Prototype

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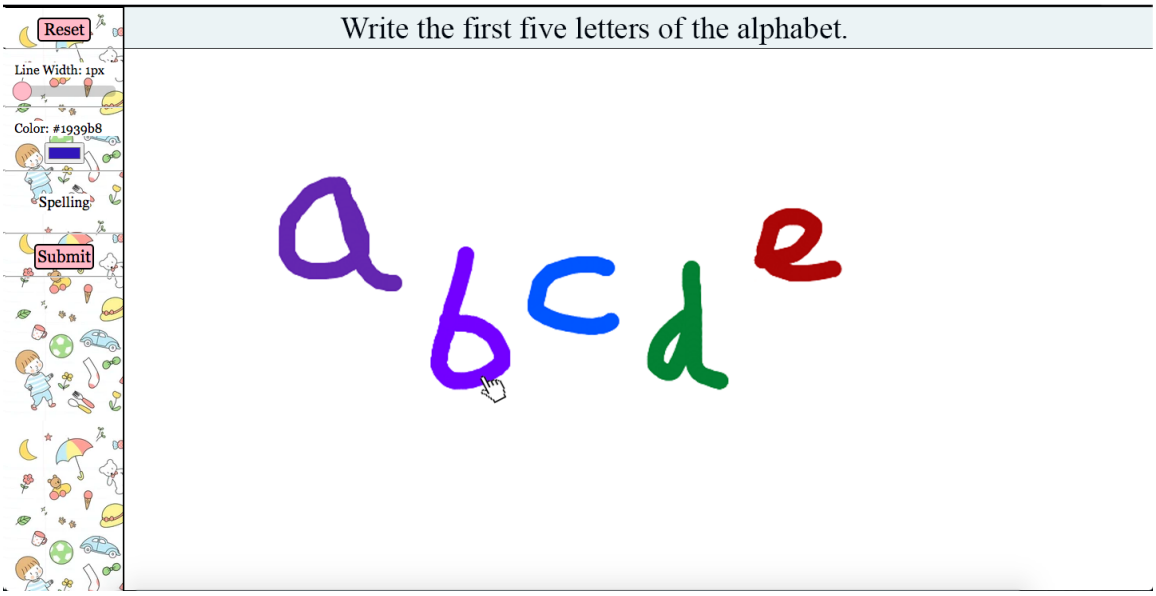
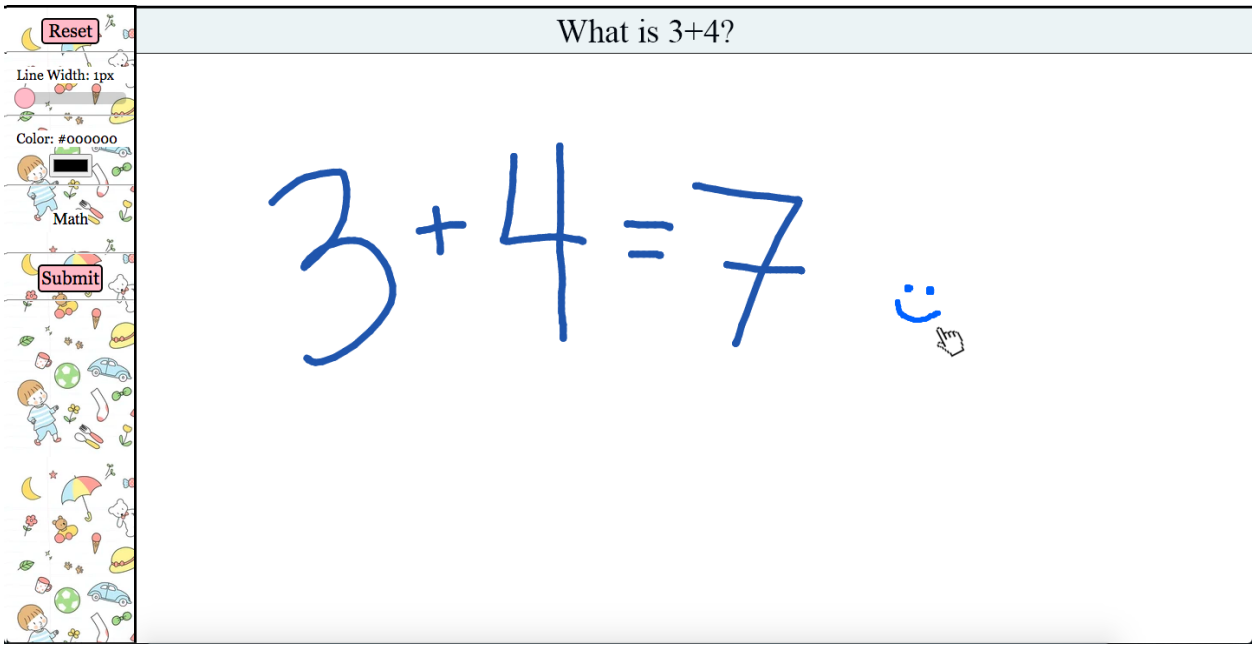


