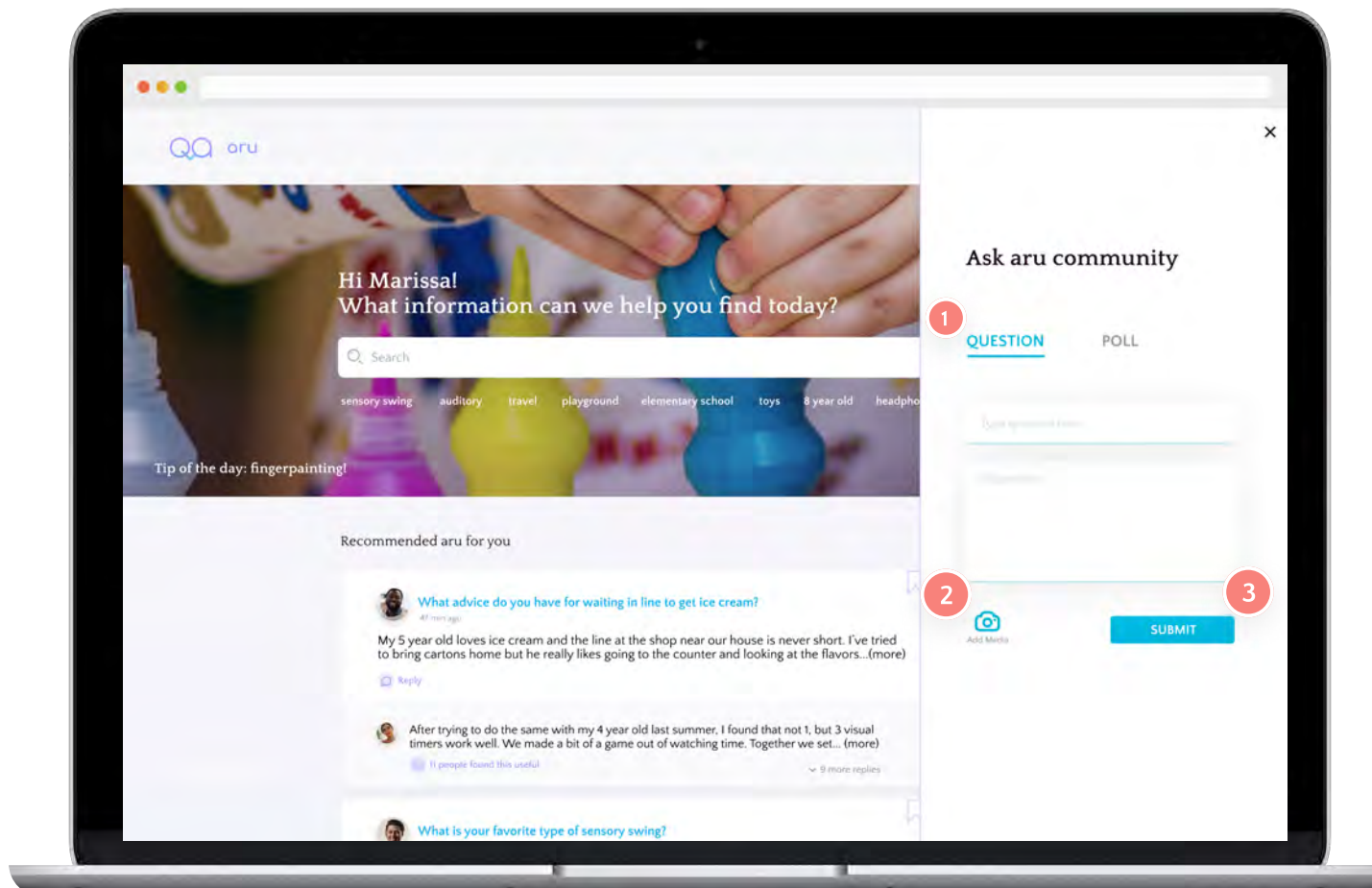
1 Marissa is taken to the default question tab.

2 Marissa can include media such as video and photos to add context to her question.

3 Once Marissa has formulated her question she can click and submit it to the Aru community.

Visual System

Branding | Logo | Color | Typography |
Iconography | Image

Branding

Aru's brand emphasizes the complementary nature of forging connections and finding information. To define the Aru information experience, Aru holds the image of the friendly, informative, and reassuring librarian. Given that Aru provides support to parents of children with sensory complexities, visual elements of the Aru brand should reflect Person First Language (PFL) as defined by the CDC.

The Aru brand uses tonal words to convey Aru's design principles in a consistent and relatable way. Aru's tonal words include: warm–hearted, respectful, encouraging, informative and inclusive.

Logo

Aru is a loose translation of the Japanese word for owl. These graceful birds are often associated with learning and wisdom. We chose an owl inspired logo and name because Aru harnesses the wisdom of its users to share information and advice across a community. Aru also looks and sounds very similar to "are you," which is a play on the fact that this platform is used to share questions.

The logo was designed to conjure an owl as well as Q and A. It embraces the curves and soft edges that are used throughout Aru. It also mimics the never-ending, circular journey that parents go through when dealing with sensory complexity.
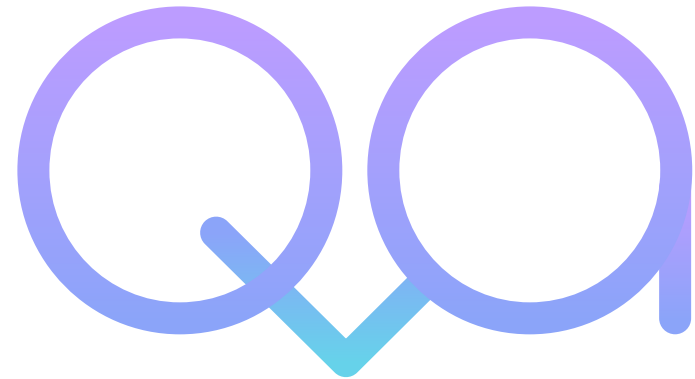
Color Palette

Our primary gradient color is purple, conveying trustworthiness and wisdom. The gradient represent the spectrum of manifestations within sensory processing disorder. It also mimics the range of how someone with a sensory complexities perceives stimuli – from hypersensitivity to hyposensitivity.

The primary solid color is a vibrant teal. Blue connotes security and confidence and chosen because of it's soft, calming shade of blue.

The chosen primary colors are complementary and contribute to an optimistic and encouraging aesthetic. Warm shades were chosen to add a sense of comfort. Parenting children with sensory complexity is hard, and Aru should feel like a welcoming, safe space.

Gradients

#BC9CFF	#6EC7ED	#6DC7ED
#8EA3F9	#66D2E9	#66A8E9

Solid Colors

#13ACEA	#C9BFFA	#8FA2F9
#C4C4C4 24%	#8FE5FF	#04BDE1

Typography

When choosing a font, we were primarily concerned with readability. Aru is an information sharing platform, and users will be looking at and reading a good amount of written content. Therefore, it is important to ensure ease of reading for extended amounts of time. Quattrocento Sans is a typeface that is easy to read, especially on desktop and mobile screens.

Serif fonts tend to indicate trust, but they are more difficult to read on screens, though they are effective for headers. The combination of serif headers and sans serif body text is known to convey credibility, which is important for supporting the trustworthiness of the platform.

Welcome message

bold, 28

Question details header

sans, bold, 21

Recommended header

regular, 17

Question on card

sans, bold, 16, #13ACEA

search results

sans, bold, 16, #7900A4, overlay #DF7BF8 21%

question details

sans, regular, 16

answer

sans, regular, 15

Iconography

Aru's icons are calming, friendly, and wise.

