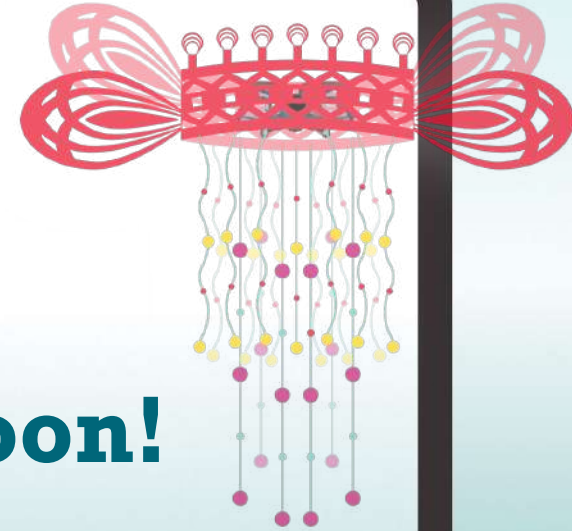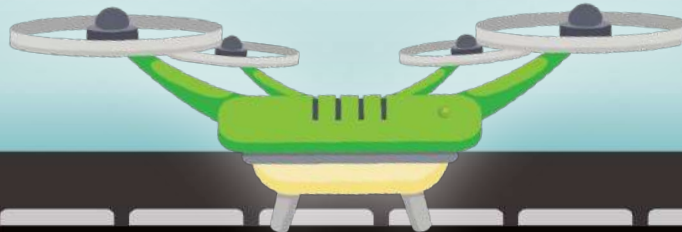PCS **eDventures!**™
Experts in Hands-On **STEM** Education

Webinar Starting Soon!

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STEAM-Powered Drones

Engineering, Art & Science in Action

- **30+ years** of inspiring innovation in education

- Located in Boise, Idaho

- **7000+ sites worldwide**

- Empowering educators bring interactive, play-based STEAM to students

- STEAM curriculum kits, enrichment camps and full-year STEAM solutions

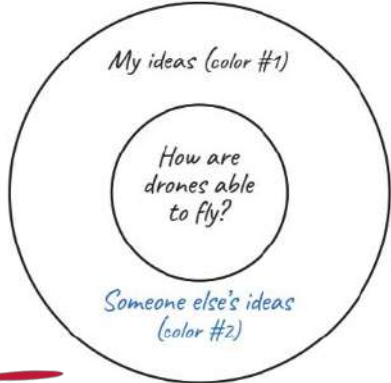# Some of our Partnerships

Presenter: Jan Zatloukal

- Instructional Designer at PCS Edventures

- 8+ years as an educator with experience from elementary through high school as well as leading professional development with teachers

- FAA Part 107 commercial drone pilot certification

Webinar Agenda

- Why use Drones for STEAM?

- 3 PCS Edventures drone programs

- Drone Skills Overview - Parts & Controls

- Drone Trivia Game!

- Wrap-Up and Questions

- **Giveaway!!!**

13   How Are Drones Able to Fly?

My ideas (color #1)

How are drones able to fly?

Someone else's ideas (color #2)

What excites you most about using drones in education?

- Hands-on learning for real-world application

- Encourages critical thinking, creativity and problem-solving

- Career pathways in STEM fields

- Learn about drone parts and flight controls.

- Use drones to introduce engineering concepts.

- Learn about the science behind drone flight.

- Simple flight challenges for beginners.

- Blend art & coding.

- Use block-based and Python coding for creative flight paths.

- Choreograph light shows & aerial patterns.

