

Introduction

Total time to complete

2-3 hours

Welcome to PTC's LEGO Spatial Computing Project! These lessons will instruct users how to connect a LEGO Education SPIKE Prime set to Vuforia Spatial Toolbox, PTC's latest solution for augmented reality and spatial computing. Vuforia Spatial Toolbox allows users to control and connect the physical world with digital interfaces through the Internet of Things, a mobile device, and a computer. There will be a full deep dive on Vuforia Spatial Toolbox later in the project, but please check out the product's [home page](#) for a brief overview of it to start.

In addition to augmented reality, spatial computing, and the Internet of Things, students will familiarize themselves with JavaScript, engineering concepts like Fast Fourier Transforms, and much more over the course of this project.

This document will map out the requirements that are necessary to complete this project and provide a table of contents for what to expect to be working on throughout these lessons.

To view an example of what the outcome of this project will look like, check out this [FFT Activity and Learn About IOT Using Airtable](#) video on YouTube.

For troubleshooting, check out the [Vuforia Spatial Toolbox forum](#). It is monitored regularly by members of the PTC Spatial Toolbox team and members of the forum community.

For anybody interested in the actual radial engine that inspired this project, check it out on [Rebrickable](#).

Requirements

Below is a list of components that are necessary to complete this project. They can be broken down between hardware and software. It is also recommended that this project is completed in an area where there is a strong Wi-Fi connection.

Hardware:

iPhone, iPad, or iPod Touch running iOS 12.0 or later (Android is not currently supported)

[LEGO SPIKE Prime set](#)

LEGO Education feedback pamphlet that comes with SPIKE Prime set

Computer running MacOS or Windows with Bluetooth capabilities



Software:

[LEGO SPIKE App](#)

[Vuforia Spatial Edge Server](#)

[Vuforia Spatial Toolbox mobile application](#)

[Git & GitHub Desktop](#)

[Node.js](#)

[Visual Studio 2019](#)

[Airtable](#)

***Note:** The Downloads section of this project will give directions for how to download all software components

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Project Workflow

