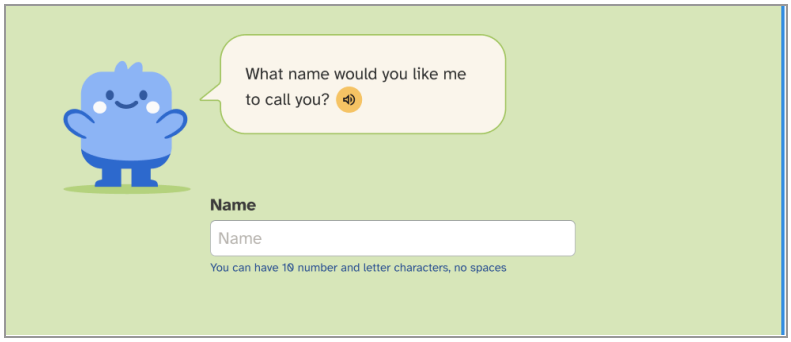


BeNDy Math Content Guidelines - Phase 2

Welcome to the UX Writing Content Guidelines for BeNDy Math. You can click on any line in the Table of Contents below to jump directly to a section.

Mission and Vision

The mission of BeNDy Math is to create an online skills-based math learning platform that caters to the unique needs of individuals with ADHD and others who struggle with traditional forms of math education. BeNDy Math is designed to create a fun and engaging learning environment that empowers our users by allowing customization of the learning experience to fit their specific needs and preferences.

We aim to bridge the gap between traditional educational systems and students with learning disabilities. We aim to remove the barriers ADHD students face when learning math, making it not only fun and engaging, but something they can take ownership of.

Writing Goals and Principles

With every piece of content, we aim to:

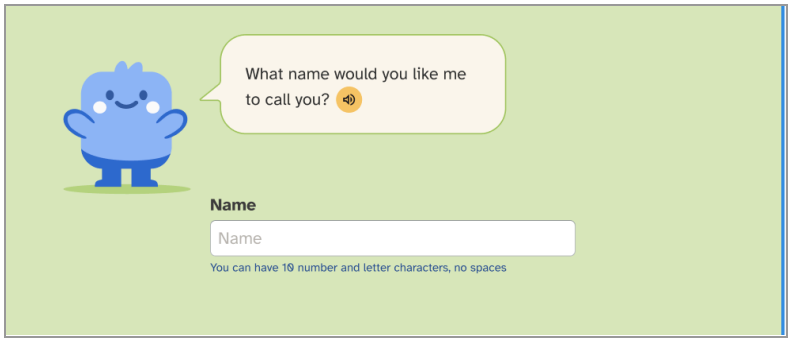
Educate - Teach learners what they are learning in school in a way that makes sense to them and at their own pace.

Empower - Enable learners with disabilities to engage in math with confidence through strong support and encouragement.

Respect - Treat learners with respect and communicate in a way that is considerate and inclusive.

ADHD Math Content Team - Phase 1

- Lerin Osthimer-Studt
- Erin Carty
- Emily Lange



- Kristianna Jaca
- Nimra Erfan
- Rossana Woo Mendelsohn

ADHD Math Content Team - Phase 2

- Nicole Megalo
- Janet Walker
- Kristen Merrill
- Potoula Anagnostakos
- Tanya Sharma
- Kevin Kim
- Christina Econ

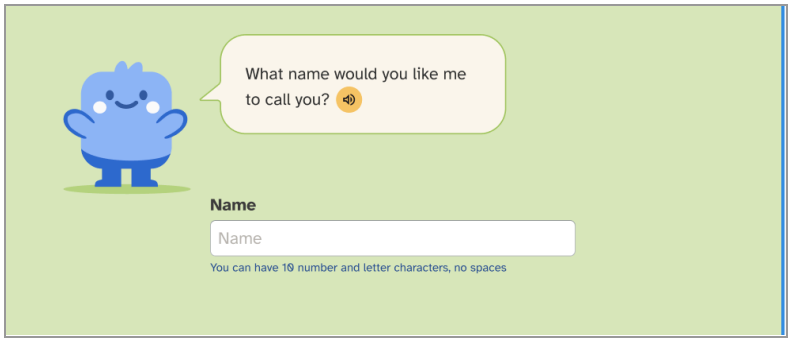
ADHD Math Content Team - Phase 3

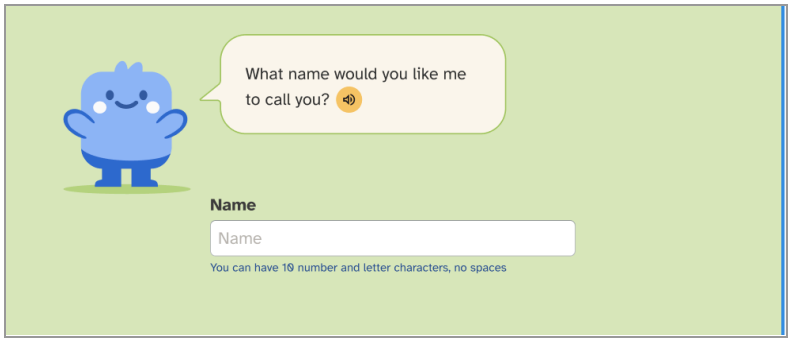
- Mark Nathan
- Juno Alaya-ay
- Desiree Hilaire
- Abrar Sawani
- Alexandria V

