

01

Senso - The Laser Ruler

Automated Wireless Ruler
User Guide - By: Theodore Ross Bermejo

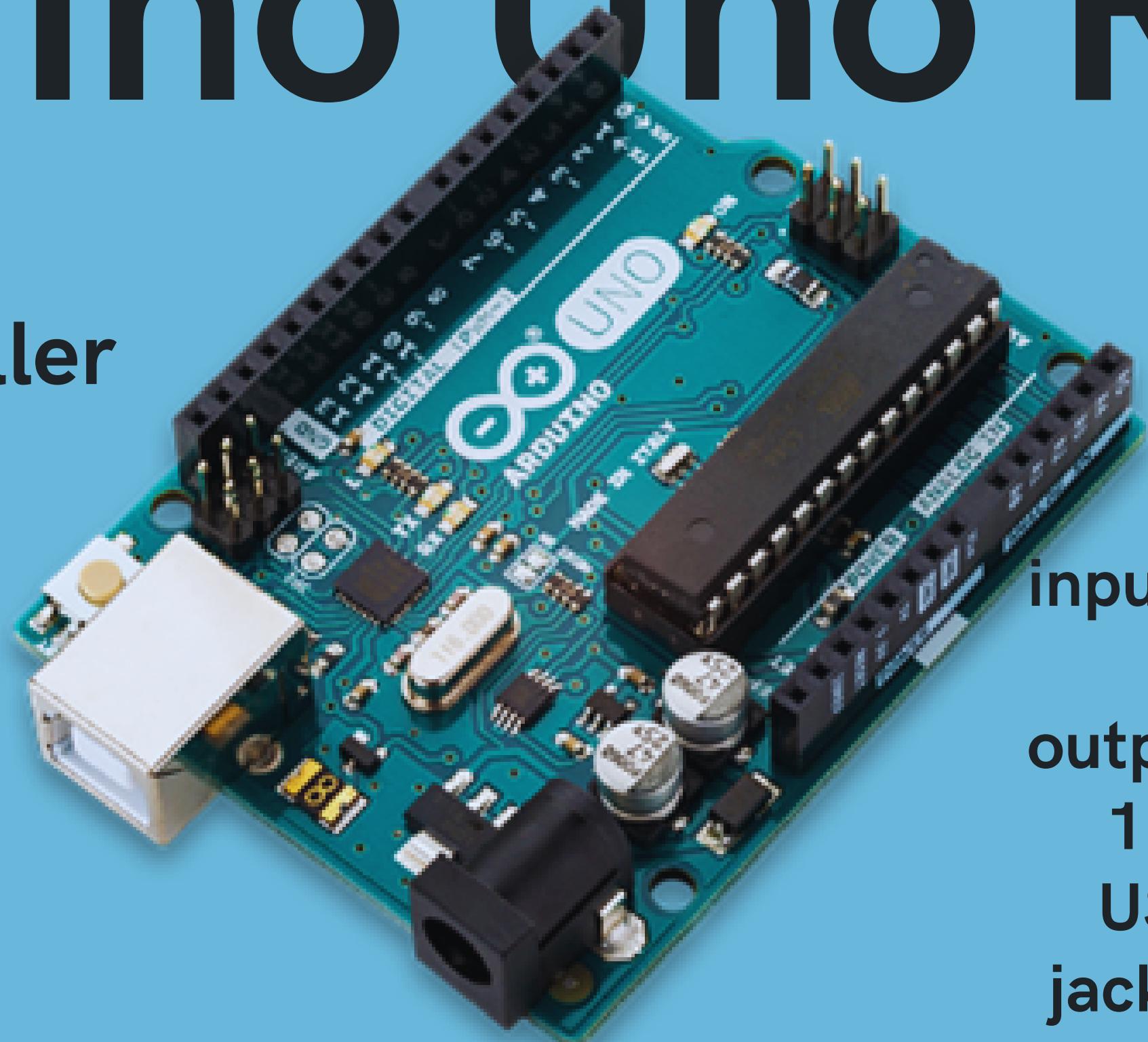
What is Senso - The Laser Ruler?

Introduction

02 Senso is an automated wireless ruler that uses a laser module type of component called Adafruit VL53L0X Time of Flight Distance Sensor that can measure a certain distance and can measure the height, width, and length of an object like a carton box without a limit not until the user press the End Button, and this can theoretically made possible by using Arduino.