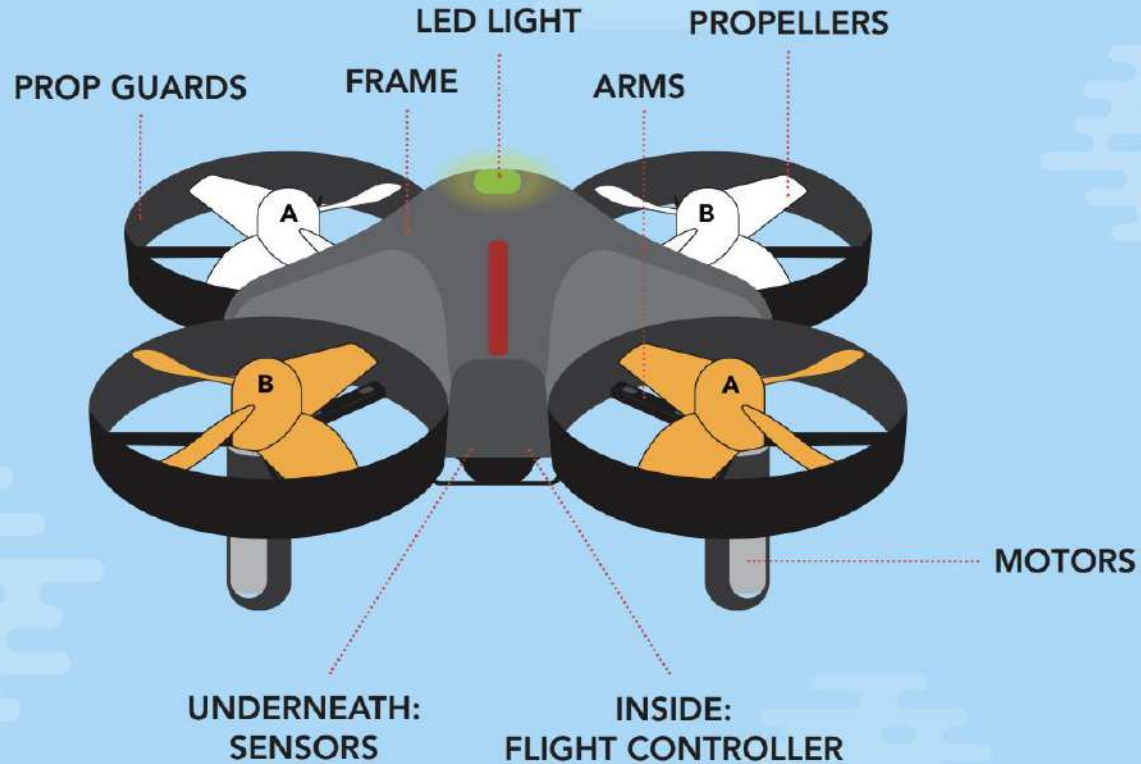- Create costumed drones to enhance storytelling & digital media projects.