ADHD Match Content Team - Phase 4

- Liana Papyan
- Jessica Nasca

Table of Contents





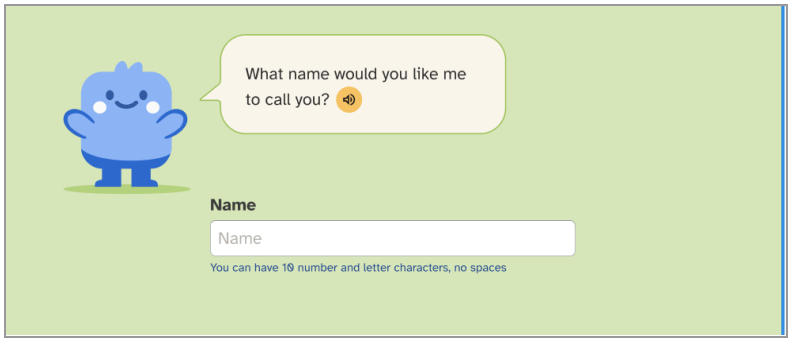
Brand Narrative

Adjectives that describe the brand

- Enthusiastic
- Encouraging
- Relatable
- Conversational
- Inviting

Personality

- **If the brand were a person, who would it be like?**
  - **Bill Nye** - Enthusiasm/passion/zeal
  - **Alton Brown** - Passion/Presentation/Information
  - **Steve Irwin** - Enthusiasm/passion/zeal
  - **Levar Burton** - Empathy/patience/understanding
- **How would it think, feel, and behave?**
  - **Behave** - -Your brainy study buddy that helps you master math in your own way!
  - **Think** - Intuitively, always provides guidance and support when you need it
  - **Feel** - Excited and passionate about their favorite topic and wants to spread that joy with you
- **What would be its main personality traits?**
  - Playful
  - Encouraging
  - Welcoming and inclusive
  - Patient
- **Describe the brand personality in one word.**
  - Empathetic (goal is to understand the users' needs and support them as they go through the app's math lessons)

