



# Cubelets Lesson Plan

**Amount of time Demo takes: 5 mins.**

**Try this in the classroom!**

## Lesson's Big Idea

- Modular design and creativity with perspective of efficiency.
- Allow kids to build basic robots without the need to program. It shows different kind of sensors.

## Materials

- Cubelets
- Batteries (rcr123a-3volt)
- Battery Charger
- **Needs electricity!**
- Visual Aid: Different cubelets

**SAFETY!** Safe Demo!

## Background Information

- One should know that every cubelets has a microcontroller in it.
- Engineering small systems to produce results. Use sensors to determine how certain outputs are affected.
- Small circuits that allow electricity to run through them and are variable based on certain sensors.

## Set-up Instructions

1. Layout cubelets (Cubelet types located on one of the cards in the box)
2. Possibly create example (See pictures in cards in box)

## Instructional Procedure

1. Layout the cubelets.
2. Explain what different cubelets do.
3. Let kids create different formations (provide demos as needed).

**DO NOT LET STUDENTS WALK OFF WITH CUBELETS!**

## Assessment Questions

1. What happens when you get your hand closer to the distance sensor?
2. What happens when you get your hand far from the distance sensor?
3. What happens when you cover the brightness of sensor?
4. What would happen if you did not have the gray cubelet hooked up?

## Careers & Real-World Applications

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## Clean Up

- Shut off all power cubelets
- Place cubelets in box

## References

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## Next Generation Science Standards

- K-5
  - 1-PS4 Waves and their Applications in Technologies for Information Transfer
  - 2-PS1 Matter and its Interactions
  - K-2-ETS1 Engineering Design
  - 3-PS2 Motion and Stability: Forces and Interactions
  - 4-PS3 Energy
  - 3-5-ETS1 Engineering Design
- 6-8
  - MS-PS4 Waves and Their Applications in Technologies for Information Transfer
  - MS-ETS1 Engineering Design
- 9-12
  - HS-PS3 Energy
  - HS-PS4 Waves and Their Applications in Technologies for Information Transfer