

# LEGO® EDUCATION SPIKE™ PRIME VIRTUAL SUMMER CAMP BETA



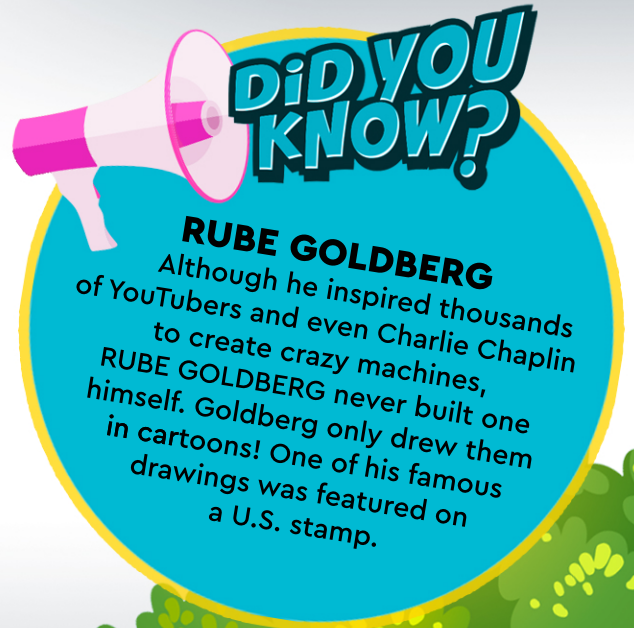
**LOGISTICS MANAGERS** make sure everything runs smoothly in a company. Just like you had to line up all the pieces for your chain reaction to work, they line up all the steps that need to happen for a product to be built in the factory and get to a customer.

## CHALLENGE 4: PHYSICS – Make a chain reaction

Ever set up dominoes in a line, tipped the first one, and watched them all fall down? Or seen a Rube Goldberg machine that goes through tons of ridiculous motions just to turn the page of a book or water a plant? Creating a chain reaction is a fun way to accomplish a task in a unique way.

Challenge yourself to create a chain reaction that starts with a simple push. Then think about 4 or 5 ways you can keep the reaction going. Use a sensor and motors to move things along. Plan out your big finale. Will your machine push a ball into a cup? Flip a brick into the bullseye of a target? Turn something on or off? Brainstorm, sketch your ideas, and start building.

Remember if something doesn't work at first, keep at it. It will probably require some tweaking since you have many moving parts that are dependent on one another. When it's all up and running, give your new machine a name. Build, test, and iterate on your model design. Don't be afraid try something new. If it doesn't work or make total sense at first, that's ok. You can try a different approach.

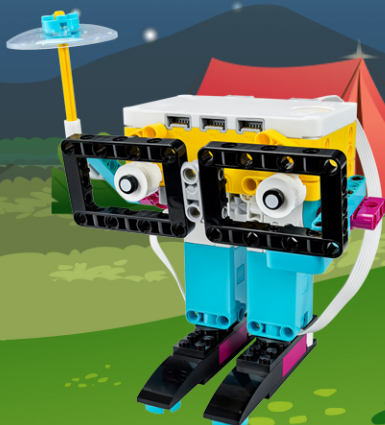


### **RUBE GOLDBERG**

Although he inspired thousands of YouTubers and even Charlie Chaplin to create crazy machines, RUBE GOLDBERG never built one himself. Goldberg only drew them in cartoons! One of his famous drawings was featured on a U.S. stamp.