Arduino Uno Rev 3

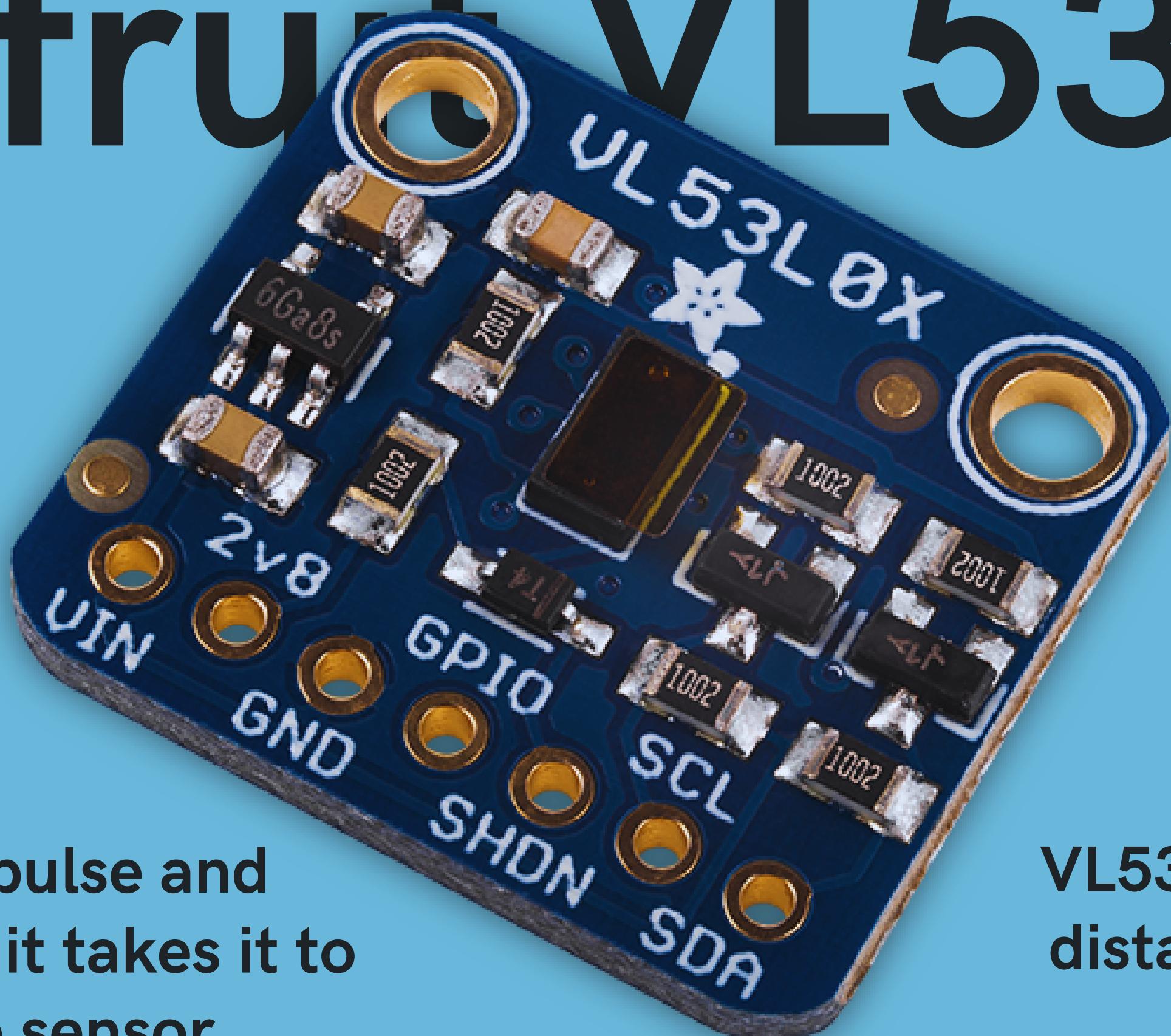
a microcontroller
board based



Responsibility

It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button.

Adafruit VL53LOX



It sends a laser pulse and measures the time it takes it to get back to the sensor.

VL53LOX can measure distances ~30 to 1000 mm (100 cm)

OLED 128x64 Display



Push Button 6x6x5

9V Alkaline Battery

Power Supply



A standard 9V battery, useful for circuits that required to be ported or are not located near wall power.