The iconography used in Aru is simple and is paired with a written description to maximize clarity for the user. If the description is not shown outright, it will be visible on hover.

Icons were chosen to reflect current industry standards. They were user tested and only those that were consistently understood were incorporated into Aru's design. This ensures Aru is easy to use.

Unique to Aru is the lifeguard floatation icon. The advice parents receive from other community members can feel like a lifesaver, therefore this icon was chosen to help indicate advice parents found helpful.

	default	hover
search	🔍	🔍
useful		
message		
bookmark		
directions (back, next, expand)	‹ › ⌄	‹ › ⌄
Media	📷	📷
Add poll answer	⊕	⊕
Flag content	⚑	⚑
View password	👁	

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Imagery

In order to create a sense of comfort and community, Aru relies heavily on images, both product generated and user posted images. Each day, the landing page will show a new image that is associated with a tip of the day. The images must either contain a child or be directly related to children.

Requirements for images:
–authentic representation of emotion
– positive portrayal of individuals in the community

Recommendations for images:
– diversity
– mix of male/female children and parents
– mix of ages
– children acting independently
– bright colors
– images with blues and purples (match color palatte)
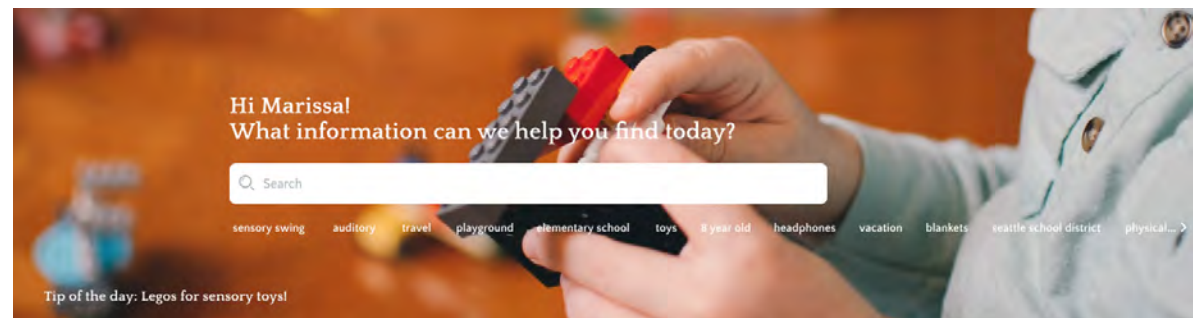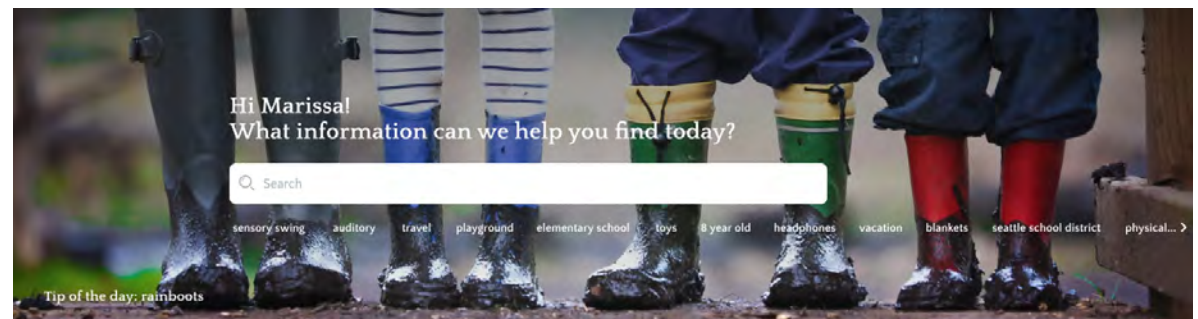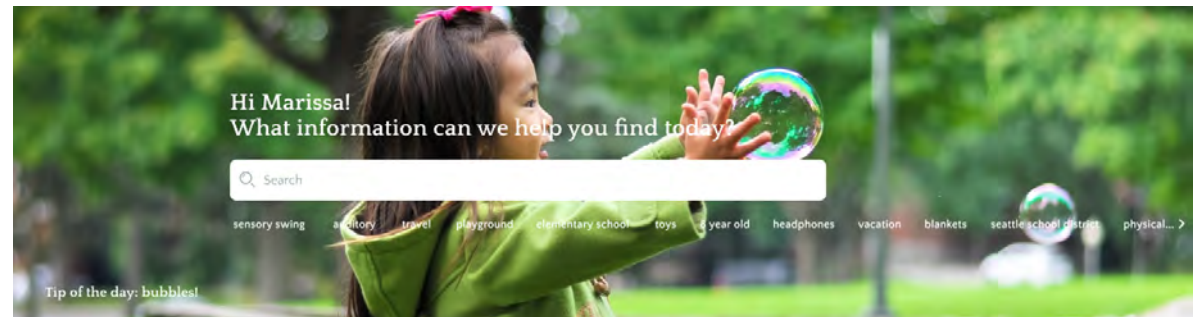
Components

Buttons | Forms | Search | Avatars | Navigation | Answer Textboxes | Question Cards | Answer Cards | Hero Images | Slideout | Media

Buttons

Primary

post

34

153
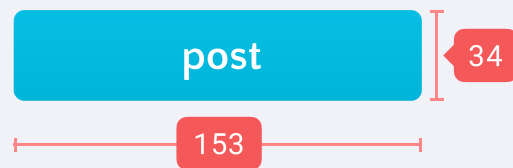
Quattrocento sans, bold, 16
#FFFFFF

Secondary

ask aru

34

153
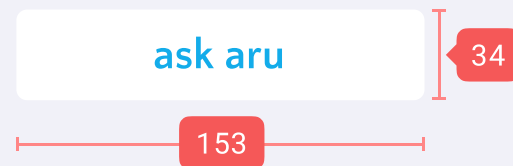
Quattrocento sans, bold, 16
#13ACEA

States

post

Default / Gradient
#06BEE3 to #00B5D9

post

Hover / Gradient
#00B0D5 to #00A6CA

States

ask aru

Default / #FFFFFF

ask aru
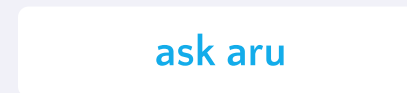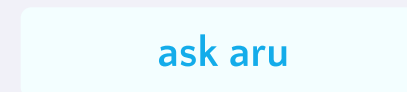
Hover / #F3FEFF

Buttons, Aru Activity

Activity

answered

58

5

180
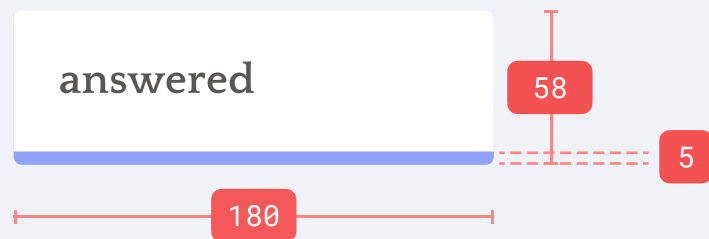
Quattrocento, bold, 16
#595656

States

answered

Default / #8EA3F9

answered

Hover / #7287F2

Activity, updates

asked
3 updates

8   58

180
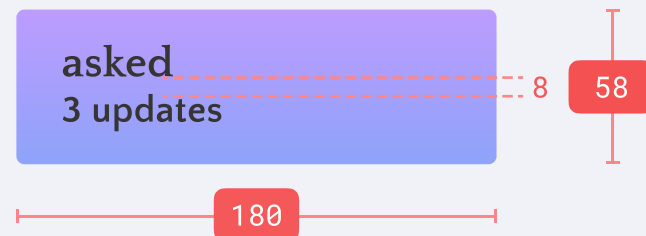
Quattrocento, bold, 16
#373434

Quattrocento sans, bold, 14
#373434

States

asked
3 updates
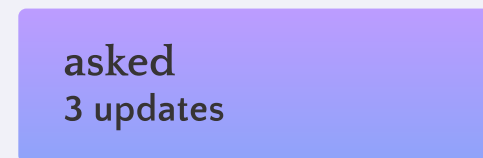
Default / Gradient
#BC9CFF to #8EA3F9