**CHECK OUT MASTER TIPS!**

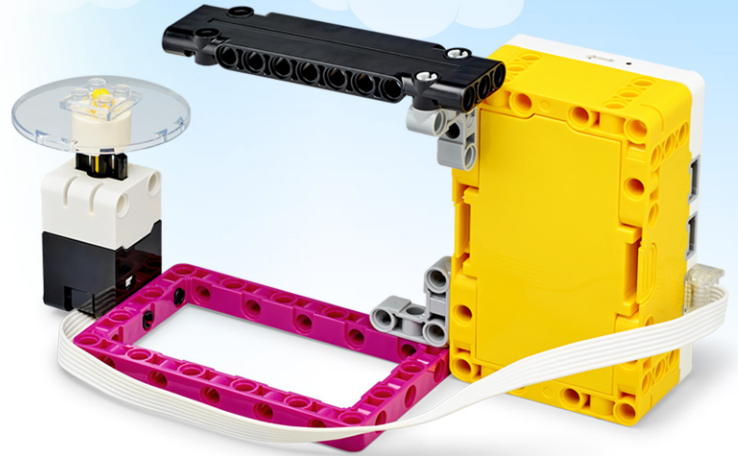
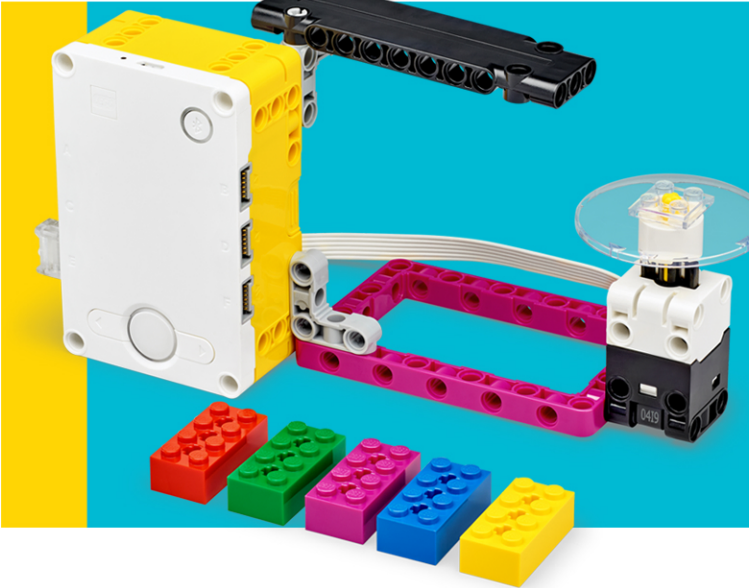
If you feel stuck, get inspired by these fun ideas from our Master Builders. You can play around with these bits of code, add them to your creation, and end up with something totally unexpected!



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**Inspiration 1: DIVING BRICK**