Device Overview

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Device Buttons





- Start
Button

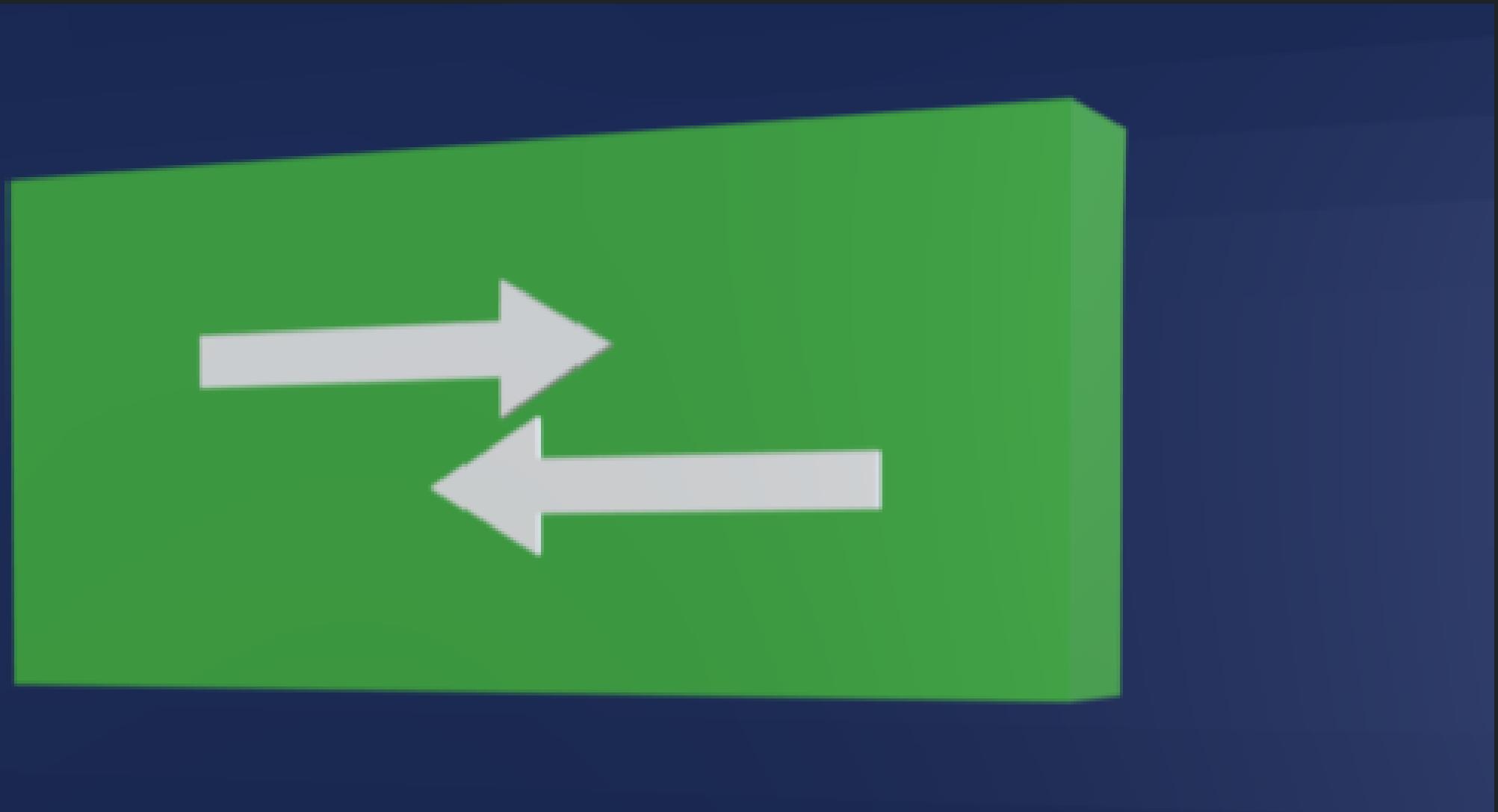
- Mode
Button



PRINT

OFF

- OFF & PRINT



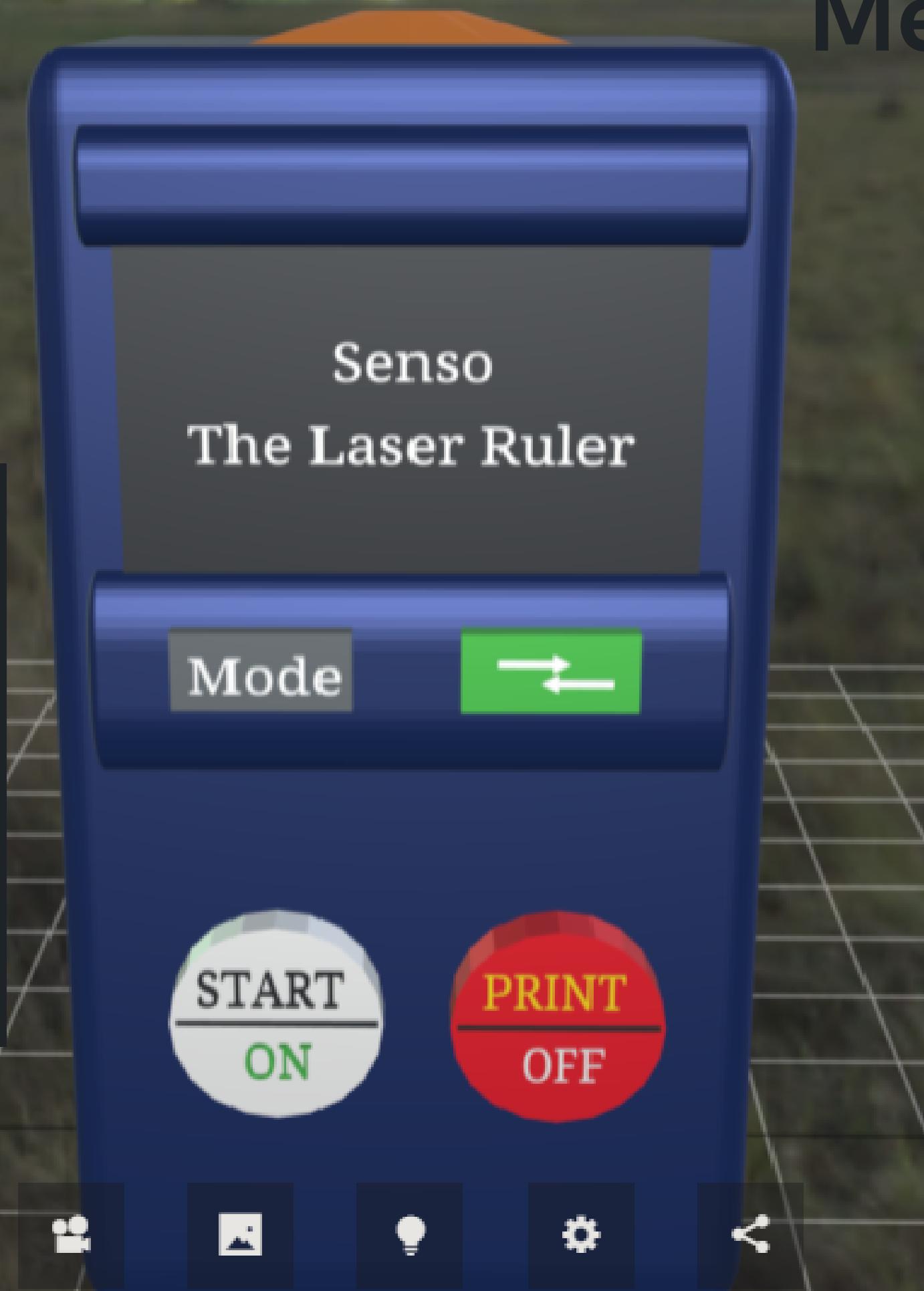
- Arrow
Symbol
(Convert)

How to turn on the device Senso?