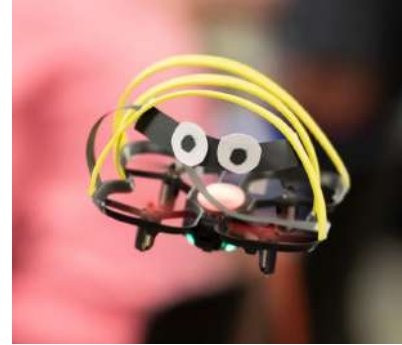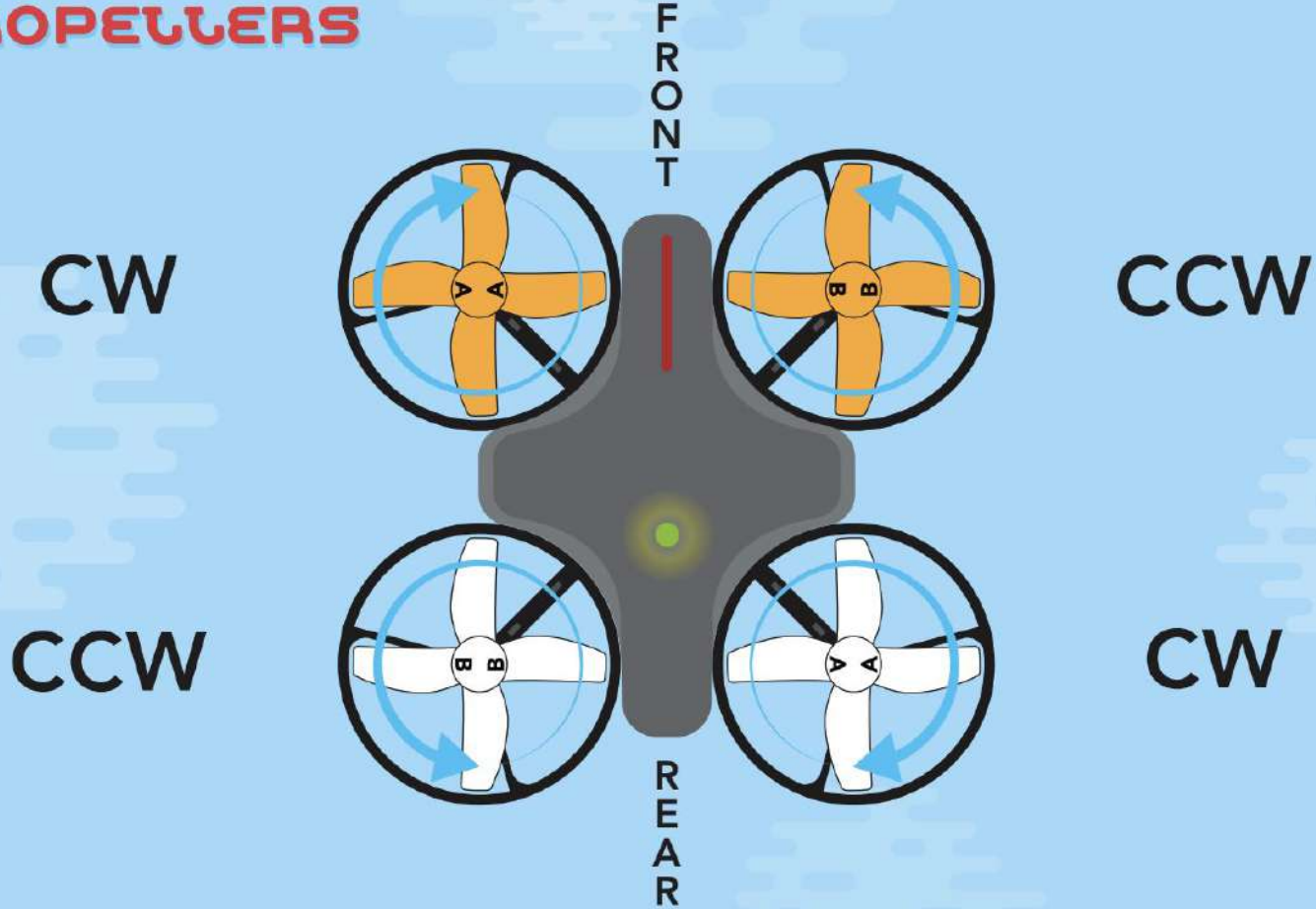
Discover Drones

