

# LEGO® EDUCATION SPIKE™ PRIME

## VIRTUAL SUMMER CAMP BETA



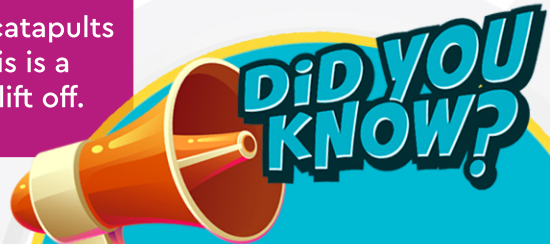
**CATAPULT OFFICERS** manage the steam-powered catapults that launch fighter planes off of aircraft carriers. This is a very tricky job! Too little force and the plane can't lift off. Too much force and the plane could be torn apart.

## CHALLENGE 6: HISTORICAL MECHANISMS

### CRAZY CONTRAPTIONS

If you ever need to launch a piece of paper across the room (and who doesn't?), you might take inspiration from the ancient Greeks. They invented a catapult with an arm that is released to hurl stuff really far. Challenge yourself to create a similar device to hit a target. The ancient Greeks launched 300-pound rocks, but you'd be better off with soft, light projectiles such as marshmallows, cotton, or paper. Think about what your catapult will need in order to hold your soft projectile and then release it through the air. Be sure to also consider how to keep yourself and your friends safe when using it.

Give your crazy contraption a name. You might want to give your contraption a theme or design. Brainstorm and sketch your ideas. 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. Launch your catapult several times and mark where your projectiles land. Challenge yourself to go as far as you can!



### Pumpkin Chunkin

is a sport in which pumpkins are hurled as far as possible by all sorts of devices. The current world record distance is 5,545 feet, or about 18 football fields.



Once you get your sound the way you like it, you can sync up lights to go with it. Don't be afraid to try different variations of your instrument and see how your sounds change over time. Brainstorm and test new ideas, iterate your model design. And finally, what is your new instrument called? How would you teach someone else to play it?

### CHECK OUT MASTER TIPS!



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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!

**Inspiration 1: BIG KICK**

- A simple paper ball kicker.
- Try increasing the arm length, modify the program.

**Code Sample 1**  
**Beginner Inspiration: BIG KICK**



To load your catapult, use a paper ball or something soft. Make sure the landing area is clear.

```

when left Button pressed
  B set speed to 100 %
  B go shortest path to position 0
  wait 2 seconds
  B run for 180 degrees
  B run for 270 degrees
  
```

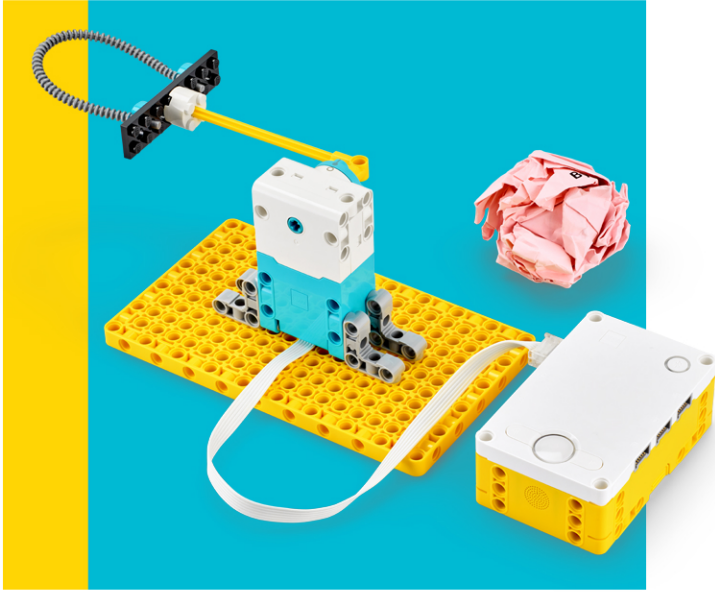


We can't wait to see your awesome solution to this week's project! Ask a grown-up to share your build, tag LEGO® Education on Twitter (@LEGO\_Education) or Instagram (@LEGOeducation) with the hashtag #LEGOeduSPIKEprime for a chance to be featured as Build of the Week!

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## Inspiration 2: PAPER PULT

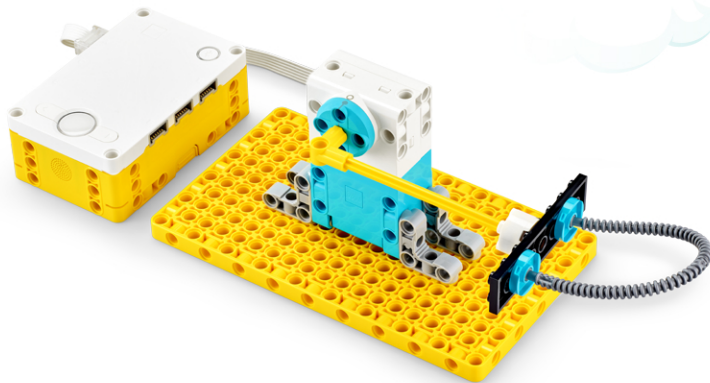
- Create the beginning of your paper catapult
- Improve the design and modify the program.



## Code Sample 2 Intermediate Inspiration: PAPER PULT

```
when right Button pressed
  A set speed to 100 %
  A go shortest path to position 0
  wait 1 seconds
  A run for 30 degrees

when left Button pressed
  A run for 100 degrees
```



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## Inspiration 3: **LAZY PULT**

- Try a new mechanism to throw farther.
- Improve the design and modify the program

### Code Sample 3 Advanced Inspiration: **MAKE IT YOURS**

```
when left Button pressed
  B set speed to 100 %
  B go shortest path to position 0

when right Button pressed
  B run for 130 degrees
```

Calilbration sequence