asked
3 updates

Hover / Gradient
#A983FC to #7087F2

Buttons, Onboarding

Primary

signup

63

220
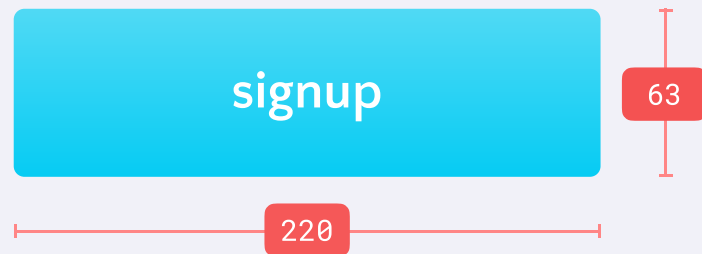
Quattrocento sans, bold, 20
#FFFFFF

States

signup
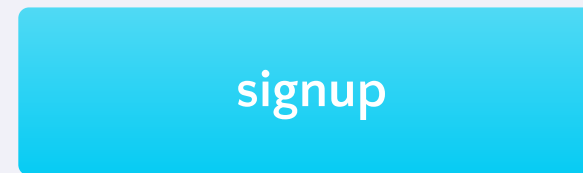
Default / Gradient
#4FDAF4 to #05CBF3

signup
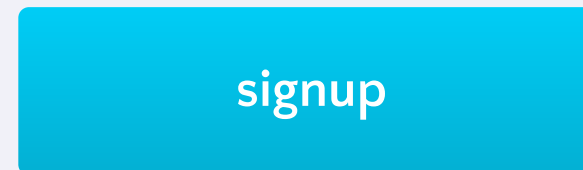
Hover / Gradient
#00CDF5 to #03AFD2

Secondary

login

63

220
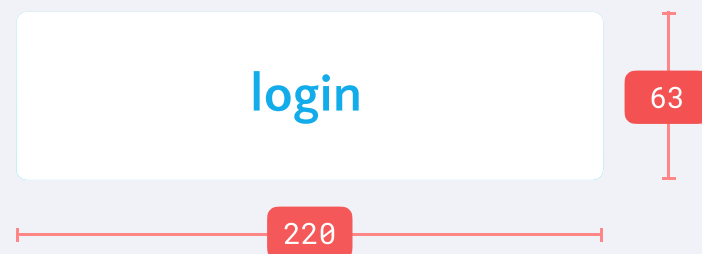
Quattrocento sans, bold, 20
#13ACEA

States

login

Default / #FFFFFF

login
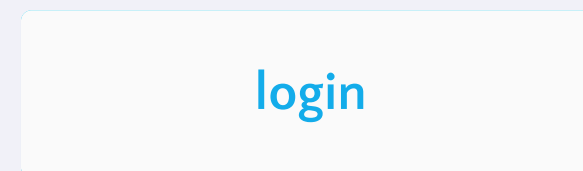
Default / #FAFAFA

Forms, Ask a Question

1 Line

Placeholder

50

2

20

335

1 Line

8

Category

11

Typing

11

Extended

Placeholder

150

2

20

335

States

Placeholder
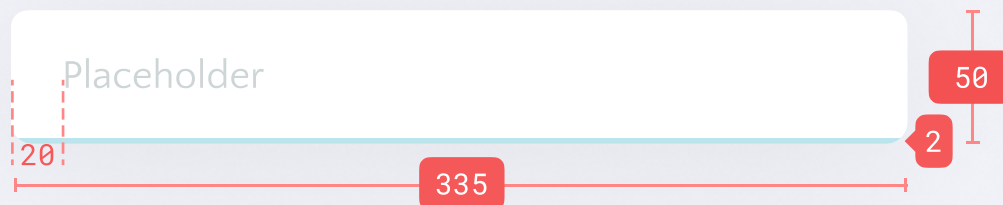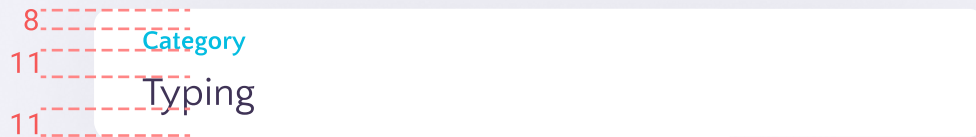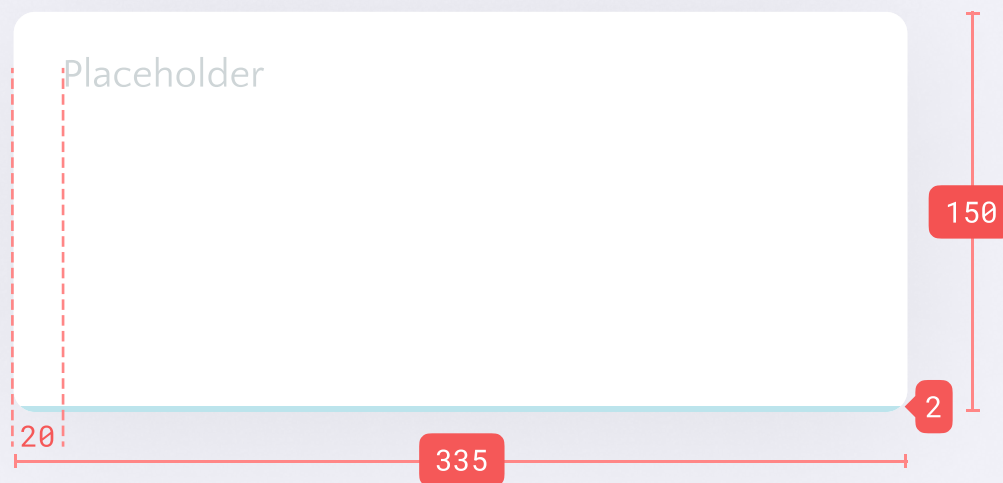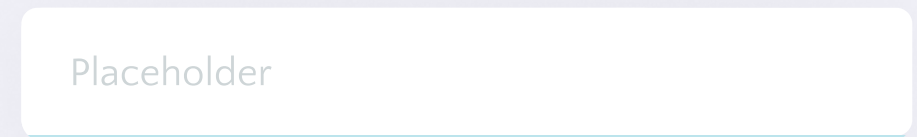
Default / #FFFFFF, bottom line – #BCE4EC
Dropshadow – #000000 7%, blur 64
Quattrocento, 15, #CED5D7
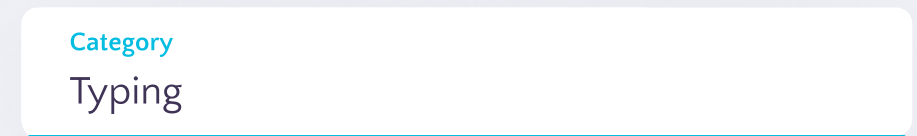
Category

Typing

Active / #FFFFFF, bottom line – #04BDE1
Dropshadow – #000000 7%, blur 64
Category text: Quattrocento, bold, 10, #04BDE1
Typing text: Quattrocento, 15, #3F3356