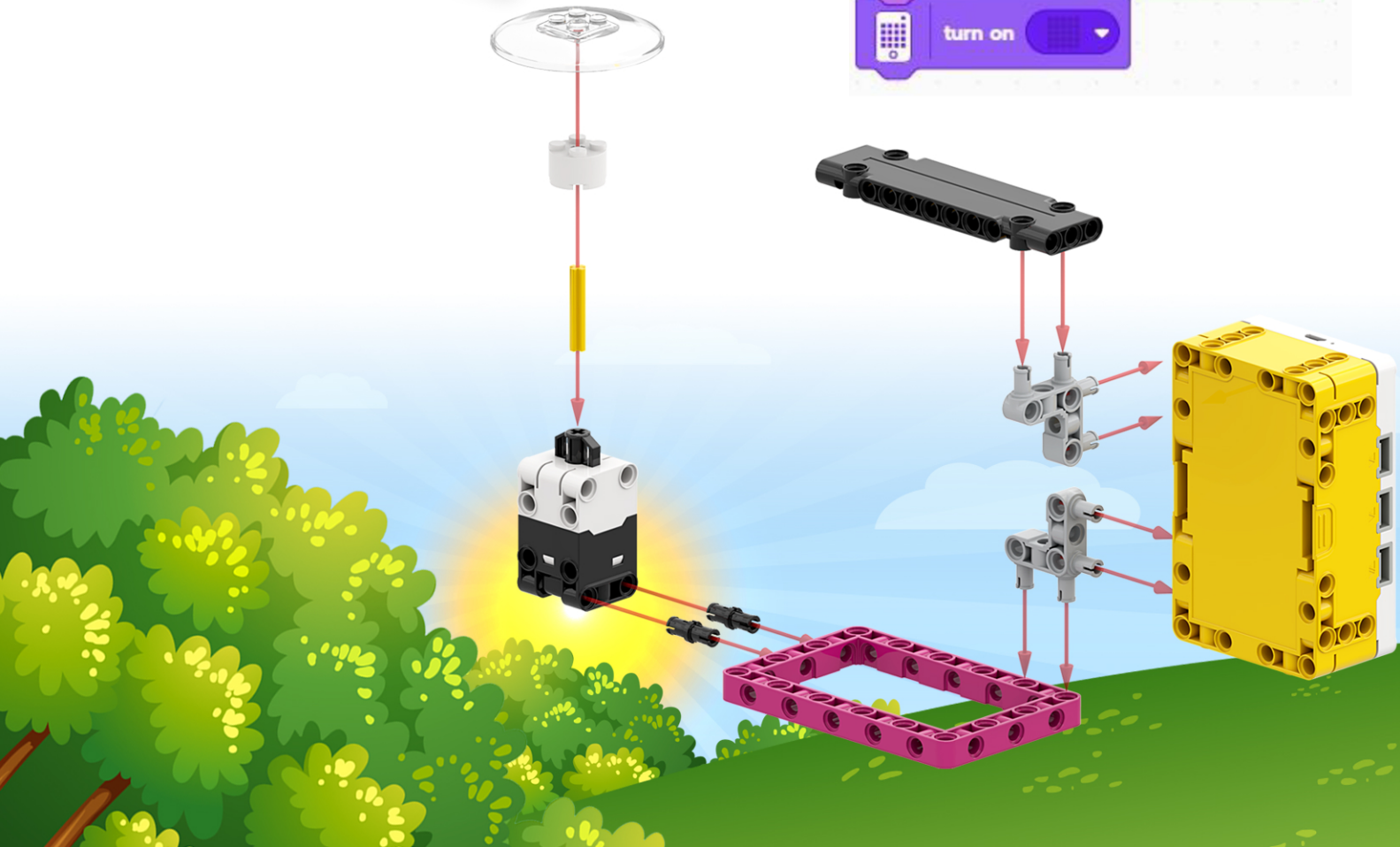
- Create a domino effect with bricks.
- Add more bricks and change the win sound/light.



**Code Sample 1**  
**Beginner Inspiration: DIVING BRICK**

```

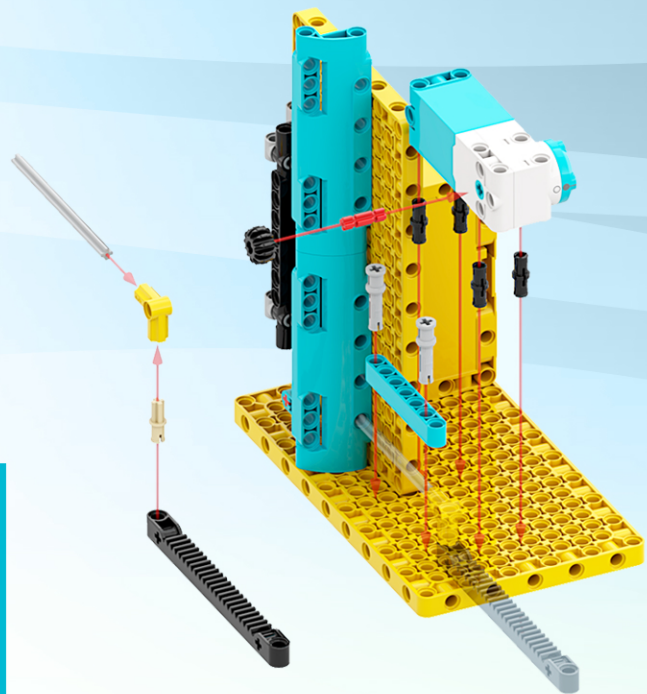
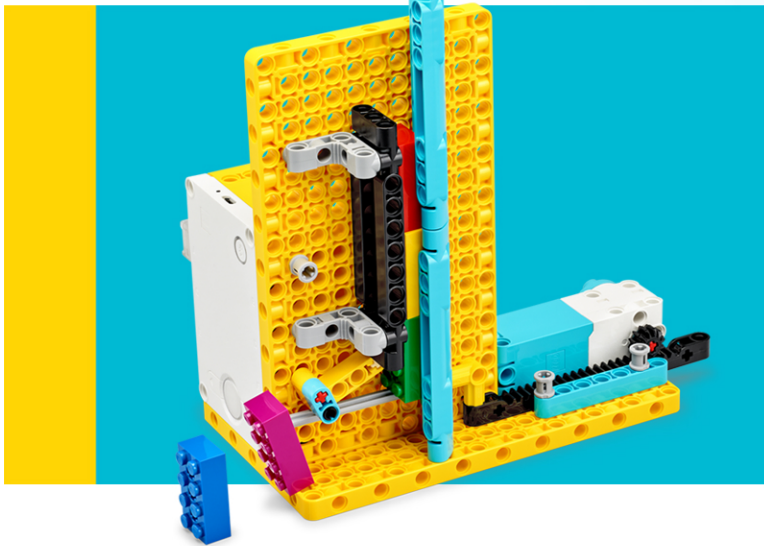
    E when pressure changed
    turn on [LED]
    play beep 96 for 0.4 seconds
    play beep 91 for 0.3 seconds
    turn on [LED]
  