- Flight physics, problem-solving, teamwork, safety & career exploration.

- Learn to fly on FPV Freerider flight simulator.

- Build, configure and then learn to pilot the RubiQ drone.

PARTS OF A DRONE

LED LIGHT

PROPELLERS
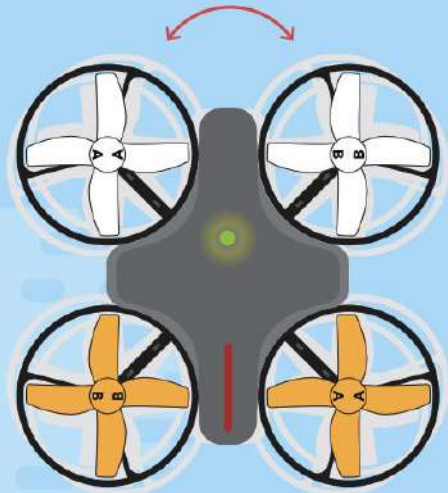
PROP GUARDS

FRAME

ARMS

A

B

B

A

MOTORS

UNDERNEATH:
SENSORS

INSIDE:
FLIGHT CONTROLLER

Ready, Set, Drone!

PROPELLERS

FRONT

CW

CCW

CCW

CW

REAR

Ready, Set, Drone!

DRONE CONTROLS

THROTTLE

PITCH

YAW

ROLL

Ready, Set, Drone!

RADIO CONTROLS

THROTTLE
UP

YAW
LEFT

YAW
RIGHT

THROTTLE
DOWN

PITCH
FORWARD

ROLL
LEFT

ROLL
RIGHT

PITCH
BACKWARD

F

L

R

B

Ready, Set, Drone!
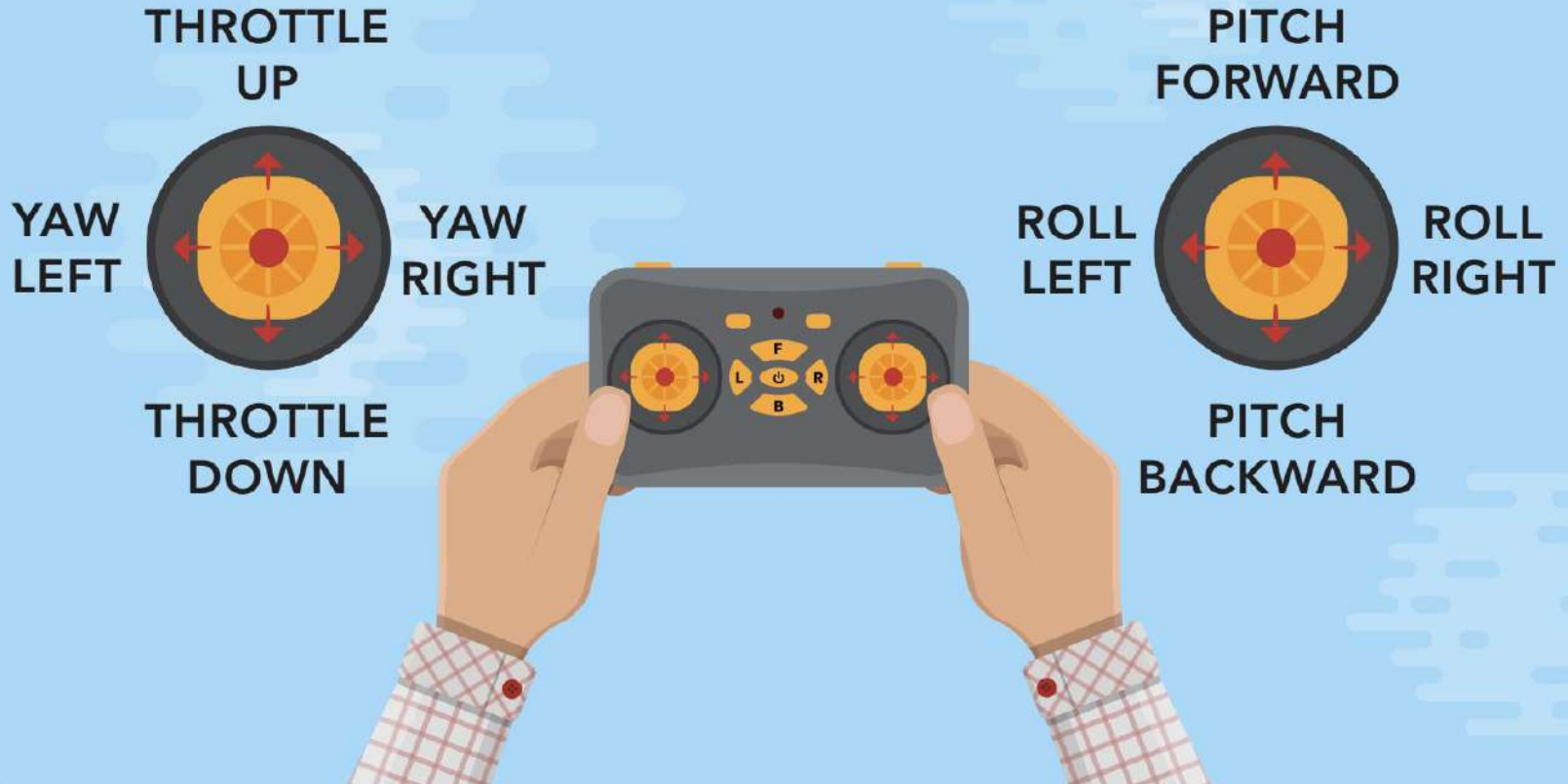
Rules:

- Each question has one correct answer.

- **Type your answer in the chat.**

- The first correct answer wins points!

- Our chat moderator will help me track correct answers.

- Every trivia participant will be entered in the giveaway drawing so just have fun!

What are the four main drone controls?

A) Throttle, Pitch, Yaw, Roll

B) Speed, Direction, Lift, Turn

C) Motor, Propeller, Frame, Sensors

D) Forward, Backward, Left, Right

00:15

What are the four main drone controls?

A)   Throttle, Pitch, Yaw, Roll   ✅

B)   Speed, Direction, Lift, Turn

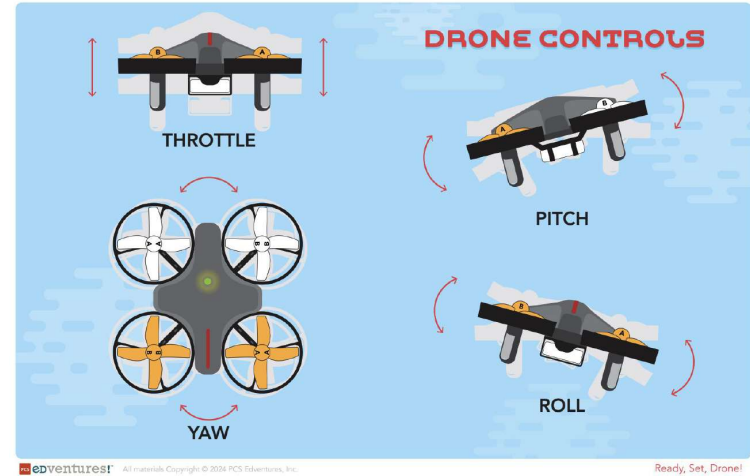C)   Motor, Propeller, Frame, Sensors

D)   Forward, Backward, Left, Right

DRONE CONTROLS

THROTTLE

YAW

PITCH

ROLL

Ready, Set, Drone!

Question 2

What part of a drone protects the propellers?