Message Indicators

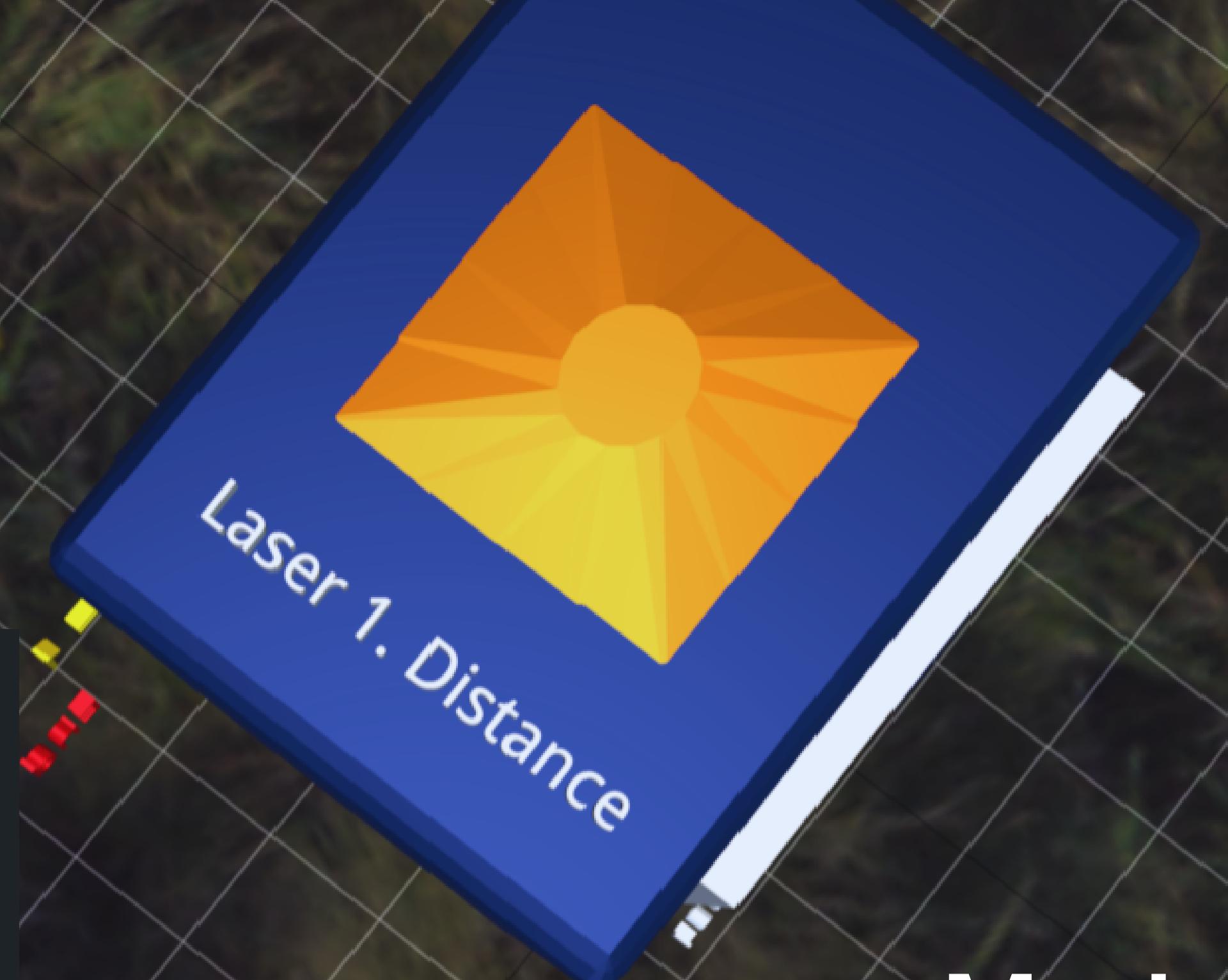
04

Long Press
Power Symbol
on the Start
Button (2s)



05

Measures a
certain
distance (mm)



Mode 1.

Mode 2.

Senso

Measures Object
Dimensions
(Height, Width,
Length) - (mm)