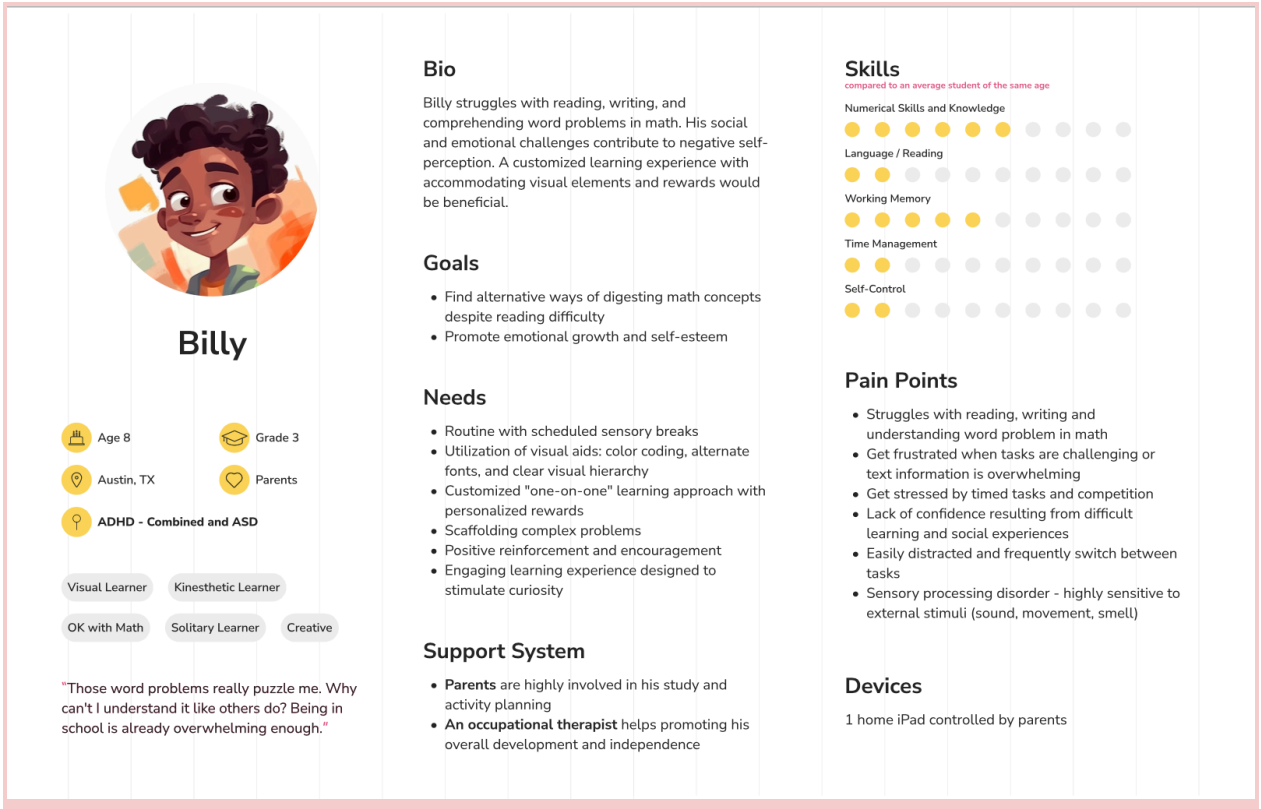


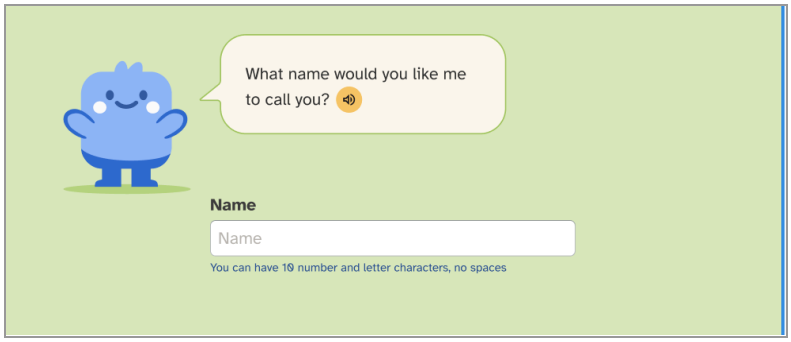
- **What type of relationship/interactions would it have with its different audiences?**
    - **Grown-Ups** - Liaison; ally
    - **Learners** - Good friend; camp counselor

Audience

- Neurodivergent learners and learners who struggle with math (age 8-11)
- Grown-ups & educators (parents, teachers, adults) of neurodivergent learners

Personas





Cooper*

Age 11

Grade 5

Orlando, FL

Single Parent

ADHD - Combined and Dyscalculia

Multi-Modal Learner | Pragmatist | Hates Math | Emotionally Reactive

"I struggle with numbers. Math just doesn't make sense to me, no matter how hard I try. It's frustrating!"

Bio

Cooper struggles with math concepts, number processing, and focus. He also faces challenges in emotional regulation, with tendencies towards anxiety and impulsivity. Cooper benefits from connecting abstract concepts to real-life examples and visual representations. A gamified learning experience would greatly enhance his engagement and enjoyment.

Goals

- Improve numerical skills, catch up with math learning at school
- Build math confidence and foster positive attitudes

Needs

- Visual representation of math concepts
- Relatable stories that make math concepts concrete
- Real-life scenarios for problem-solving strategies
- Explicit step-by-step instructions
- Scheduled breaks between studying sessions
- Recognition of progress and building confidence
- Personalized gamified learning experience with rewarding systems

Support System

- **The parent** is eager to help him but lacks the time and capacity for constant monitoring and guidance
- **A math tutor** provide one-on-one instruction in addition to other assistance