Forms, Onboarding

Half

Placeholder

50
2
20
240

Full

Placeholder

50
2
20
510
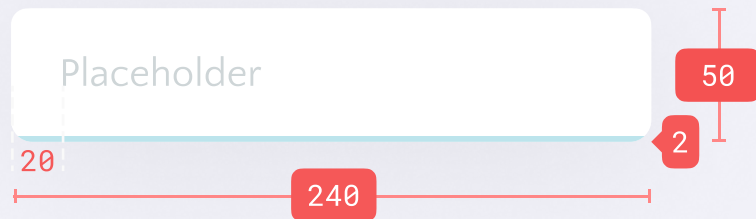
States

*see previous forms section for states info

Forms, Password

Password

Password   👁

50
2
20   20
240
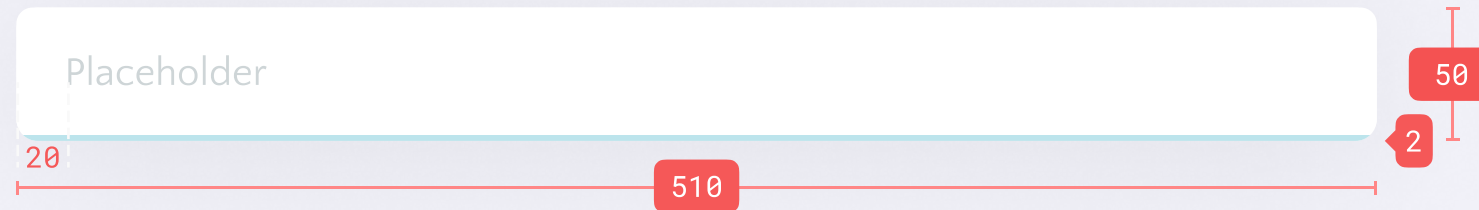
States

Password   👁
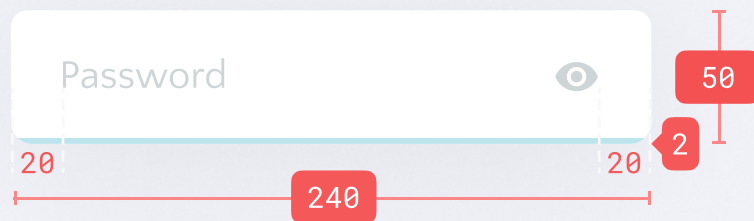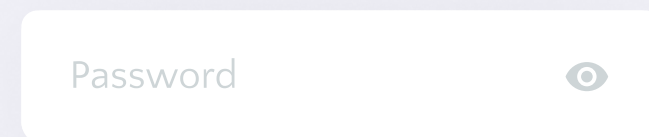
Default / bottom line – #BCE4EC
Dropshadow – #000000 7%, blur 64

Weak Password

● ● ● ● ● |
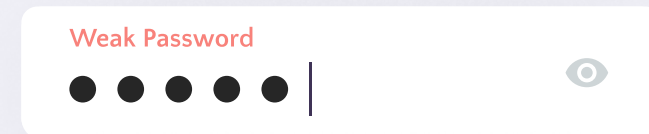
Weak / bottom line & header – #F8827B

Medium Password

● ● ● ● ● ● ● |
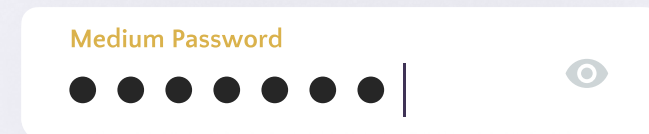
Medium / bottom line – #F8DC7B, header – #DAB24C

Weak Password

● ● ● ● ● ● ● ● ● ● | 👁

Strong / bottom line & header – #99D090

Dropdowns

Basic Dropdown

Category (placeholder) ▼

50
2
20
240
12
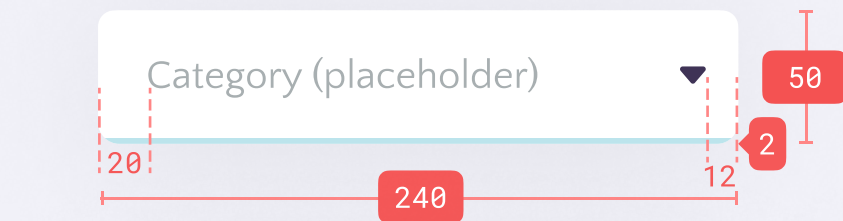
States

Category (placeholder) ▼

Placeholder

Category
Selected ▼

Selected
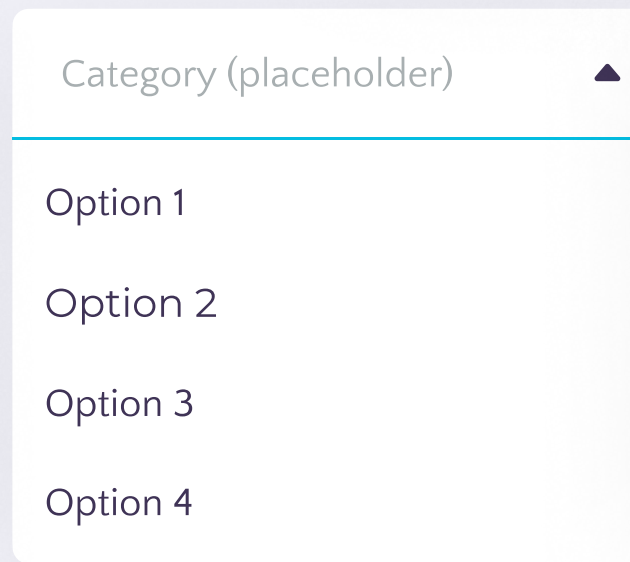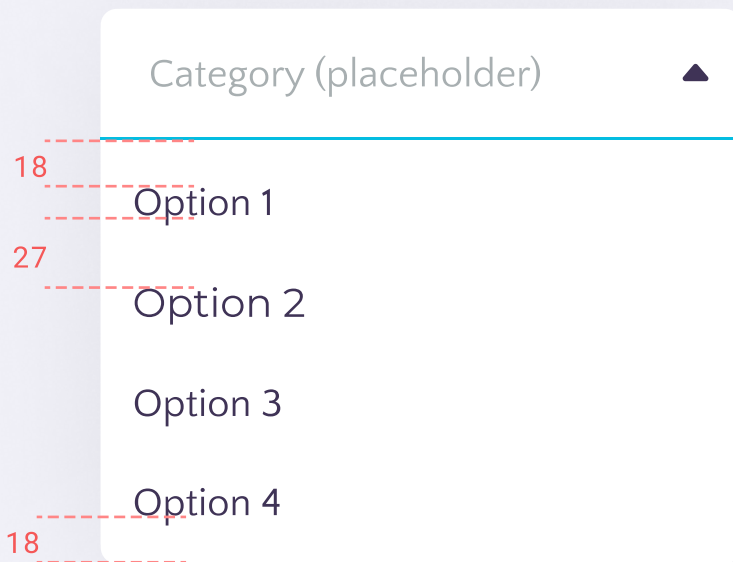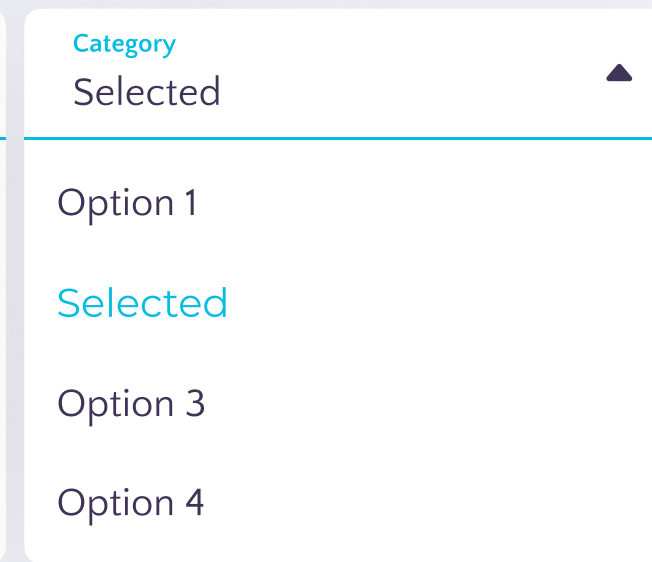
Category (placeholder) ▲

