TAYLOR UNIVERSITY | Computer Science & Engineering Department

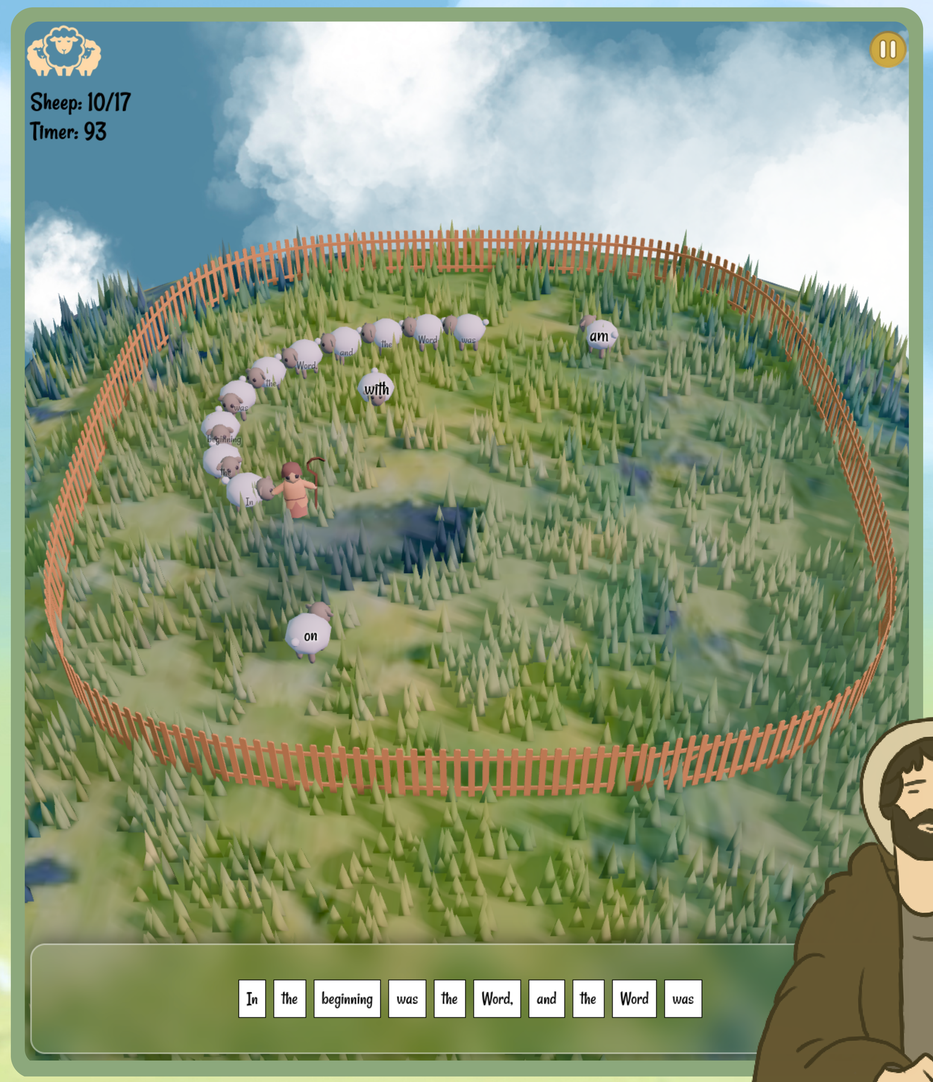
Sheep & Shepherd

Quiz your scripture memory by finding lost sheep

Introduction

Sheep and Shepherd is an activity developed for CSE's Bible memorization program, a suite of activities and tools to help users memorize Bible verses. Our goal was to make memorizing fun by turning a quiz into a game. It needed to be cute, interactive, dynamic, and fun.

We were heavily inspired by Snake and by physics simulations. In the final game, as the player collects sheep, they form a line and follow the shepherd.



Design & Tech

The memorization project will be web-based, so we built *Sheep and Shepherd* with standard web technologies for modern browsers. All of the game logic is done in JavaScript, and the UI animations were done with pure CSS.

We used Three.js to render and manage the 3D world in-browser. Three.js is not a full game engine, so while it did a lot of heavy lifting, we still needed to build most of the "engine" ourselves out of Three.js components and standard JavaScript.

We also used Brill to pick believable distraction words, Bolls.life to get Bible verses, Node and Vite for development, and Blender and Procreate to make most of the game assets.

Challenges

Exporting assets from Blender to Three.js was usually a simple process, but the grass had multiple issues and went through multiple iterations to get right.

JS likes working with events and asynchronous promises, but we needed it to use loops and stay in sync.

Mobile browsers tend to squish and stretch when the user interacts with a website. In addition to regular browser compatibility, we needed to fight against these behaviors.

Future Work

The game is very static when the shepherd stands still. Extra animation would make the game more lively.

The sheep following the shepherd usually get stuck in the center of the play space. This could be fixed with more sophisticated following logic.

While the game is designed to be an activity within a larger project, currently it's stand-alone. It needs to be integrated into the larger project.

Learning

Developing *Sheep and Shepherd* taught us a lot about working as a team. We leveraged Git and Gitlab to build the final project piece by piece. We did stand-ups and demos with the other groups. We got users to test our designs and break our assumptions. And ultimately we built an activity that met our goals at the start of the project: a cute game that makes quizzing interesting and rewarding.

Us


Hanwen Luan
Icebear-M


Charlie Mikels
charliemikels

Tools

blender | three.js | HTML | CSS | JS | GitLab