Prototype


Reset
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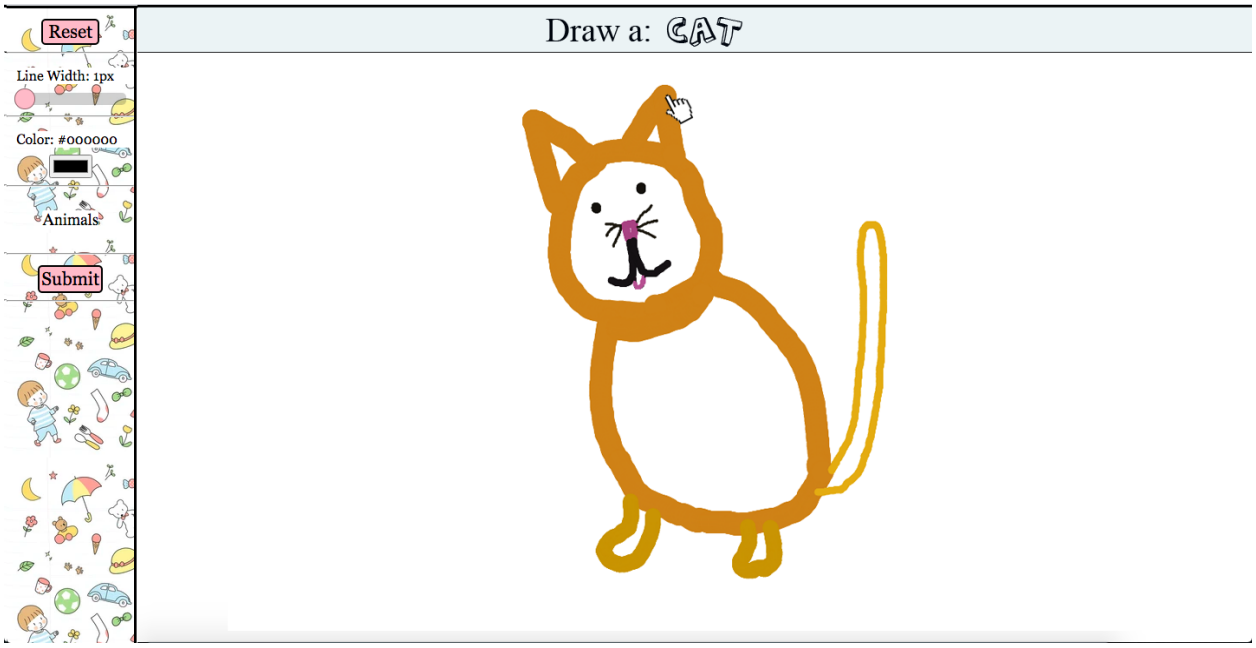
Math
Submit
What is 3+4?
3+4=7


Reset
Line Width: 1px
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Animals
Submit
Draw a: CAT

Prototype

Written Pitch

Our app is intended for 5-6 year olds at the elementary school level. Our app is designed to help children solve problems and draw words with digital drawing tools. The home page displays categories that children and parents are able to choose from (mathematics, animals, spelling, etc.) Children are asked to recall information by drawing out objects and answers to problems under the supervision of a caretaker. Answers to problems are assessed and evaluated by the caretaker. Children are then given positive affirmation by the app for their artistic abilities. Our product is designed to aid cognitive development by improving fine motor and visuospatial skills, facilitating language and math learning, increasing creativity, helping children to regulate and express emotions, stimulating information-recall and helping dyslexic and special-needs children.