18
27

Option 1

Option 2

Option 3

Option 4

18

Category (placeholder) ▲

Option 1

Option 2

Option 3

Option 4

Placeholder Extended

Category
Selected ▲

Option 1

Selected

Option 3

Option 4

Selected Extended

41

Dropdowns

Multi-Select

Enter keyword
50
2
20
12

Value ✕
7 7
20
60

States

Enter keyword ▼

Placeholder

Category
Typing

Typing

Category
Value ✕   Value ✕   Val ▼

Option 1

Option 2

Option 3

Selected Extended

Category
Value ✕   Value ✕   ▼
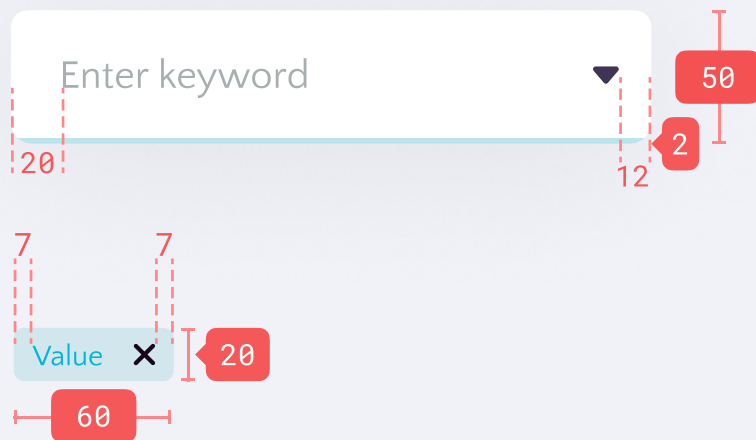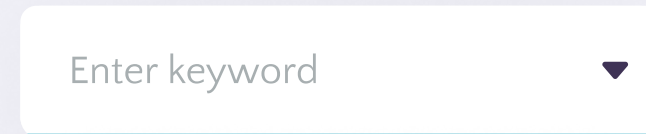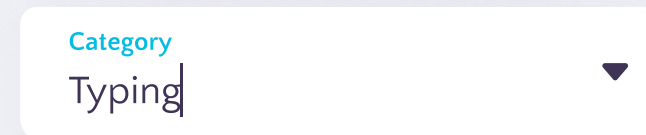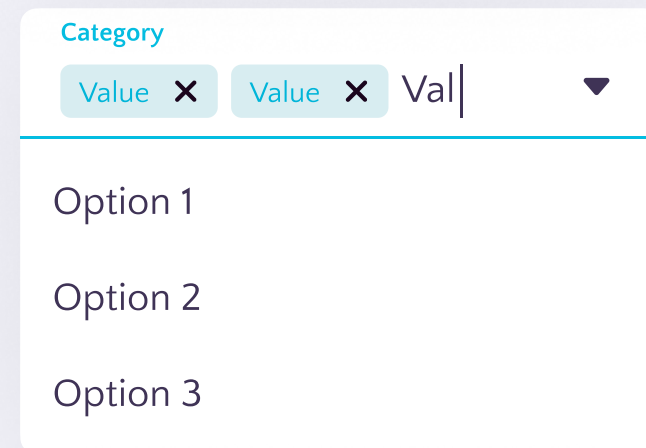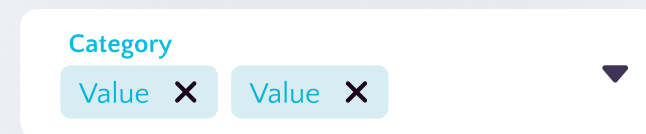
Selected

Search

730

50

Search

20   12

Default / #FFFFFF
Quattrocento sans, 16, #99A6AA

senso

18

senso**ry**

27

sensory toys

sensory swing

sensors

18

Recommended Searches Extended / search term – Quattrocento sans, 16, #3F3356
dropdown typed – regular, 15, #3F3356, dropdown recommended – #3F3356 30%

sensory toys   **Hover on dropdown recommended** / #03AFD1

sensory toys   **Selected dropdown recommended** / #008EAA

Avatars

46

46
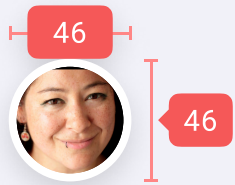
Header profile pic / 3px stroke #FFFFFF, drop shaddow #000000, 14% blur 11

40

40
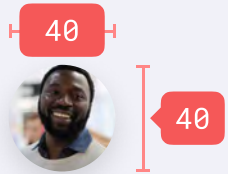
Questioner pic / drop shaddow #000000, 14% blur 11

25

25
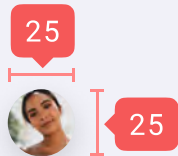
Answerer pic / drop shaddow #000000, 14% blur 11

46

46
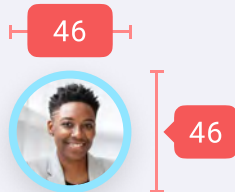
Professional pic / 3px stroke #8FE5FF, drop shaddow #000000, 14% blur 11

Navigation
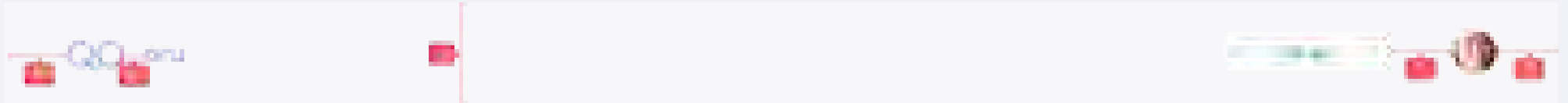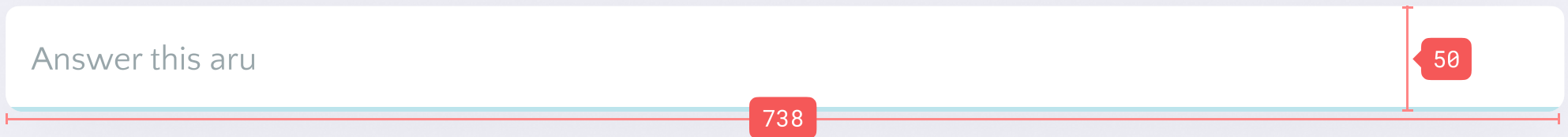
Landing Nav
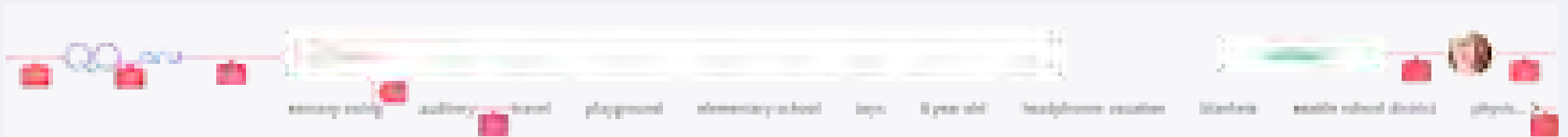
Scrolled Nav