```



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Inspiration 2: **BRICK BY BRICK**

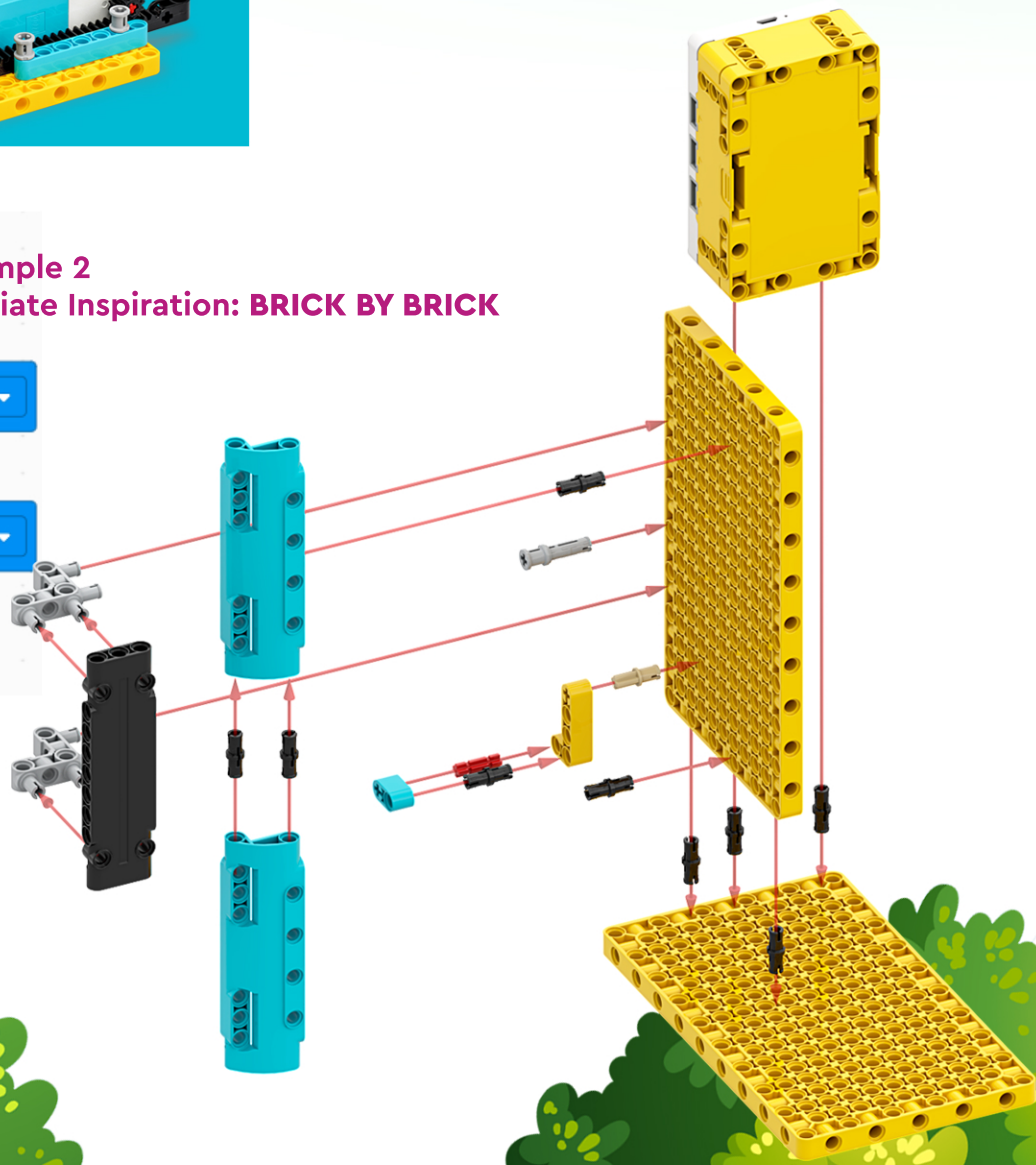
- A simple brick cartridge with a horizontal pusher.
- Make it taller, add sounds, etc.