Skills

compared to an average student of the same age

Numerical Skills and Knowledge

Language / Reading

Working Memory

Time Management

Self-Control

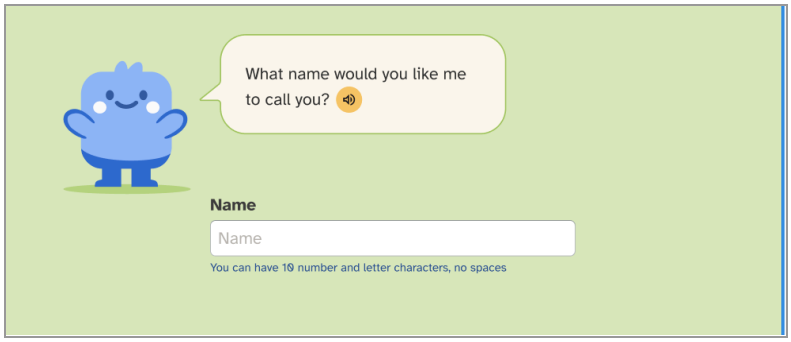
Pain Points

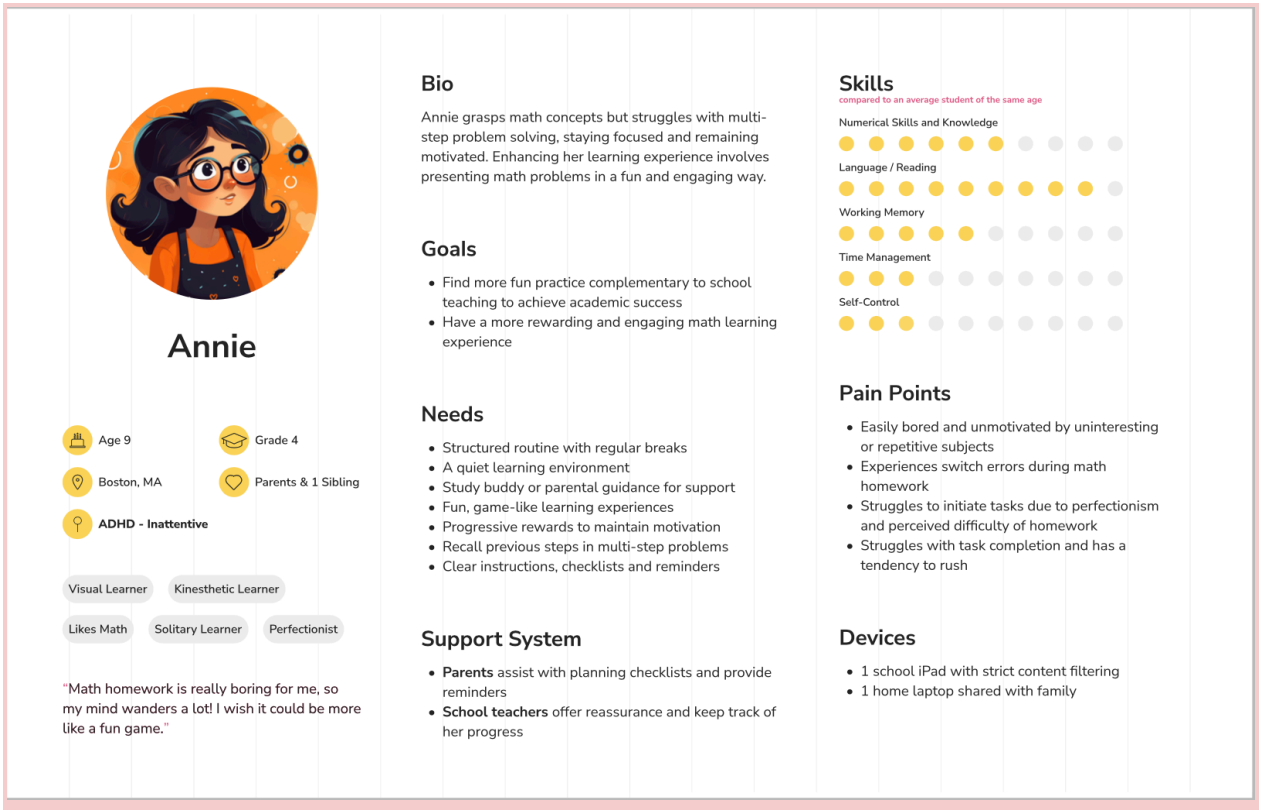
- Struggles with numerical concepts and arithmetic operations
- Difficulty in remembering and applying mathematical rules
- Restlessness and difficulty maintaining focus
- Anxiety and low self-esteem due to academic underperformance
- Slow processing speed in math tasks
- Emotional instability and defiant behavior disrupt learning environment and relationships
- Sensitivity to the pressure of competition

Devices

1 personal iPad and 1 smartphone

Note: Cooper fits our target user profile based on secondary research, but dyscalculia participants were not included in Phase 1 user study.

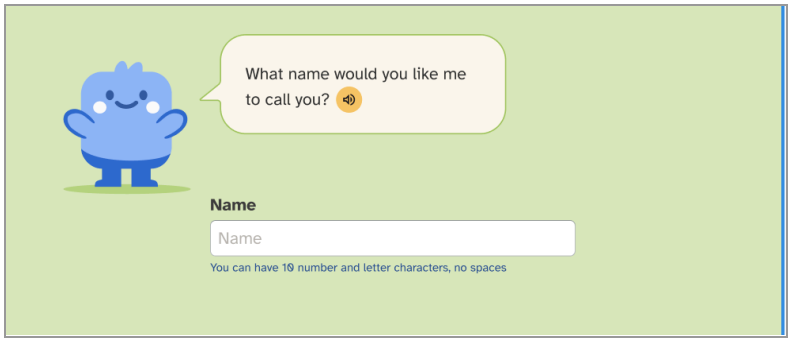




User Stories

- As a learner, I want the content to be presented clearly so that I can follow each step
- As a learner, I don't want to forget previous steps, so that I can learn how to solve the problem
- As a learner, I want explicit instructions, so that it is clear what I need to focus on
- As a learner, I want a gradual movement to mixed types of problems (e.g. ++---, then ++--++--, then +-+-+-), so that it is easier for me to follow along

Voice



Voice Values

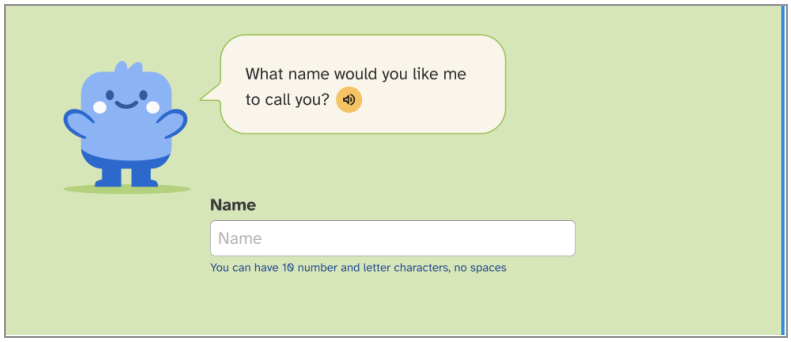
The app's core values help establish our voice:

- Empowering learners and their learning journey
- Equipping learners with the tools to succeed
- Tailoring the teaching methodologies according to our learners' needs, preferences, and learning styles
- Embraces and celebrates diversity in all learners
- Pursue growth and learning outside of a classroom or academic setting
- An encouraging and relatable tool that gives learners the power to succeed on their math journey

Voice Guidelines/Qualities

The app's voice values help guide the overall voice. This means that when we write copy, we are:

- **Enthusiastic**
    - We want our learners to feel excited about learning math, especially if they have felt discouraged by their math learning journey before. Math should be fun, not disheartening.
- **Encouraging**
    - We want to empower our learners with their own learning. We want to equip our learners with a growth mindset and to be able to stand up every time they fall down.
- **Relatable**
    - We want our learners to feel like the app is a peer, someone they can rely on and work with during their learning journey.
- **Conversational**
    - We want to speak to learners in the way they're used to in their everyday lives.
- **Inviting**



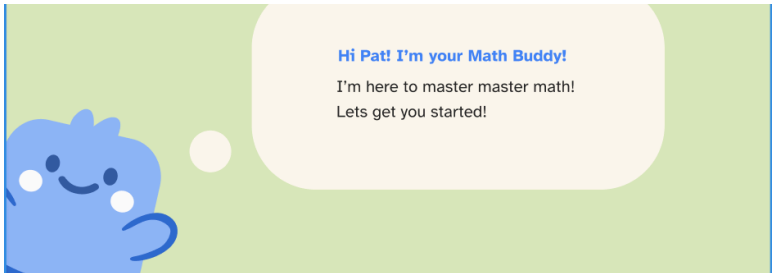
    - We want our learners to feel like they can take on math learning anytime, anywhere. We've made our product accessible to all types of learners. We want our content to be inviting and approachable to all.
- **Patient**
    - We want our learners to feel like they can learn at their own pace, not being limited to time constraints or having to meet deadlines.

Tone

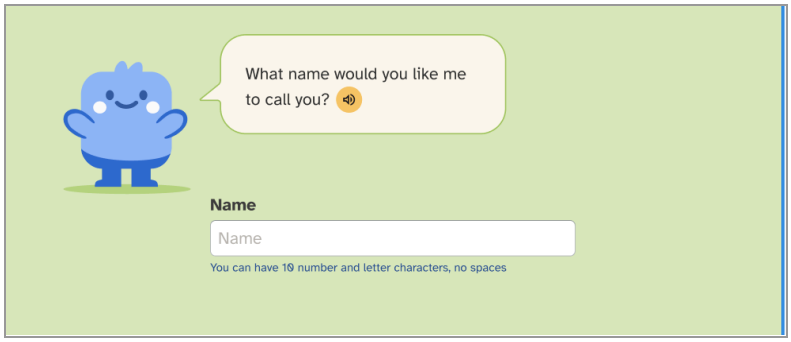
Tone of Voice

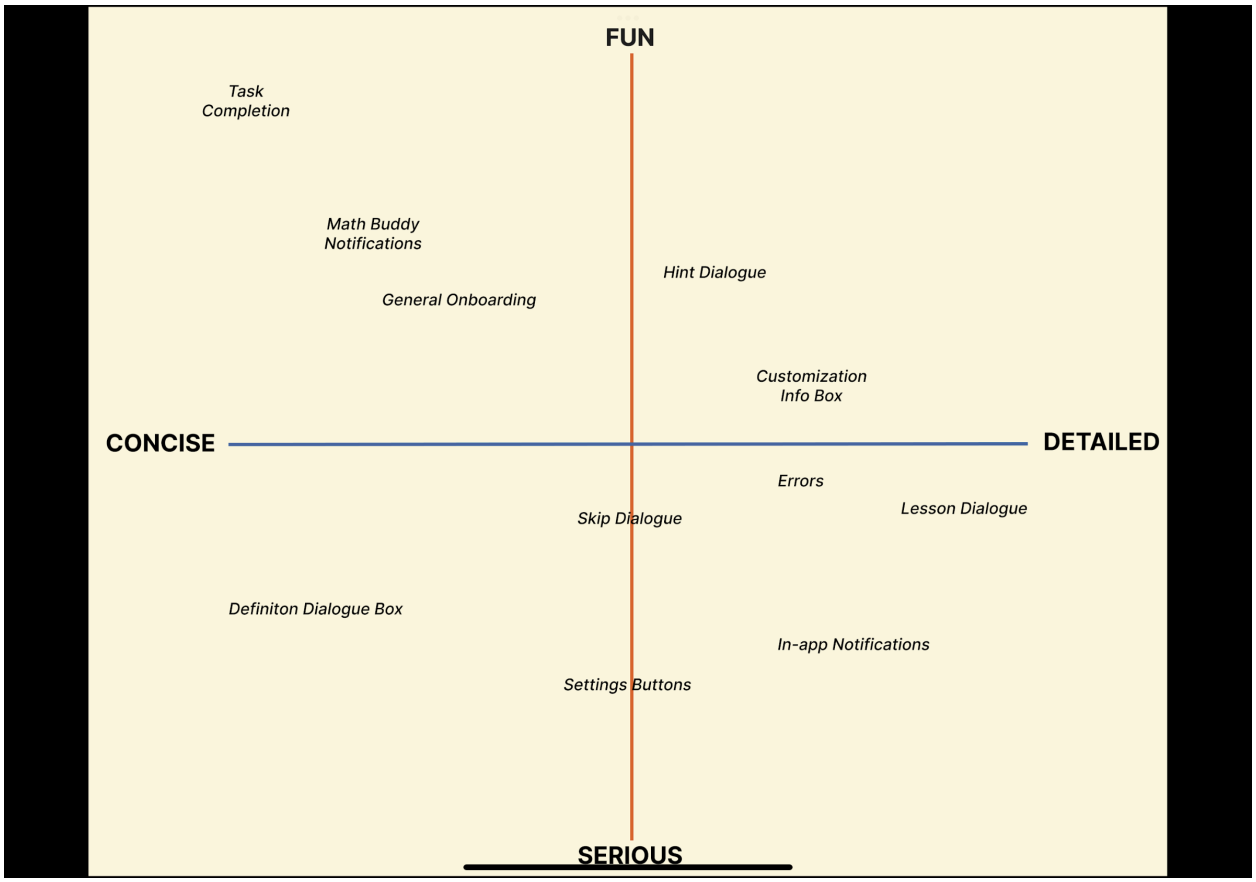
- **Playful** or Serious
- Formal or **Casual**
- **Respectful** or Irreverent
- **Enthusiastic** or matter-of-fact