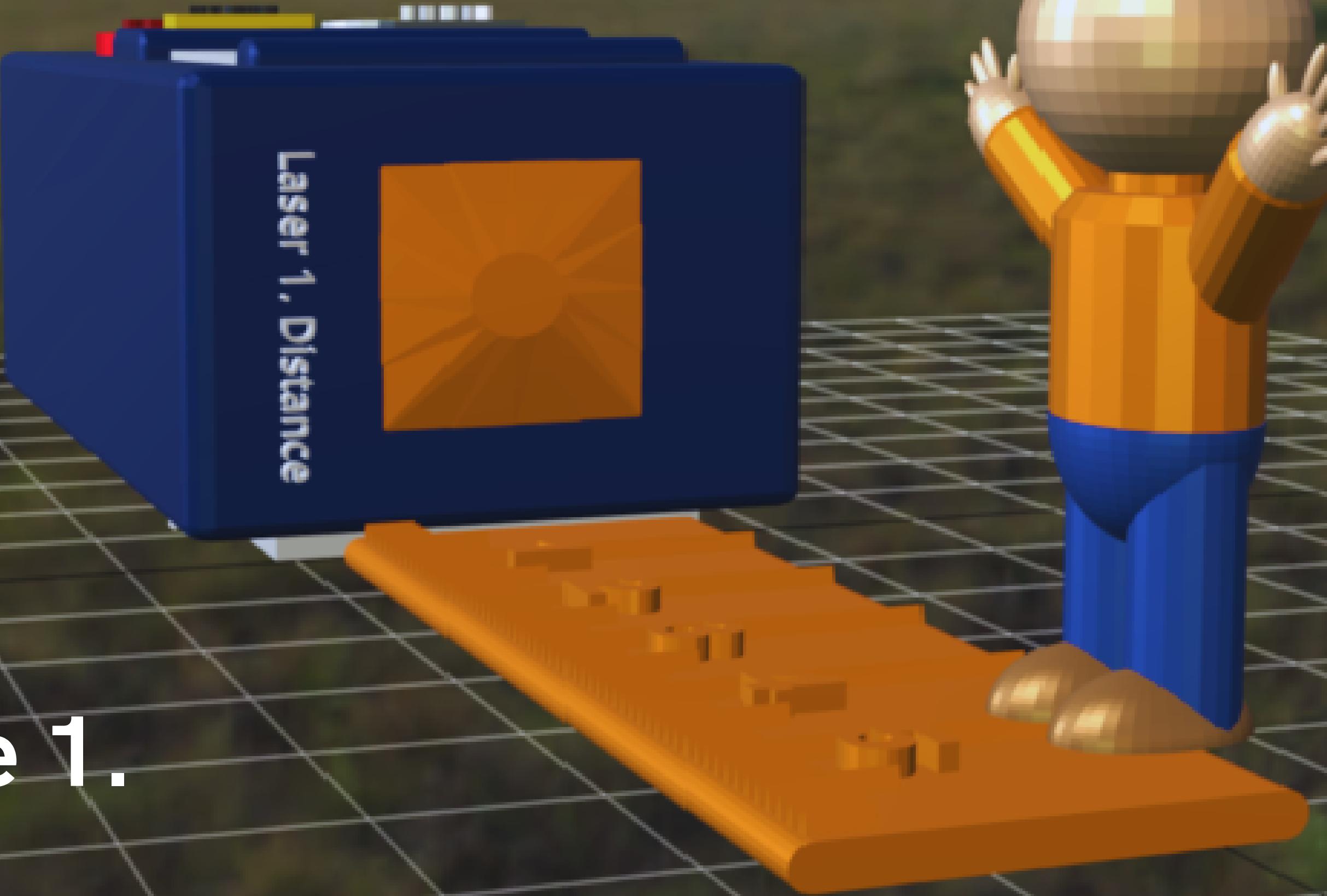
Laser 2. Measures Object



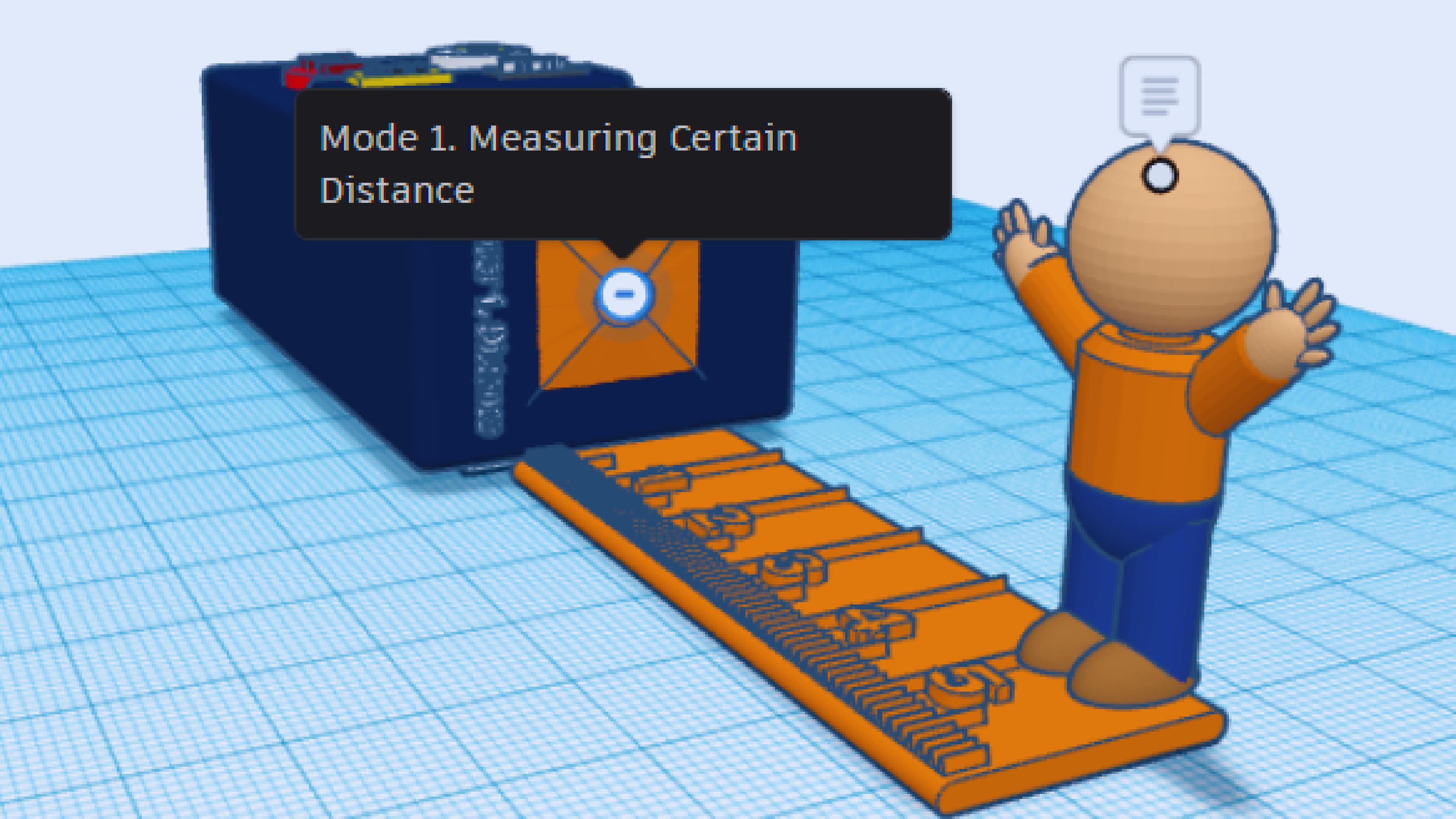