Answer Textboxes
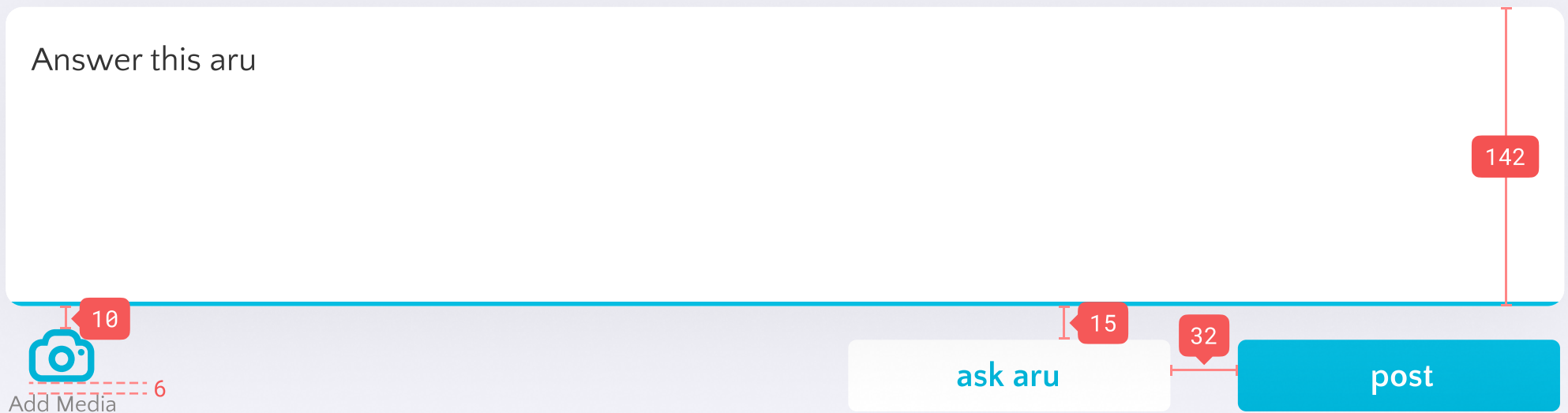
Answer this aru

50

738

Answer textbox / see forms section for color and text rules

Answer this aru

142

10

6
Add Media

15

32

ask aru

post

Answer textbox expanded

46
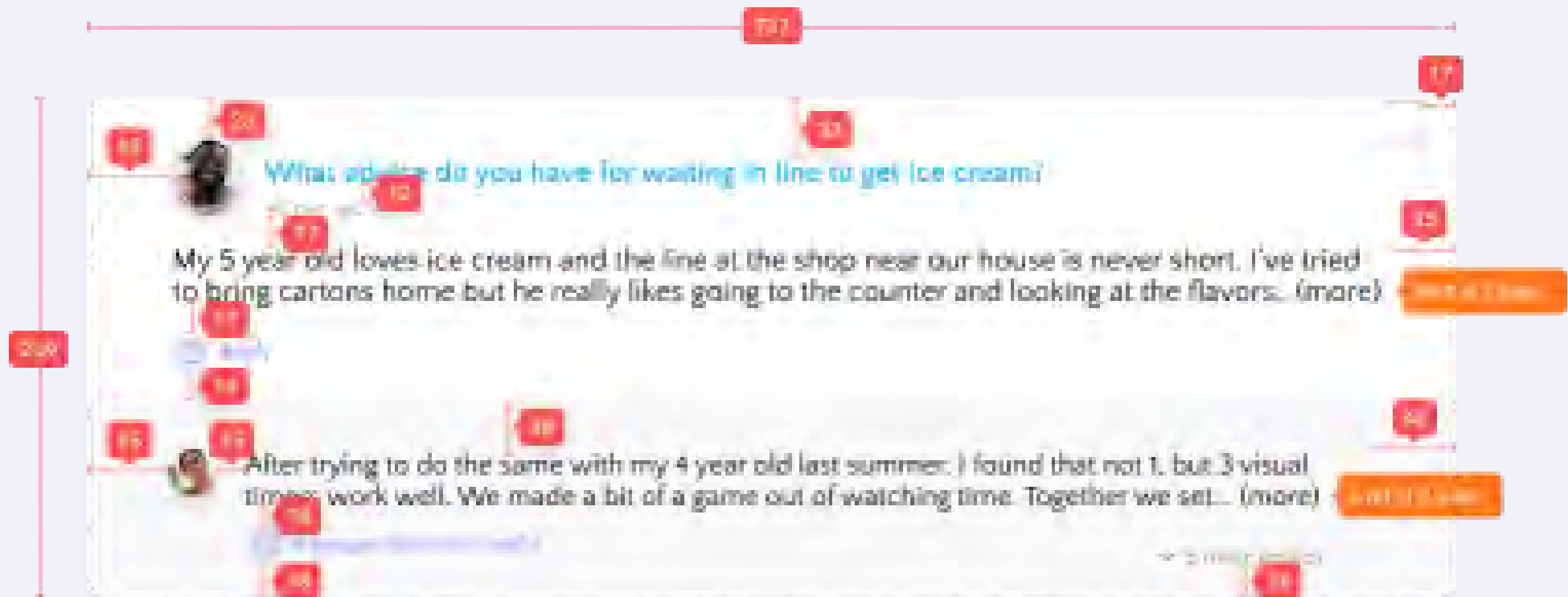
Question Cards
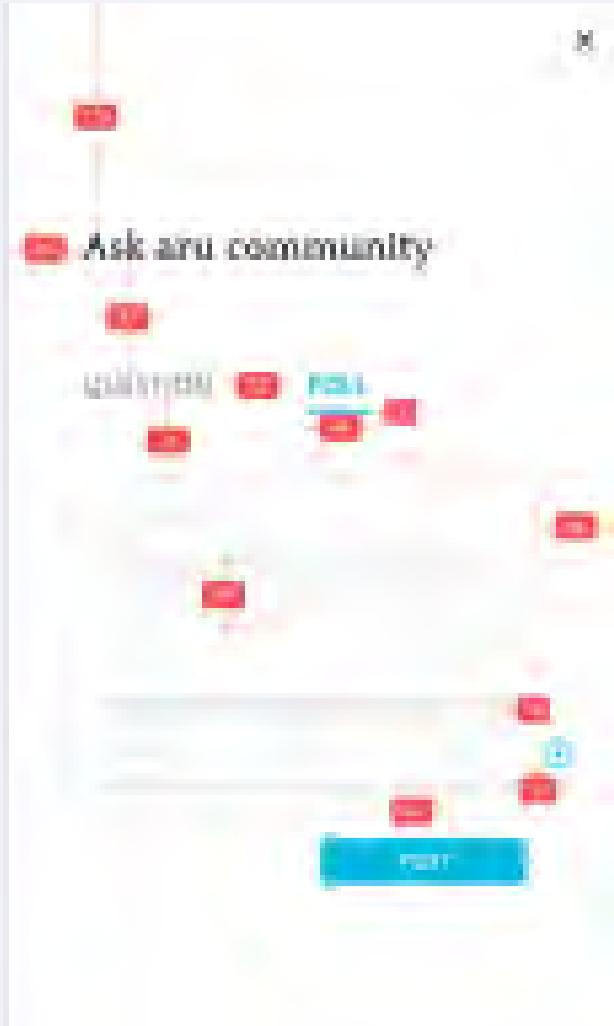
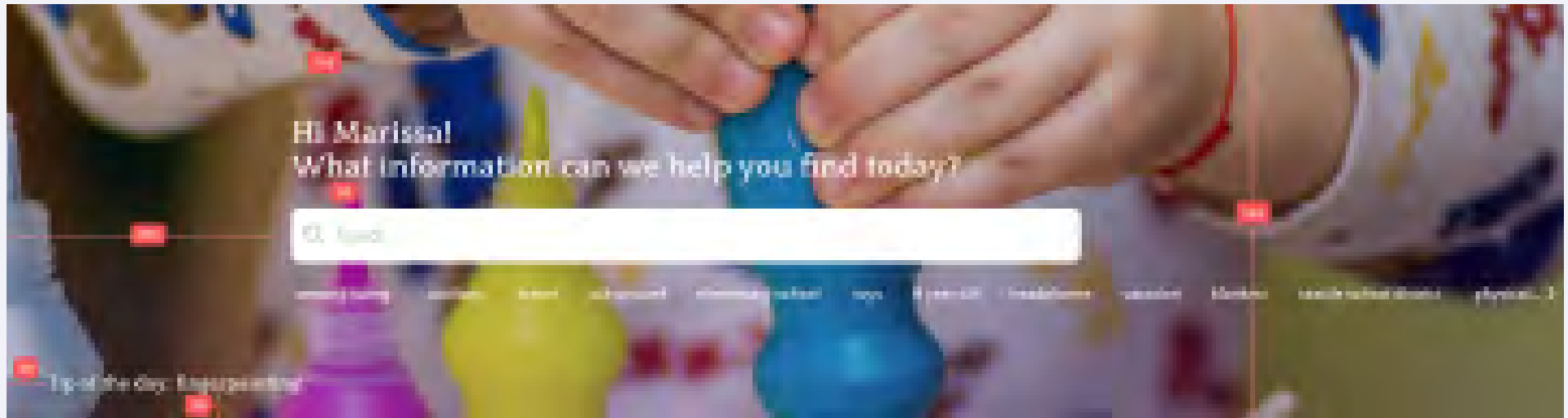# Answer Cards