Example: *"Hi Pat! I'm your Math Buddy!I'm here to help you master math!"* exhibits a playful,, casual, respectful, and enthusiastic tone of voice.



Tone Map

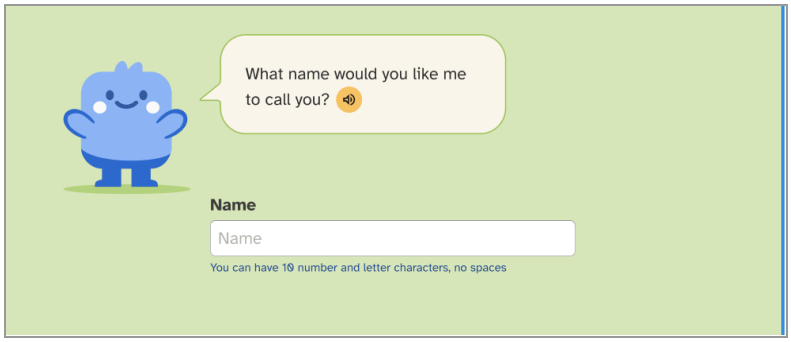




Examples of Use

Context/Situation	Do ✅	Don't ❌

Positive Situation (Correct answer/ Success message)	• Be encouraging, conversational, and human
	  ○ (e.g. "That's amazing!" "You did it!" "Great progress!")
		• Sound dry or robotic
		  ○ (e.g. "Your answer is correct)
		• Sound too childish or "babyish"



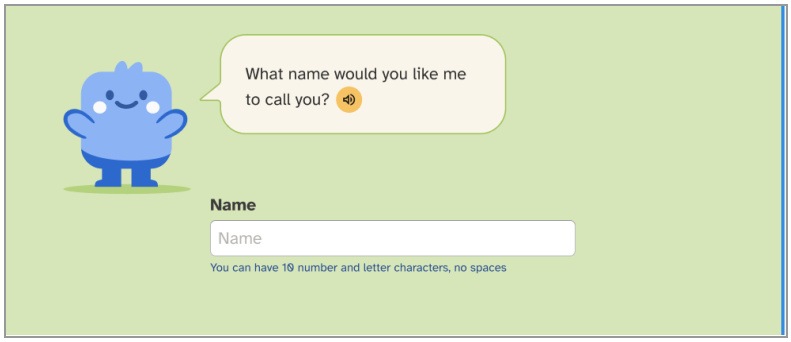
Neutral Situation (Informational copy/Body copy)	• Sound clear and concise in simple language ○ (e.g. "Before you start, we just have a few questions.")	• Sound overly academic or use jargon • Sound sarcastic

Negative Situation (Incorrect answer/Error message - field)	• Provide a clear prompt with choices to proceed
	• Encourage making attempts and the process rather than the end result
	  ○ (e.g. "Almost there! Let's try again" "Great try! Let's look back at the steps again")
	• Be empathetic
		• Assign blame
		• Use infantilizing language
		• Sound sarcastic
		• Use language that indicates shame or rejection
		  ○ (e.g. "Wrong," "Incorrect," "Too bad!" "That's a mistake.")

Content

Lesson Language

- Present math problems using the correct symbol (x instead of "times", + instead of "plus", etc.)
  - Do this: "What is the product of 16 x 3?"
  - Not this: "What is the product of 16 times 3?"
- Use simple and direct language when explaining steps in a problem
  - Do this: "Multiply 10 and 3." or " What's 10 x 3?"
  - Not this: "Multiply to find the product of ten and three."
- All mathematical terms will include an in-app definition that can be accessed by the learner (the definition of product or expanded form)



Grammar

- Use contractions as often as appropriately possible to encourage a natural flow of conversation
    - Do this: "*It's* time for your solo challenge"
    - Not this: "*It is* time for your solo challenge"

Punctuation

- Use punctuation at the end of sentences (period, question mark, exclamation point). *Example:*

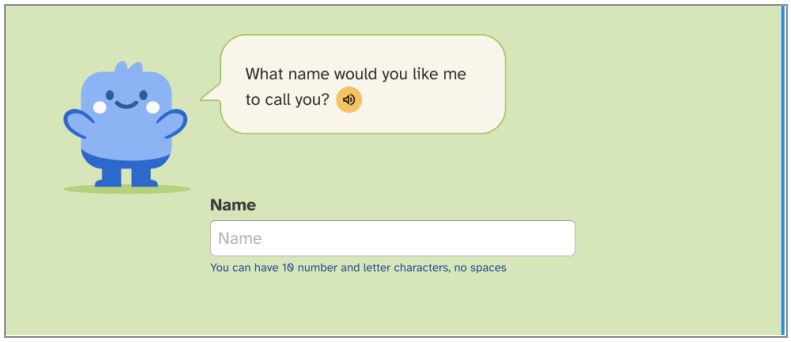
- Use the Oxford comma in a sentence with a list of three or more items.
- CTA buttons will not use punctuation marks