Taking Measurements Process of Mode 1 and Mode 2

06

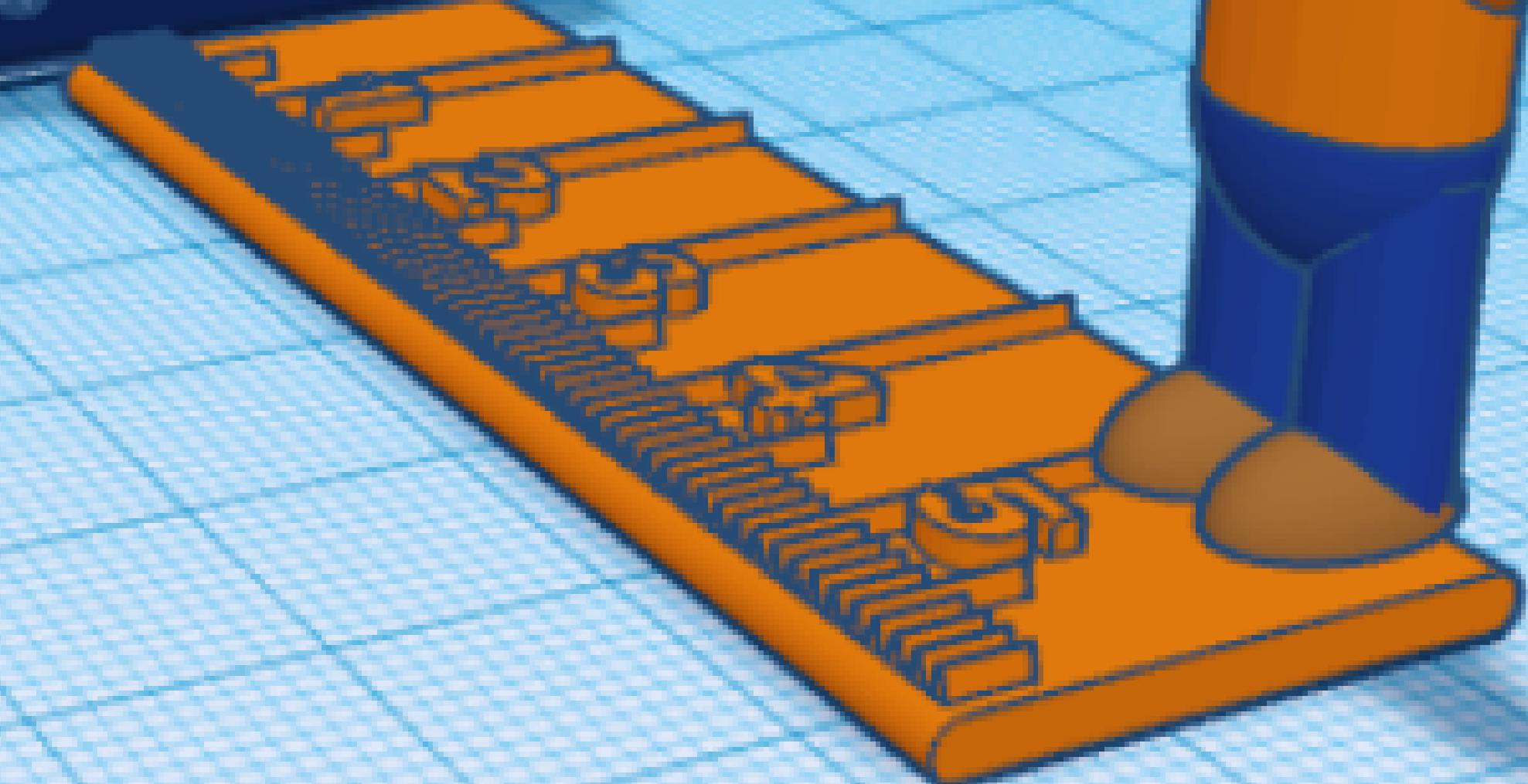
Mode 1.

