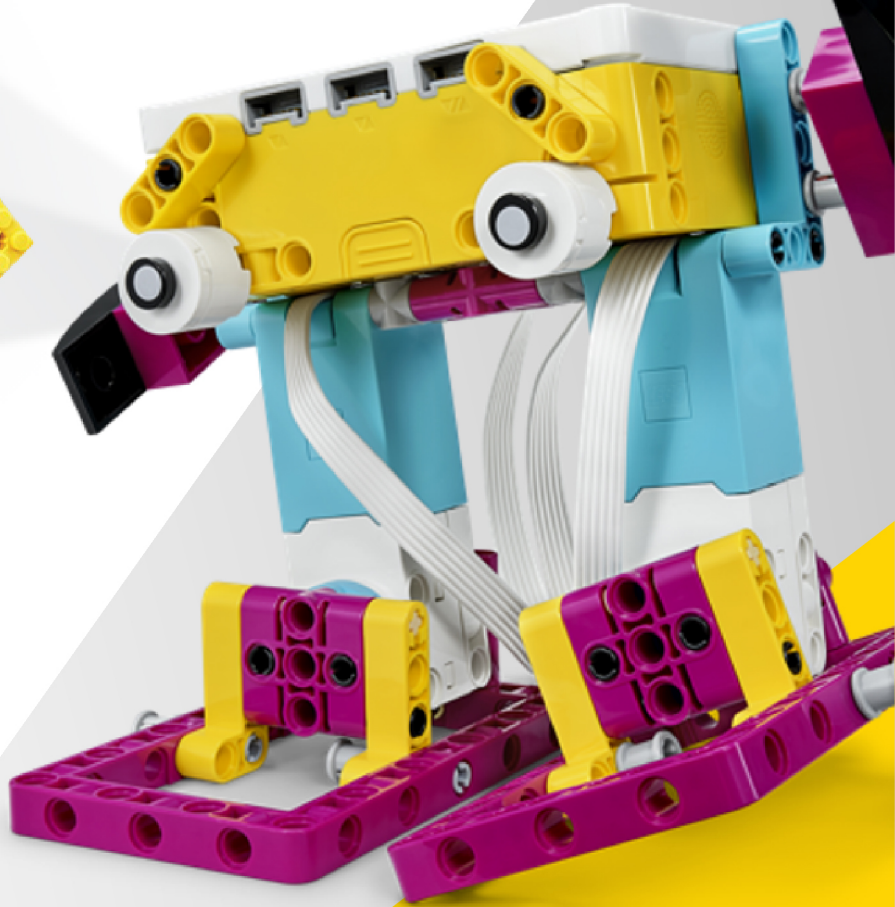


# SPIKE™ Prime

7

## Projects



# 21

## LESSON PLANS

### Student Book



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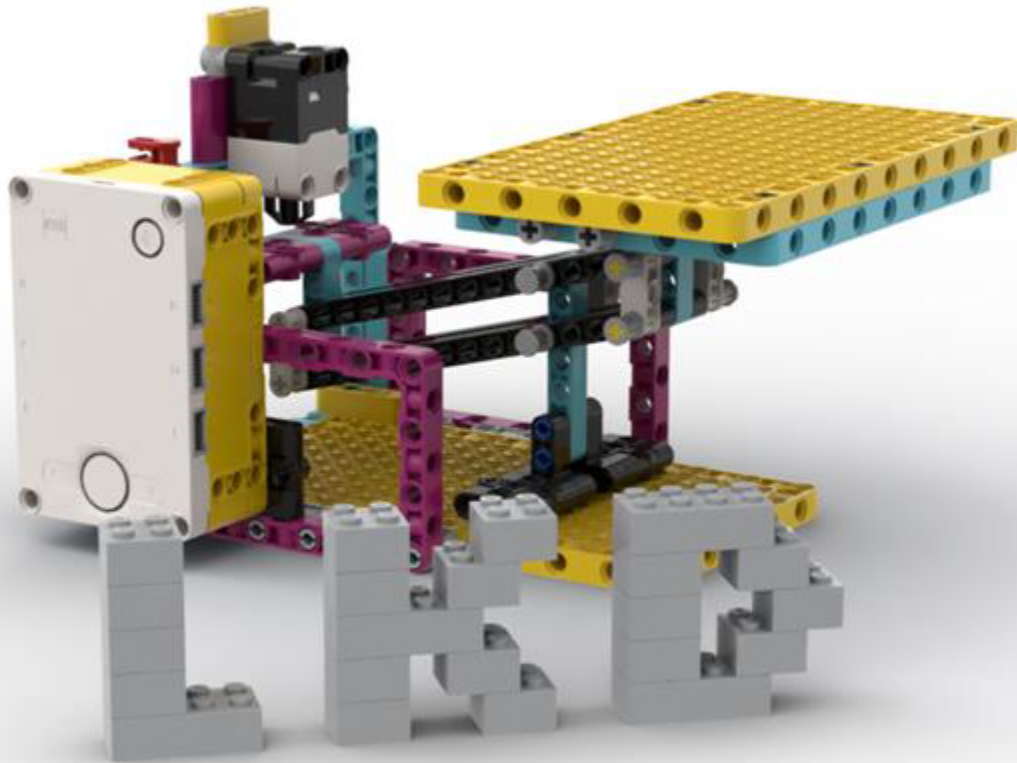
Units	Unit Title	Courses Name
Unit 1	Getting Started + Going the Distance	LEGO APP
Unit 2	Guitar Tunes	LKD PROJECT
Unit 3	Weight Scale	LKD PROJECT
Unit 4	Place Your Order	LEGO APP
Unit 5	Out of Order	LEGO APP
Unit 6	Smart Compass	LKD PROJECT
Unit 7	Track Your Packages	LEGO APP
Unit 8	Keep it Safe	LEGO APP
Unit 9	Keep it Really Safe	LEGO APP
Unit 10	Spin the Wheel	LKD PROJECT
Unit 11	SPIKE Sandclock	LKD PROJECT
Unit 12	Automate It	LEGO APP
Unit 13	This is Uphill	LEGO APP
Unit 14	Time for Squat Jumps	LEGO APP
Unit 15	Assembling an Advanced Driving Base (open project)	LEGO APP
Unit 16	My Code, Our Program (open project)	LEGO APP
Unit 17	<b>SPIKE / Python (4 Lessons)</b>	<b>LKD PROJECTS</b>
Lessons 1	SPIKE Prime / Python Introduction	LKD
Lessons 2	Shadow Printer	LKD PROJECT
Lessons 3	Mole Whacker	LKD PROJECT
Lessons 4	Rock-Paper-Scissors	LKD PROJECT