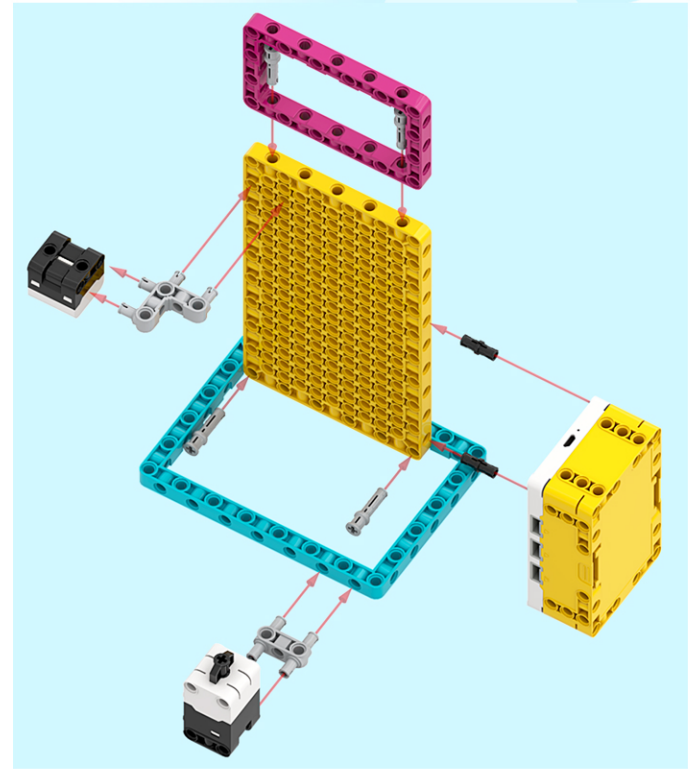
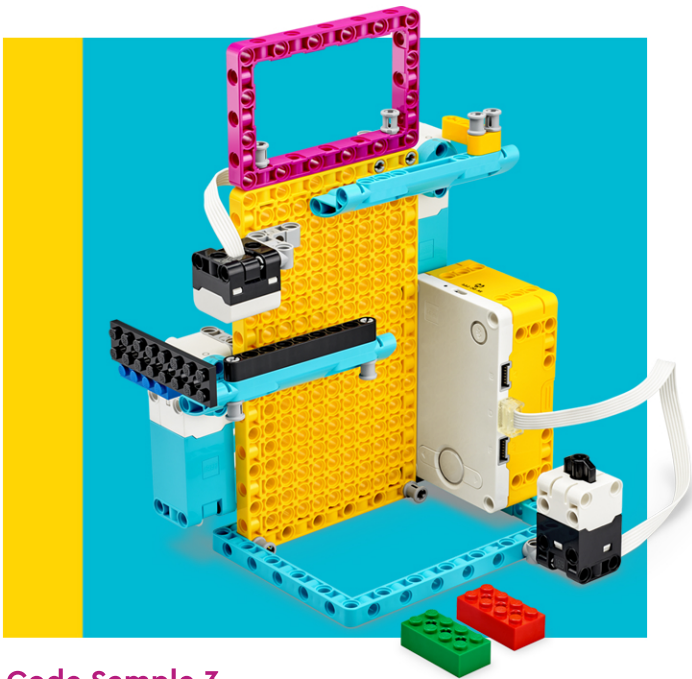
```

when program starts
repeat 5
  A run for 1.6 rotations
  A stop motor
  A run for 1.6 rotations
wait 1 seconds
  