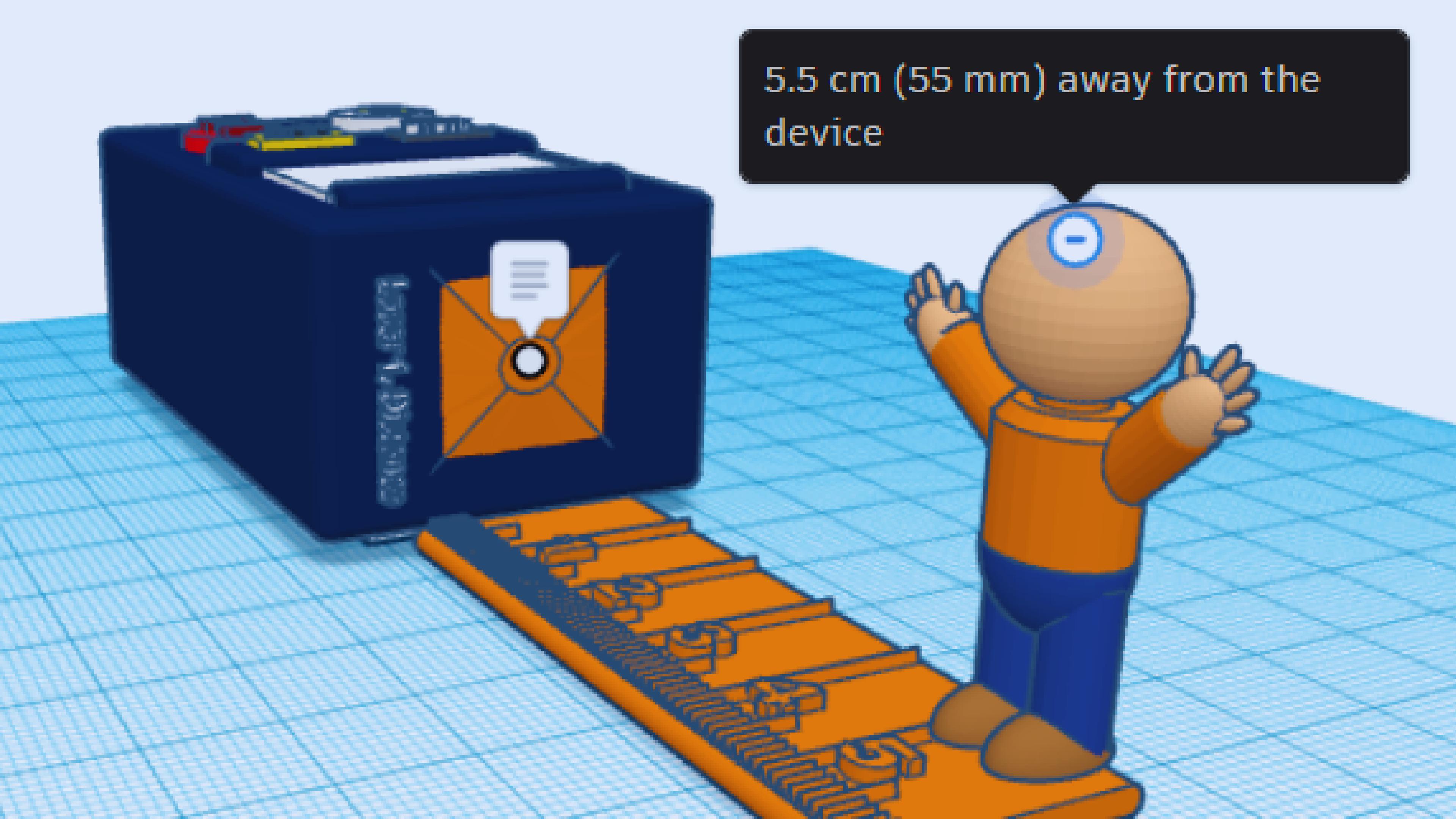


Ready to Measure

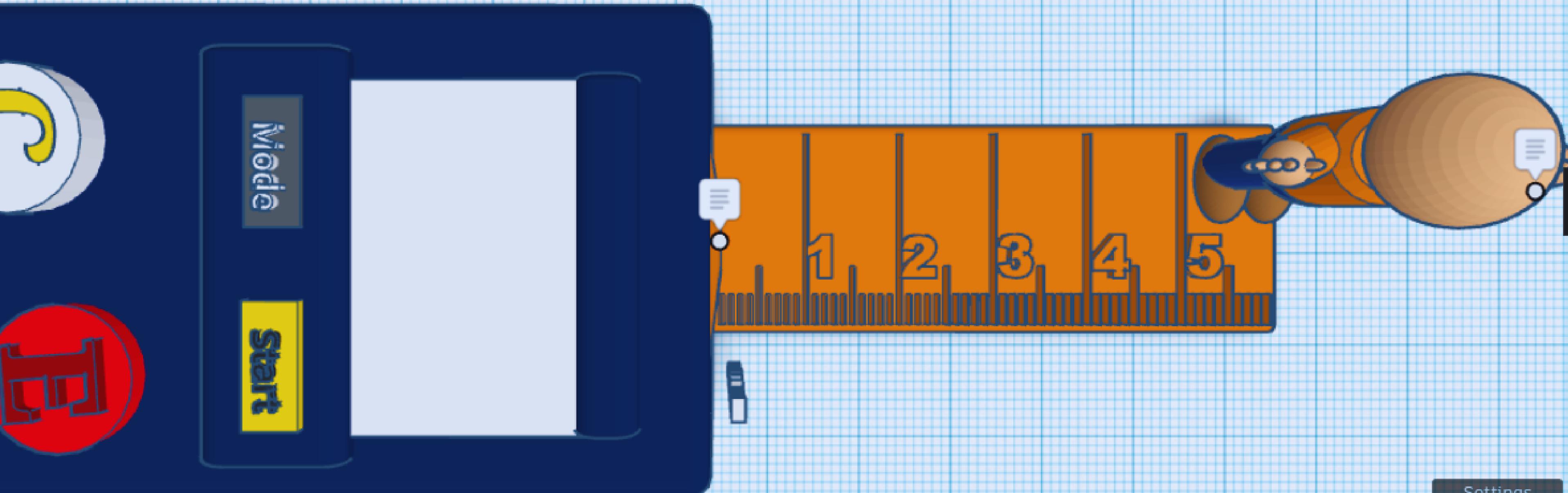


Mode 1. Measuring Certain Distance





5.5 cm (55 mm) away from the device

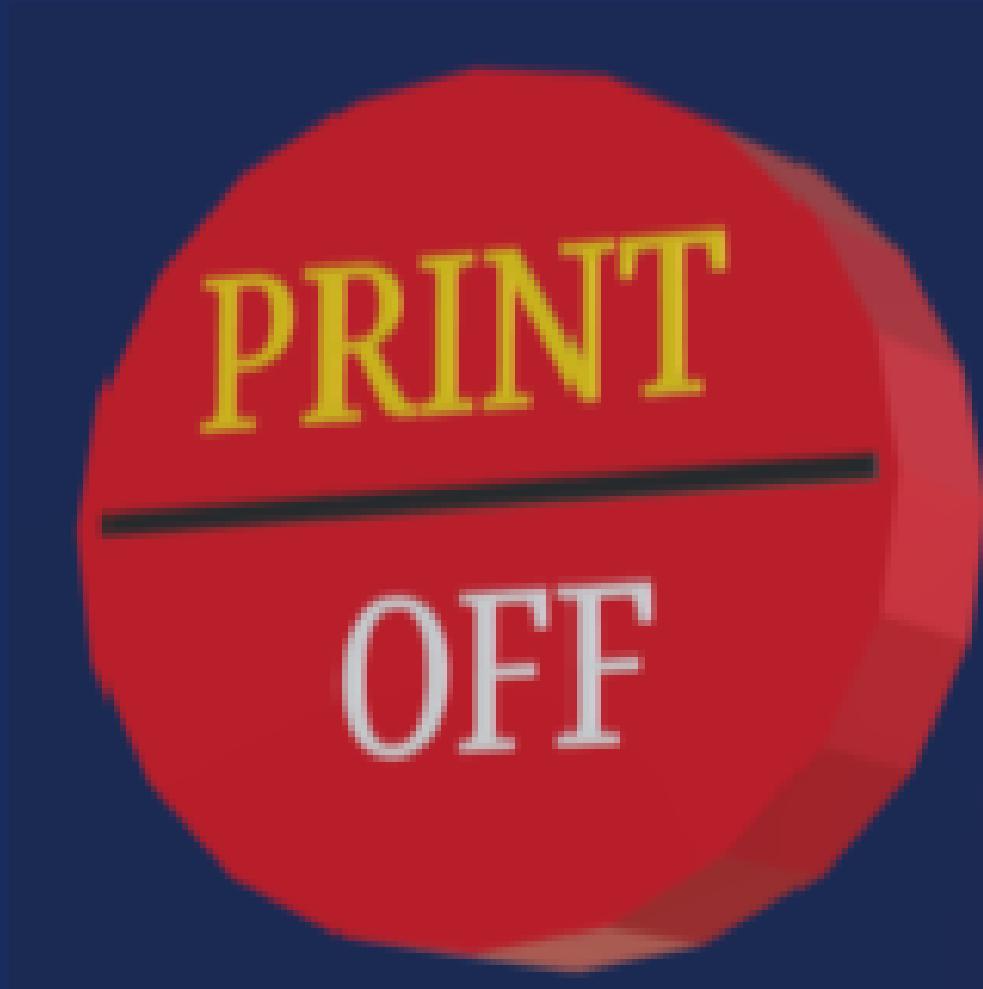


Settings

Snap Grid

1.0 mm

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Mode 1. Distance Measurements

Distance: 55 mm

Press the C Button to
Convert the current result

Mode 2.