# Weight Scale

Student Book - SPIKE Prime Project

**Can you create a device to measure the weight and mass of different objects?**

A weighing scale traditionally consisting of two plates or bowls suspended at equal distances from a fulcrum is used to measure weight or mass.

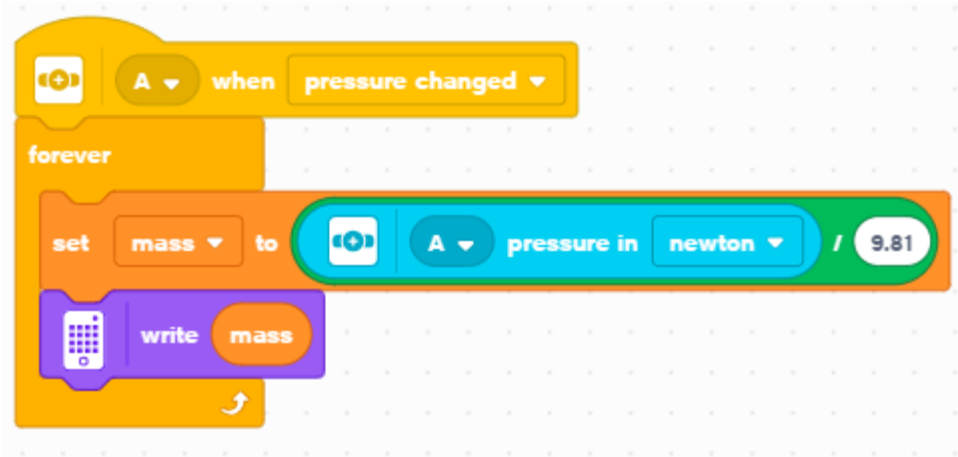


*Watch the video to see what your bot is about to do.*

**Build your Weight Scale.**

This weight scale measures mass in kilograms or grams.

Let's try this code first.



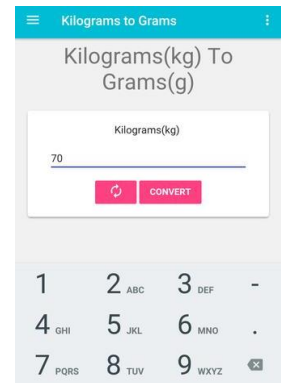
This program converts the force measured by the force sensor into mass based on this formula:

$$\text{Force} = \text{Mass} * \text{Acceleration of Gravity (g)}$$

Now display mass in grams.

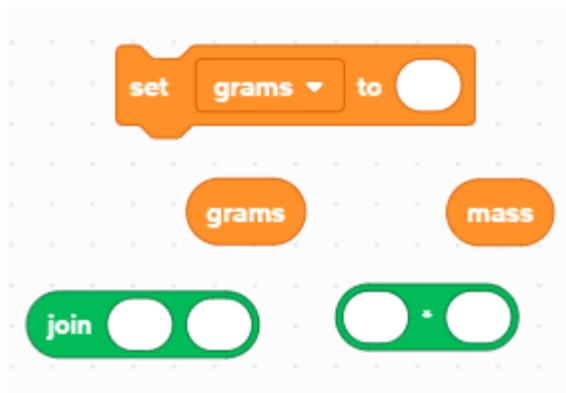
Convert the mass from kilograms to grams.