```

Code Sample 2  
Intermediate Inspiration: **BRICK BY BRICK**



- Create multiple trigger points in the chain.
- This setup can redirect 2 different colored bricks.



### Code Sample 3 Advanced Inspiration: MAKE IT YOUR OWN

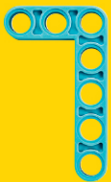
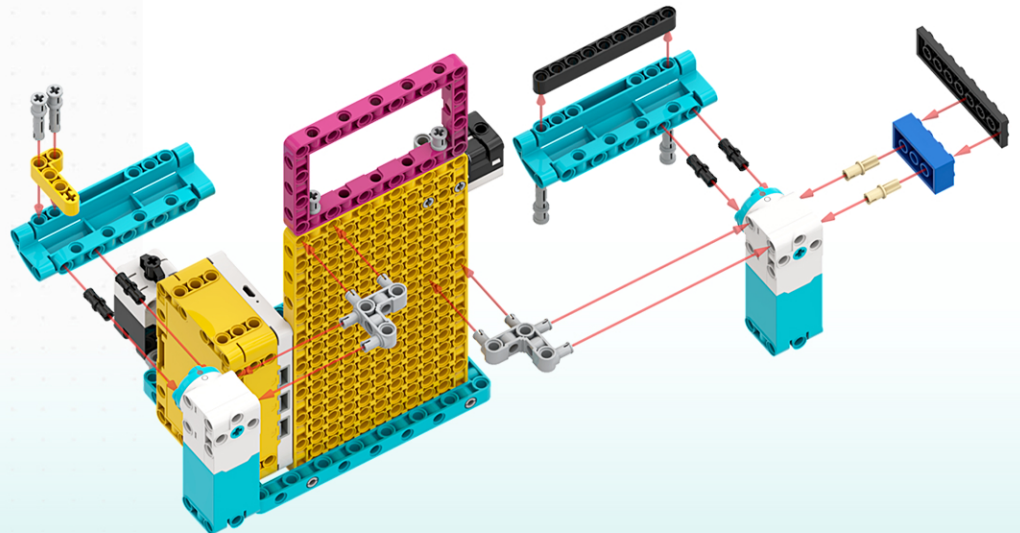
```

when program starts
  C go shortest path to position 0
  E go shortest path to position 24
  start calibration

when pressed
  D when pressed
  E run for 55 degrees

when color is red
  A when color is red
  C run for 55 degrees

when color is green
  A when color is green
  E go shortest path to position 24
  C run for 35 degrees
  
```



We can't wait to see your awesome solution to this week's project! Ask a grown-up to share your build, tag LEGO® Education on Twitter (@LEGO\_Education) or Instagram (@LEGOeducation) with the hashtag #LEGOeduSPIKEprime for a chance to be featured as Build of the Week!