A) Motors

B) Frame

C) Prop Guards

D) Flight Controller

00:15

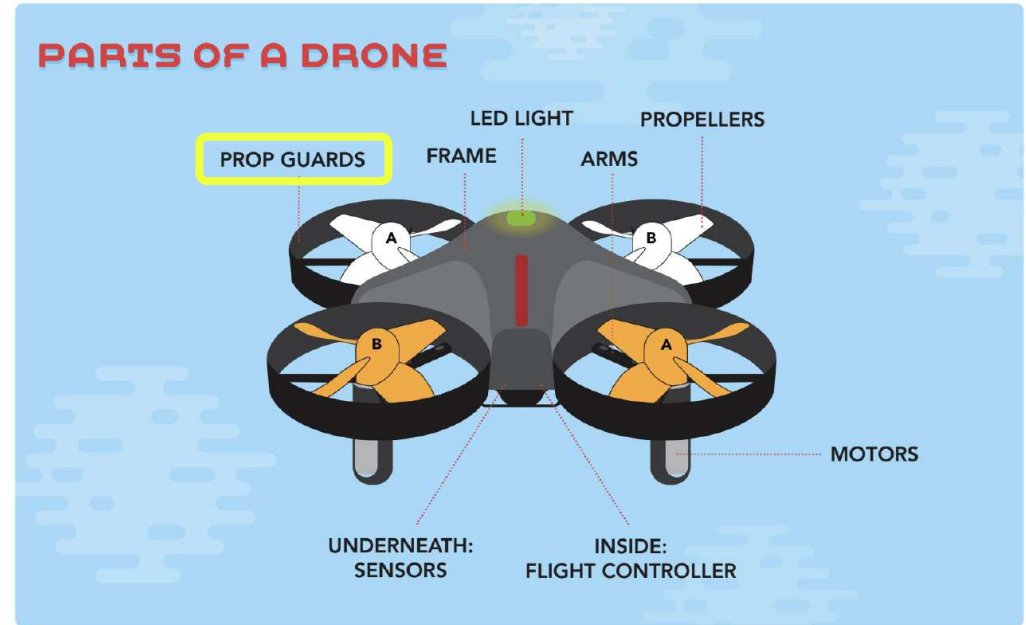edventures.com | sales@edventures.com | (800) 429-3110

What part of a drone protects the propellers?

A) Motors

B) Frame

C) Prop Guards ✅

D) Flight Controller

What happens when you increase the throttle?

A) The drone tilts forward

B) The drone rotates left or right

C) The drone moves up

D) The drone moves backward

00:15

What happens when you increase the throttle?

A) The drone tilts forward

B) The drone rotates left or right
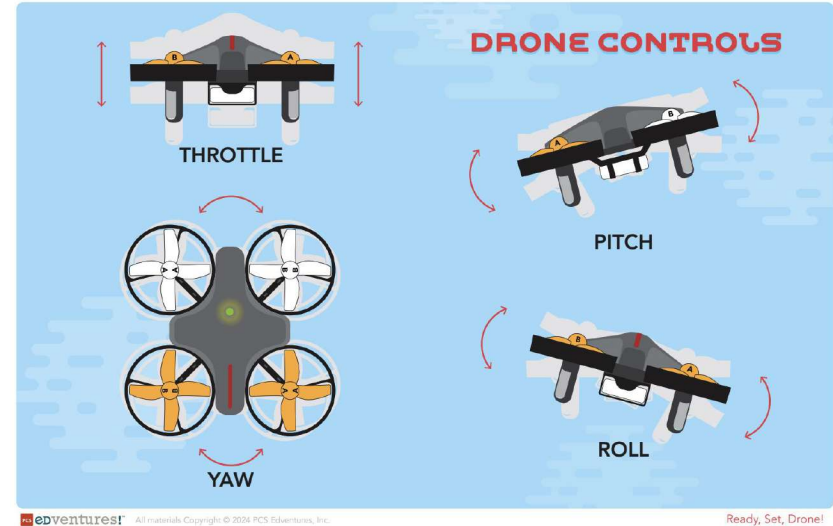
C) The drone moves up ✅

D) The drone moves backward

DRONE CONTROLS

THROTTLE

PITCH

YAW

ROLL

Ready, Set, Drone!

What control makes a drone spin left or right while staying in place?

A) Roll

B) Yaw

C) Pitch

D) Throttle

00:15

What control makes a drone spin left or right while staying in place?

A) Roll

B) Yaw ✅

C) Pitch

D) Throttle

DRONE CONTROLS

THROTTLE

PITCH

YAW

ROLL

Ready, Set, Drone!

If you push the right joystick forward, what will the drone do?

A) Move forward

B) Move backward

C) Rotate left

D) Move sideways

00:15

If you push the **right joystick forward**, what will the drone do?

