



# RULES

Engineering isn't just about launching satellites, building bridges or designing computers. Engineering also helps create things like movies, sound effects and art.

**THE CHALLENGE:** Create a device that transfers stored energy to make sound!

## Performance



The total performance period, including setup, is six minutes maximum.



No preloading!  
Device must be set up in front of the judges.



A trigger is required to start device.



Device must make at least 5 different and distinct sounds. The sounds must be loud enough for judges to hear over Zoom.



Device must run for no longer than 90 seconds.

## Grade Success Levels

Grades	Minimum Operation Time Success Level 1	Minimum Operation Time Success Level 2
4-6	15 seconds	30 seconds
7-8	30 seconds	45 seconds
9-12	45 seconds	60 seconds

At least one sound needs to start after the minimum operation time and before 90 seconds elapses.

Electrical and electronic components are **not allowed**.



Want to "see" your sounds?



Check out the free ArduinoScience Journal app.

Don't forget to read the full rules at [thetech.org/thetechchallenge/rules](https://thetech.org/thetechchallenge/rules)



# 2022

## Tech Challenge Safety Guidelines

# DO

### Wear protection

Wear appropriate safety gear for the task such as ANSI-approved eye protection.

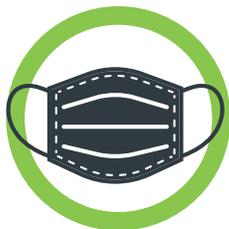


### Listen and be alert

Pay attention and follow the judges' directions.

### Have a Safety Officer

Identify one student to oversee safe design and implementation.



### Health and safety

Make sure you're being safe as you work on your project. Follow all public health guidelines for your area.

# STAY SAFE

# DON'T



No flammable liquids or gases



No pressurized gases > 5 psi



No animals



No horseplay



Don't ignore safety labels



No climbing

## Spirit of the Challenge

The Tech Challenge generally emphasizes the importance of developing engineering solutions that would be practical in real life, otherwise known as the Spirit of the Challenge. Engineering is not just about building structures, aircraft or rovers. Creative, expressive, entertaining things are real-world. Things that bring joy and delight have real-world value. For this challenge, engineering is used to design and build devices for entertainment.

Store-bought solutions are not in the Spirit of the Challenge. We want to see your team's creativity. Teams are encouraged to design and build devices using their own ideas. Use of existing plans for reference and inspiration is allowed. All plans, and the source of those plans, must be documented in the engineering journal.



## Engineering Journal

- Submit one journal as a PDF
- Handwritten or typed/must be legible
- Keep a detailed record of all your teams' activities

Don't forget to read the full rules at [thetech.org/thetechchallenge/rules](https://thetech.org/thetechchallenge/rules)