1 kilogram (kg) is equal to 1000 grams (g).



What is the heaviest mass calculated by the scale?

(HINTS)

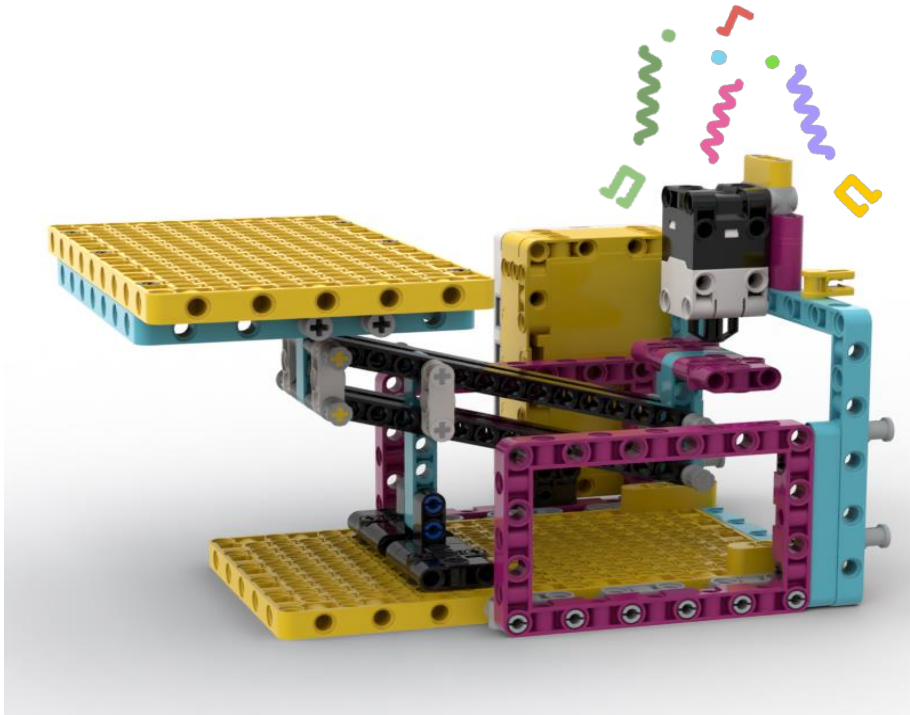


Think about using these code blocks.

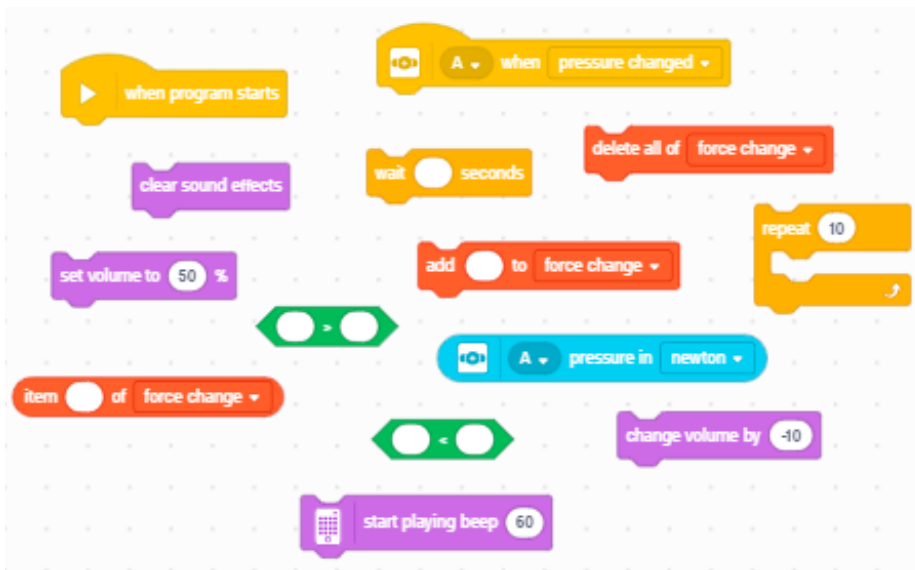
## EXTRA CHALLENGE

### Noisy Scale

Have your scale play a beep noise when pressure changes on force sensor. Increase the volume as the weight measured increases and decrease the volume if weight measured decreases.



### (HINTS)



Think about using these code blocks.

**How did you do?**



What did you do well? Is there anything you could've done better?

**You did it!**