Slideout

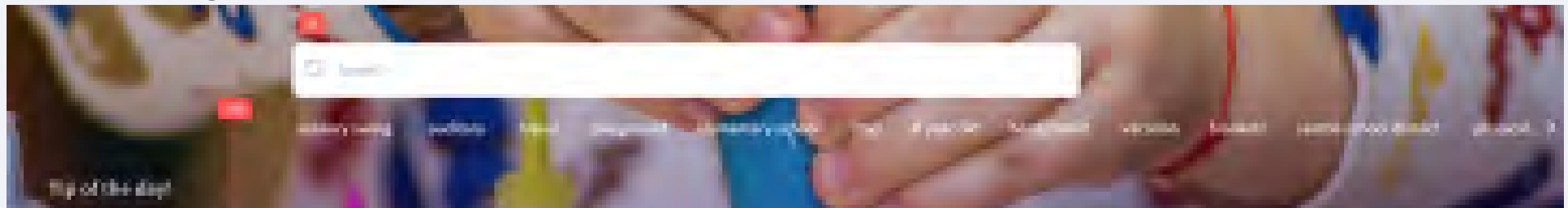738

20

20

×

1px #C2C2F2
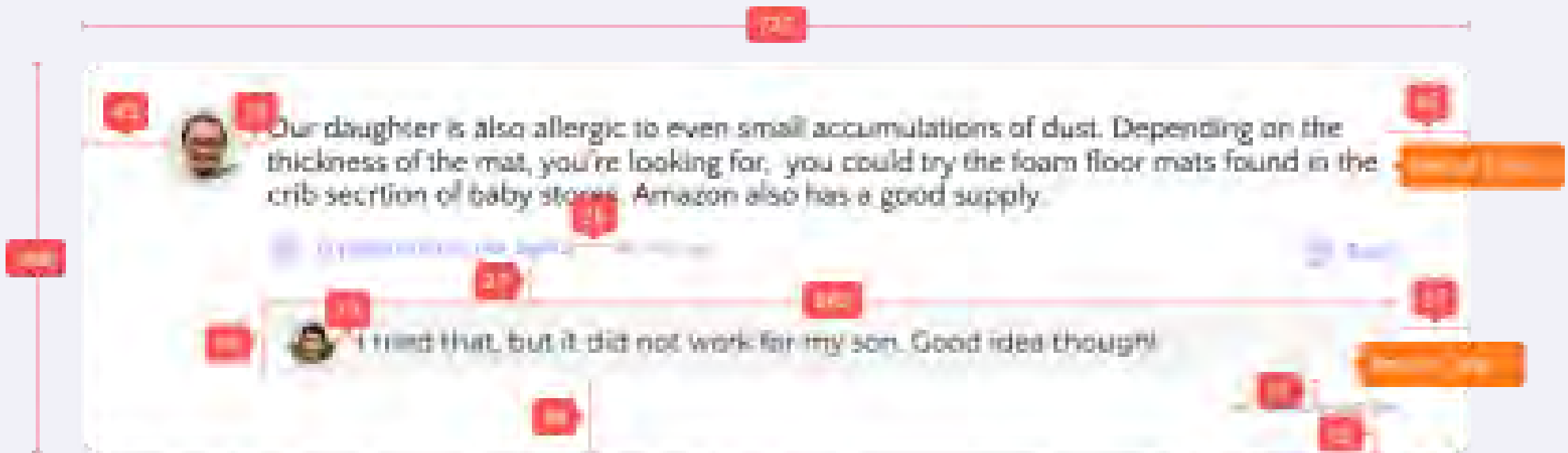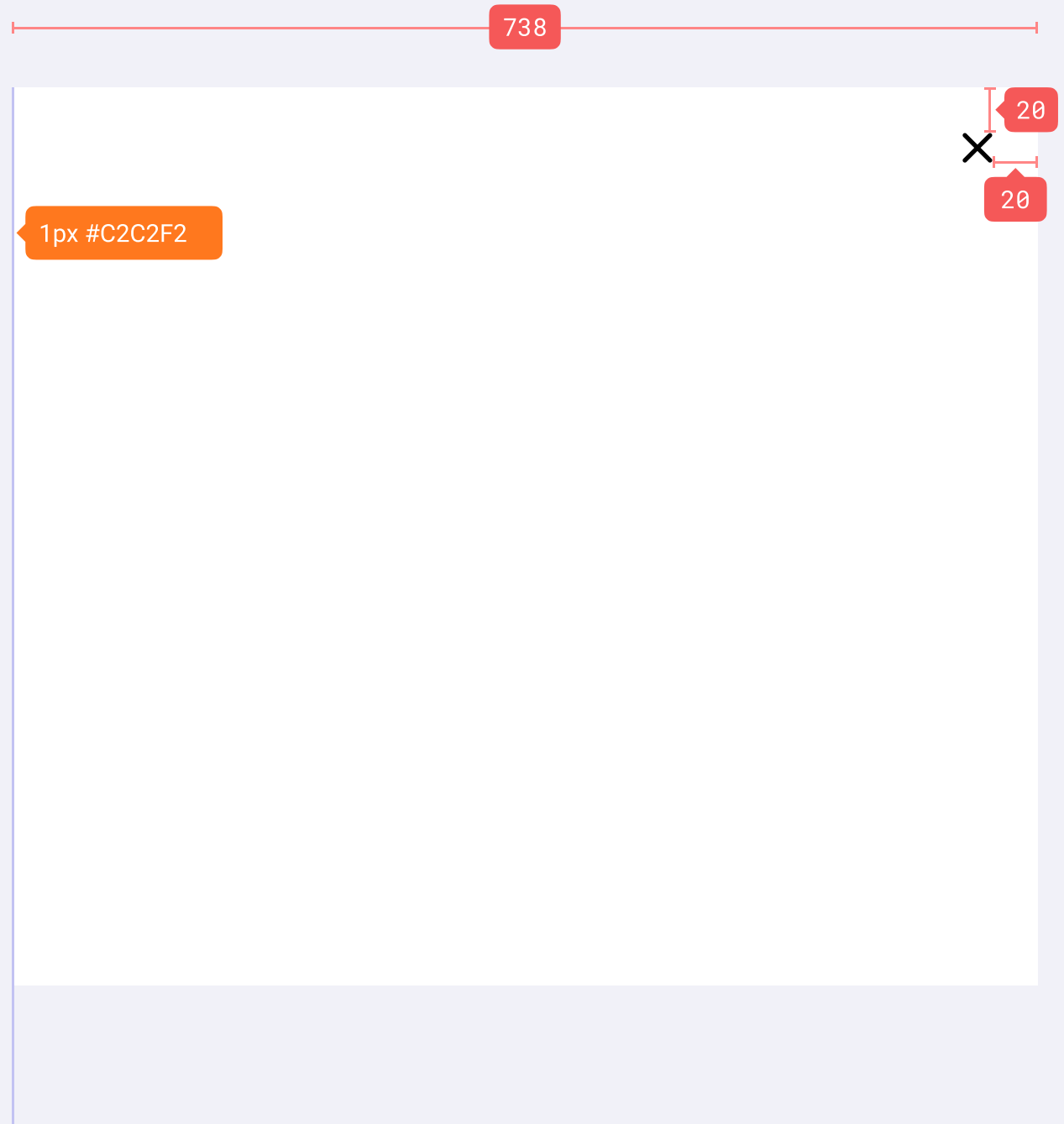
Ask a Question Slide Out
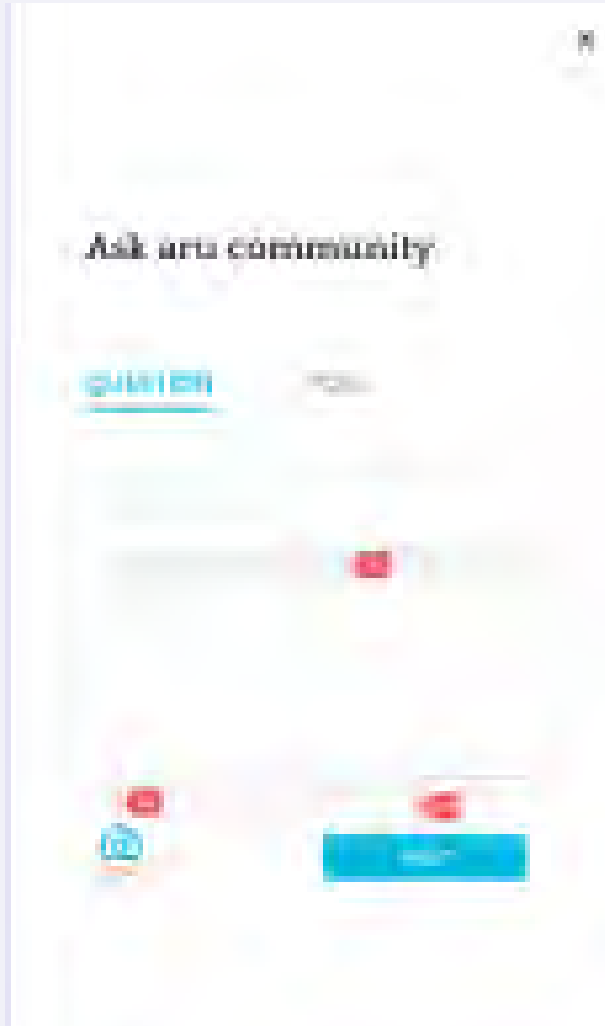
