

I'm creating an interface that turns basic math problems into animated visualizations in order to simplify the concepts, especially for kids.

## Thesis

### Research

How can we generate visuals that explain simple math problems

Dashboard: allows the user to experiment

1. Getting an understanding user input

1. built in control buttons for supported operations

+

-

/

x

...

2. text box

Can the text be mapped to a supported operation?

If yes, how many entities are in the problem?

If the number of supported entities is found, move to mapping the visualization

2. Mapping the understanding to a visualization

Narrative: guide the user through a set of examples

Verbal Problem

Mathematical Problem

Both: start with a case study and follow it with the dashboard

### Prototype

UI

UX

Wireframes

It needs to be friendly, it will be used by kids

### Audience

Age: 4-12

### Inspiration

Stitch Fix ([link](#))

Design Aesthetics

Setosa ([link](#))

Interactivity

The variety of visualizations

R2D3 ([link](#))

Visualization Animation

Simplicity

Clarity

Design Aesthetics

Example of a narrative approach

### Goal

This semester

Design an interface that translates simple math problems to interesting and animated visualizations

Later

Improve the system, add more functions and expand the audience

Add more subjects

### Challenges

How my visualizations can be convincing and replace textbooks

Understand my targeted audience

How to engage students and make it more interactive

Visualizations should be interesting and informative to be successful

How to improve it so it works with more advanced operations

## Writing

Latex

Indesign

## Datasets

Still working on this area

example of simple math problems and their solutions in all possible ways

Primary school math books

## References

Articulate: Creating Meaningful Visualizations from Natural Language ([link](#))

Sim VL

Automatic Generation of Visual ([link](#))

Visualization Executer

Illustrative math ([link](#))

Setosa ([link](#))

Calculator ([link](#))

Story telling with data ([link](#))