Our prototype is based upon various pieces of research. It has been shown that touch-screen tablets help enhance literacy skills such as letter name and sound knowledge (Neumann, 2017). In addition, sketch apps may contribute to the improvement of fine motor skills (Kim et al., 2016). In this study, an interface was used to test the improvement of fine motor skills. Children's fine motor skills are associated with enhanced drawing ability, creativity, self-regulation, and academic readiness. Additionally, iPad apps may contribute to the development of visuomotor skills in special-needs children (Coutinhoa et al., 2017). iPad-using participants were found to be more engaged in the learning process overall. Lastly, research shows that children use drawing to help regulate their emotions (Drake & Winner, 2012). All of these elements inspired us in the development of the prototype.

The problem we will solve with the development of the prototype is multifaceted. Because children are not yet cognitively developed, many problems require addressing in the

context of this project. For example, younger children are not as creative as older children and adults in the traditional sense, so this app can help with the fostering of creativity in this way by encouraging children to draw and to replicate visual information based on memory. This problem is important, as creative citizens are necessary in helping innovation take place in society. In addition to this, children do not have well-developed fine motor skills and visuospatial skills. This is a problem that we seek to address in our project, and it is an important one, because these skills are necessary for healthy flourishing and survival. These skills will be improved through the use of the application, as the child will be able to gauge dimensions of drawings and to estimate how something looks while transcribing the thing onto the screen and using their fingers in doing so, thereby improving their motor skills and visuospatial skills. In addition, young children lack many language and math skills, which are necessary for intellectual and academic achievement and aptitude. These skills can be developed through the use of practice, communication and learning. Our app helps with the elements of practice and repetition, as children may be asked to relay knowledge through problem-solving. Many children lack the ability to effectively express and regulate their emotions. Drawing is an activity that is shown to help with emotional regulation. Luckily, our app requires children to draw, and may result in a better ability to emotionally regulate. Children with learning disabilities such as dyslexia can struggle immensely in completing tasks such as reading and writing. Special-needs and dyslexic children can be aided through the use of this app, as interactive apps have the capacity to help them with language and literacy skills, such letter transcription, letter name and sound knowledge.

References

Coutinho, F., Bosisio, M.-E., Brown, E., Rishikof, S., Skaf, E., Zhang, X., … Dahan-Oliel, N. (2016, July). *Effectiveness of iPad Apps on Visual-Motor Skills Among Children with Special Needs Between 4y0m–7y11m*. ResearchGate. https://www.researchgate.net/publication/292502357_Effectiveness_of_iPad_Apps_on_Visual-Motor_Skills_Among_Children_with_Special_Needs_Between_4y0m-7y11m_A_Pilot_Study.

Drake, J. E., & Winner, E. (2012, September 11). *How children use drawing to regulate their emotions*. Taylor & Francis. https://www.tandfonline.com/doi/abs/10.1080/02699931.2012.720567?scroll=top&needAccess=true&journalCode=pcem20.

Kim, H., Taele, P., Seo, J., Liew, J., & Hammond, T. (2016). *A Novel Sketch-Based Interface for Improving Children's ...* ResearchGate. https://www.researchgate.net/publication/303268432_A_Novel_Sketch-Based_Interface_for_Improving_Children's_Fine_Motor_Skills_and_School_Readiness.

Neumann, M. M. (2017, October 22). *Using tablets and apps to enhance emergent literacy skills in young children*. Early Childhood Research Quarterly. https://www.sciencedirect.com/science/article/abs/pii/S0885200616301405.