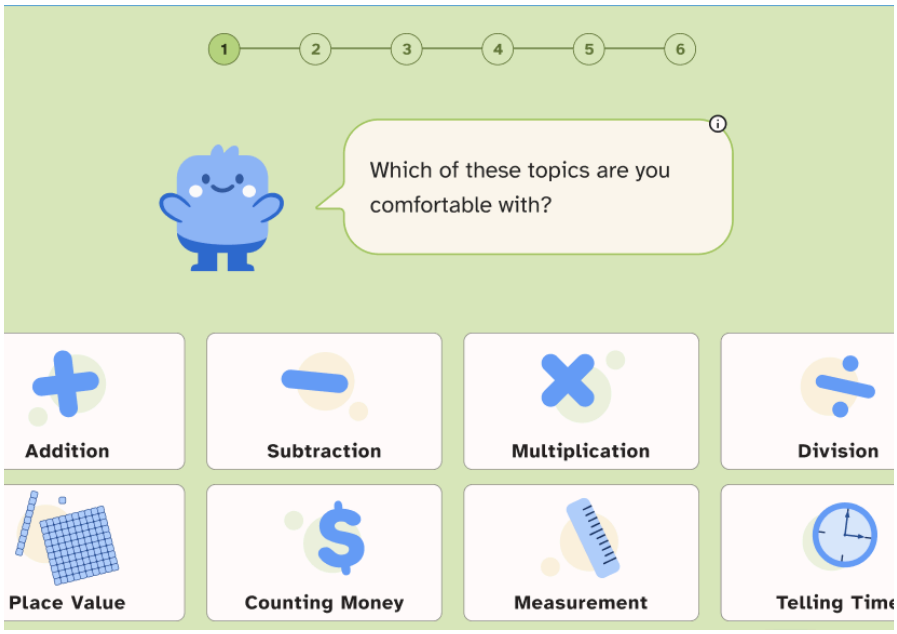
Numerals

- For math problems, including word problems, use the numeral (i.e. 2, 4, 10).
- When the number is outside of math problems, if it's between 0-9, spell it out. If it is 10 and over, use the numeral.
    - 0 - 9
        - Do this: "When you add, put two or more numbers together to find the total."
        - Not this: "When you add, put 2 or more numbers together to find the total."
- Numerals over 3 digits get commas (i.e. 1,248)

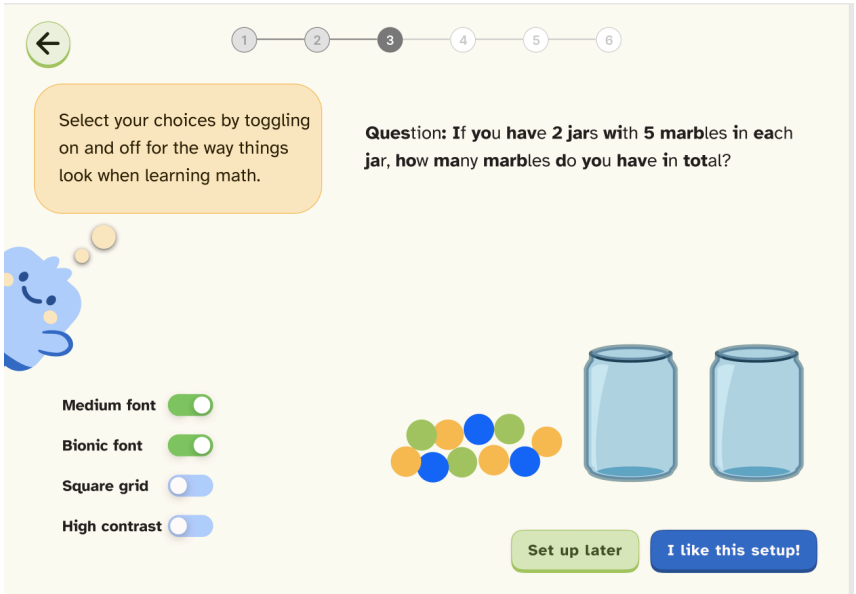
Formatting

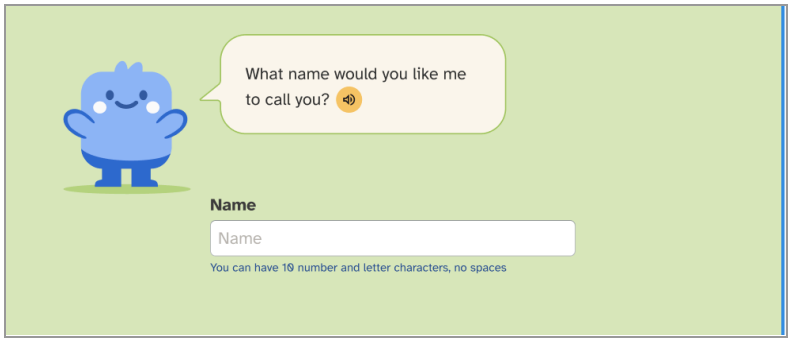
- Body text and descriptions will be left-aligned for better readability, with the exception of onboarding pages, pop-ups, and the reflection page. *Example:*