Shortest



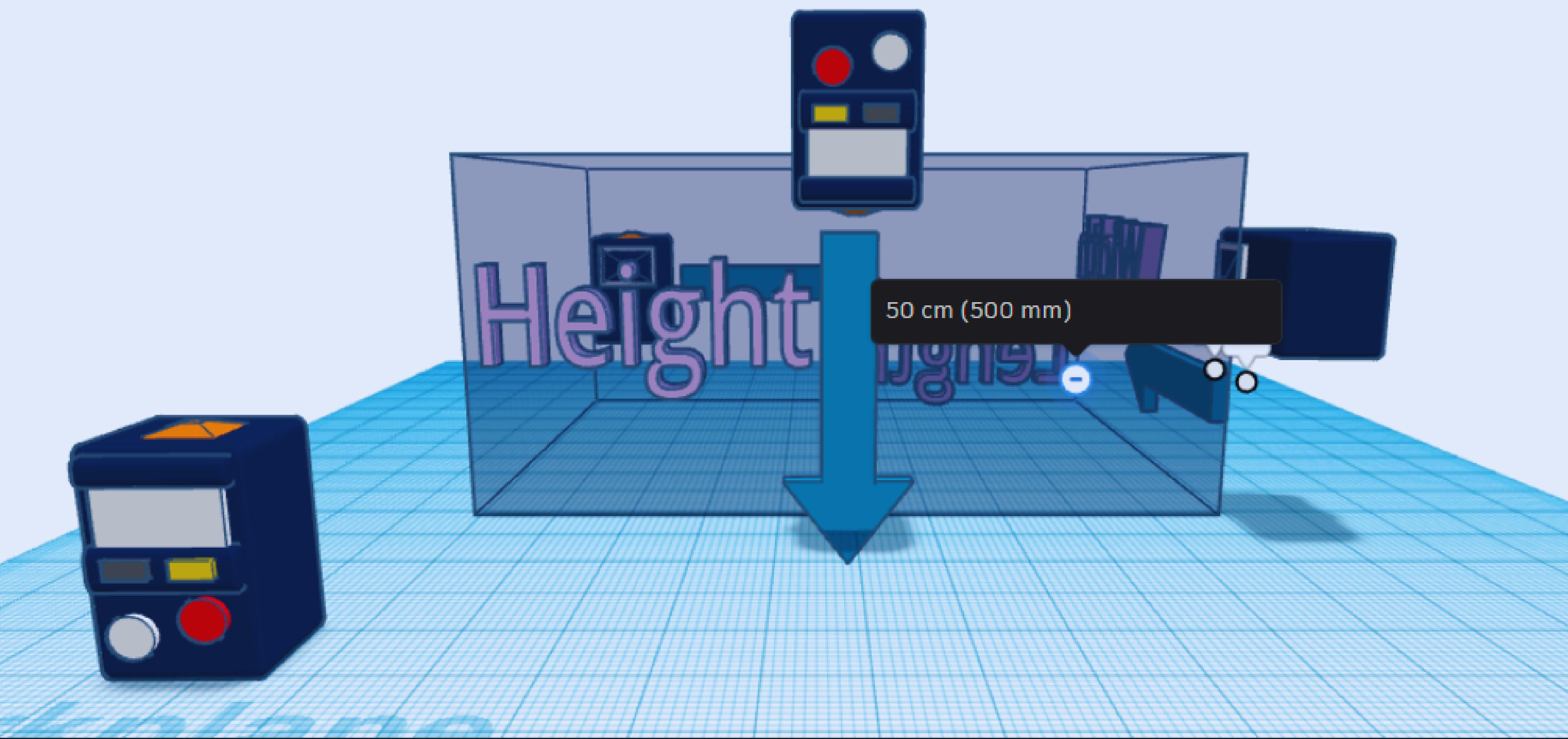
Middle



Longest

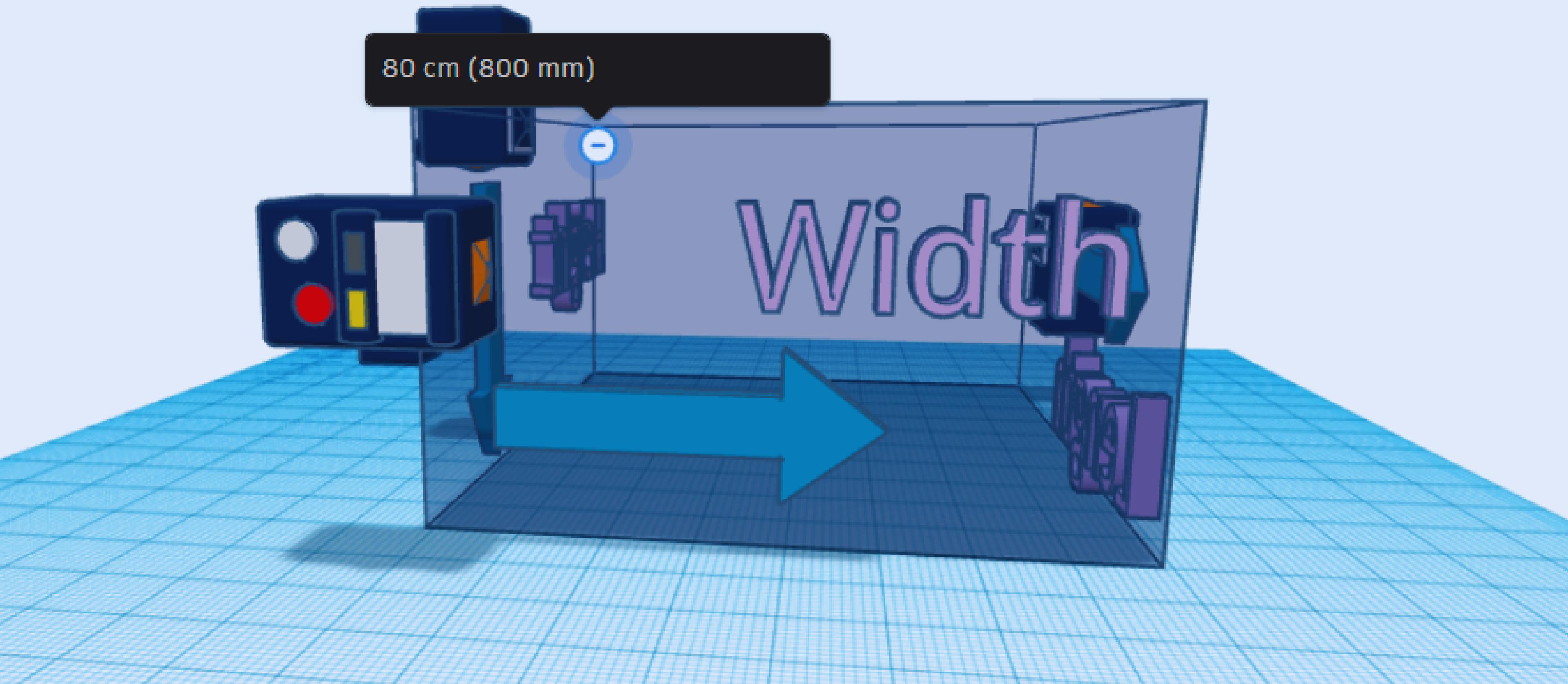


Ready to Measure



80 cm (800 mm)

Width



Length

100 cm (1000 mm)



height





Mode 2. Dimensions Measurements

Height: 500 mm

Width: 800 mm

Length: 1000 mm

Press the C Button to
Convert the current result

Converting Current Results to other Conversion Length Results

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Conversions Measures Present in the Device

Millimeter (mm) - Default	Centimeter (cm)	Meter (m)
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Ex. Distance = 500 mm

Current Result (mm)	Converted Result (cm)	Converted Result (m)
500 mm	50 cm	0.5 m

Current Result

Mode 1.



Mode 1. Distance
Measurements

Distance: 55 mm

Press the C Button to
Convert the current result

Converted to Centimeter

Mode 1. Distance Measurements

Distance: 5.5 cm

Press the C Button to Convert the current result

Converted to Meter

Mode 1. Distance Measurements

Distance: 0.055 m

Press the C Button to Convert the current result

Current Result

Mode 2.



Mode 2. Dimensions Measurements

Height: 500 mm

Width: 800 mm

Length: 1000 mm

Press the C Button to
Convert the current result

Converted to Centimeter

Mode 2. Dimensions Measurements

Height: 50 cm

Width: 80 cm

Length: 100 cm

Press the C Button to
Convert the current result

Converted to Meter

Mode 2. Dimensions Measurements

Height: 0.5 m

Width: 0.8 m

Length: 1 m

Press the C Button to
Convert the current result

How to turn off the device Senso?

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**Long Press the
Start Button (2s)
- do this while
device is on**



To Repeat Process

To Power Off

**Long Press the
OFF Button (2s)**
- do this while
device is on



Device Source Code Process

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Q/A





THANK YOU