Home Page Imagery
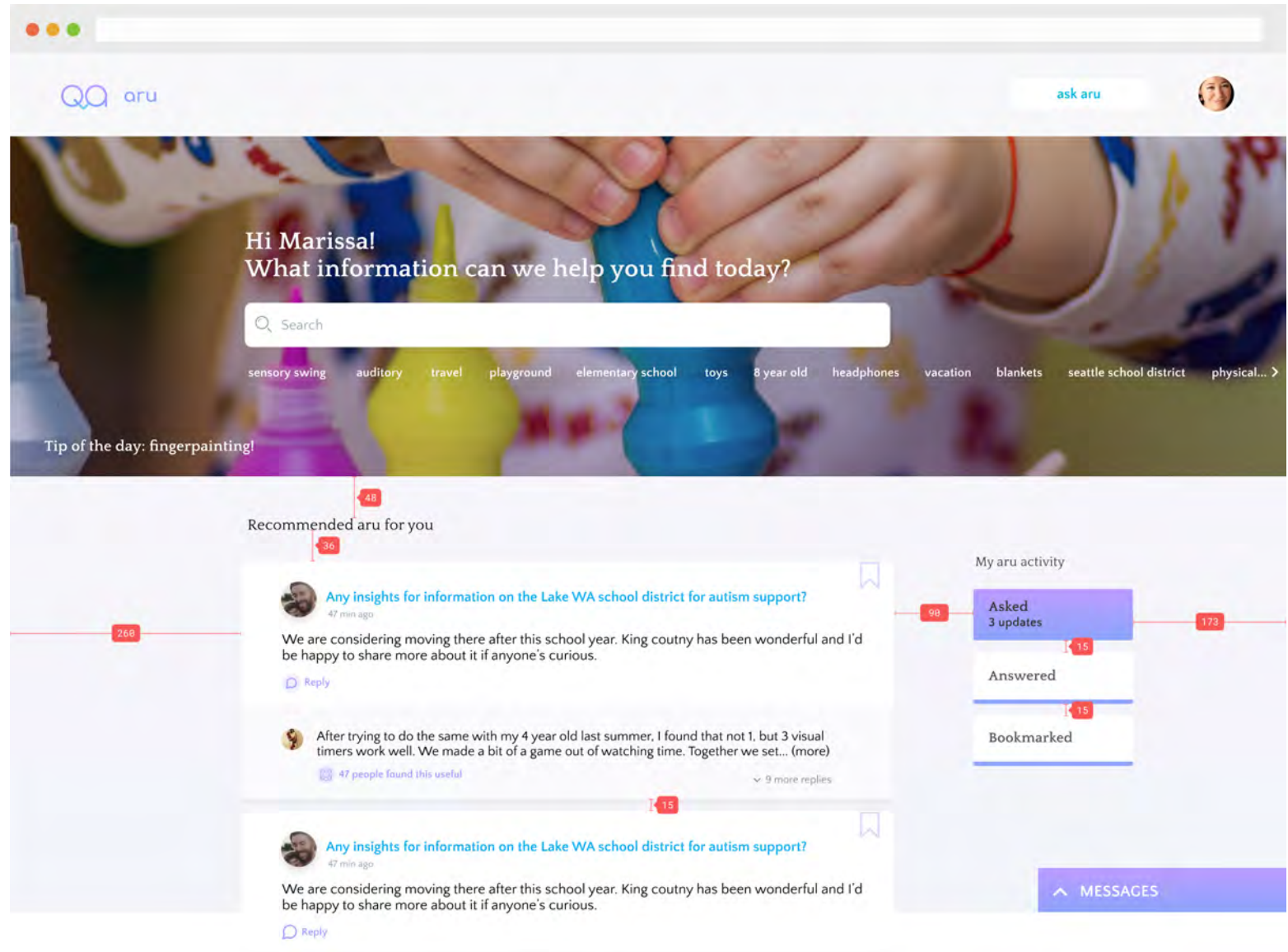
State 1 – Initial arrival

State 2 – Returning

Redlines

Home page | Answer page

Homepage

Homepage margins
and spacing

Answer

Answer margin and spacing

54