- Utilize different font weights, color-coding, visual hierarchy, or grids to help the learner focus and prioritize the targeted content. *Example:*





Parts of Speech

- Pronouns
    - Gender neutral
    - They/them/their
- Interjections *(used by Math Buddy)*
    - Wow
    - Yay
    - Bravo
    - Hey

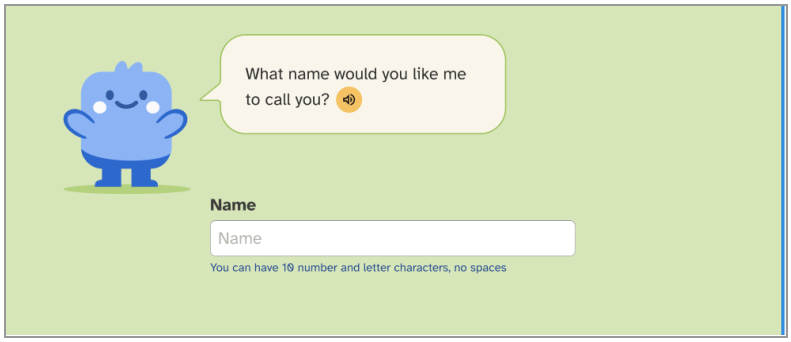
Capitalization

- Only titles use title case (“Box Method”, “Creation Station”), other body text will use normal capitalization (“Enjoy your break, you deserve it!”)
- CTA buttons will also use title caps (i.e. “Practice More” and “Keep Going”)
- Title sentences should have only the first word capitalized (i.e. “You’re all set!” not “You’re All Set!”)
- Title phrases should have all words first-letter capitalized (i.e. “My Multiplication Journey” not “My multiplication journey”)

Accessibility

Alt. Text

- Add alt text to all non-decorative images.
- Keep it short and descriptive, like a tweet.
- Don't include “image of” or “photo of”.
- Leave alt text blank if the image is purely decorative.
- It's not necessary to add text in the Title field.

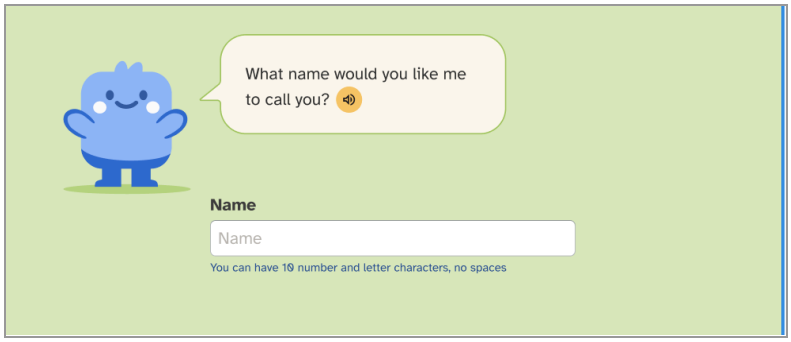


Content

- Use plain, direct, and concise language
- Second-grade reading level
- No jargon
- No abbreviations
- No acronyms
- Any mathematical terms will include an in-app definition
    - example: “multiplication”

Glossary

- **Adults:** This can include parents, guardians, caretakers, older siblings, etc. This does not include educators, teachers, tutors, school aides, etc.
- **Bionic Font:** Type of font that strategically bolds parts of words to make text easier to read and process.
- **Brown Noise:** Neutral, dense sound that contains every frequency our ears can detect (like white noise but has a lower, deeper quality).
- **Check List:** The step-by-step to-do list of how to solve a problem.
- **Draw:** Sidebar option that allows learners to freehand their own notes with a pen that can be customized by color and brush size, with a highlighter option.
- **Learner:** Our user and the star of the show!
- **Learn Together:** The guided practice during a lesson. Math Buddy works with the learner through the problem.
- **Math Buddy:** Mascot, advocate, and friend to our learners. They provide guidance and fun for the whole math journey.
- **Method, Array:** A method involving rows and columns to match the problem and find a solution
- **Method, Box:** A method that uses expanded form to solve the problem
- **Method, Stacked:** A method in which the bottom number is multiplied with the top number to solve for answer



- **Reflection:** The screen at the end of the lesson that prompts our learners to input their feelings on the lesson from 1 to 5; This information is intended to be used for future algorithms and for grown-ups to see.
- **Solo Challenge:** Independent practice during a lesson. The learner takes on the problem by themselves but can find hints from Math Buddy to help them through the problem.
- **Tools:** Sidebar option that is displayed when the learner is solving a math problem during a solo challenge.
- **White Noise:** Noise containing many frequencies with equal intensities.

Phase 2 Recommendations

- Develop Tone Spectrum guidelines
- Develop lesson structures
    - (i.e. how many problems, types of problems, topics)
    - Phase 1 research led us to see that Multiplication, Division, Fractions, and Decimals are consistent topics for the age range.
- Create content for the guided lesson videos
- Continue to determine approved and unapproved content
    - (i.e. phrases/words/tones)
- Develop a narrative for Math Buddy / or any other mascot
-