A) Move forward ✅
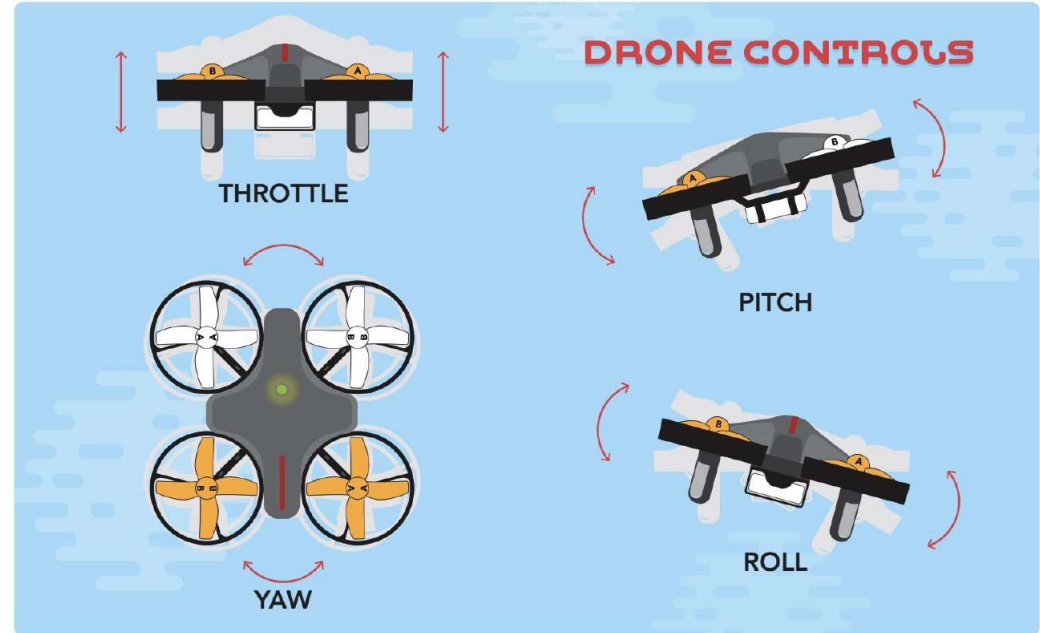
B) Move backward

C) Rotate left

D) Move sideways

DRONE CONTROLS

THROTTLE

YAW

PITCH

ROLL

What does CCW stand for in drone propellers?

A) Clockwise Center Wing

B) Counter Clockwise

C) Circular Control Wind

D) Counter Central Weight

00:15

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What does CCW stand for in drone propellers?

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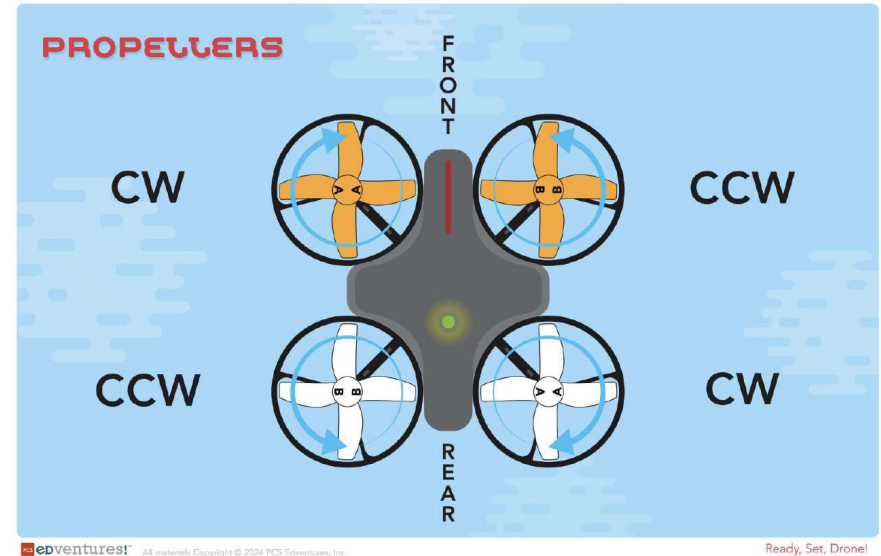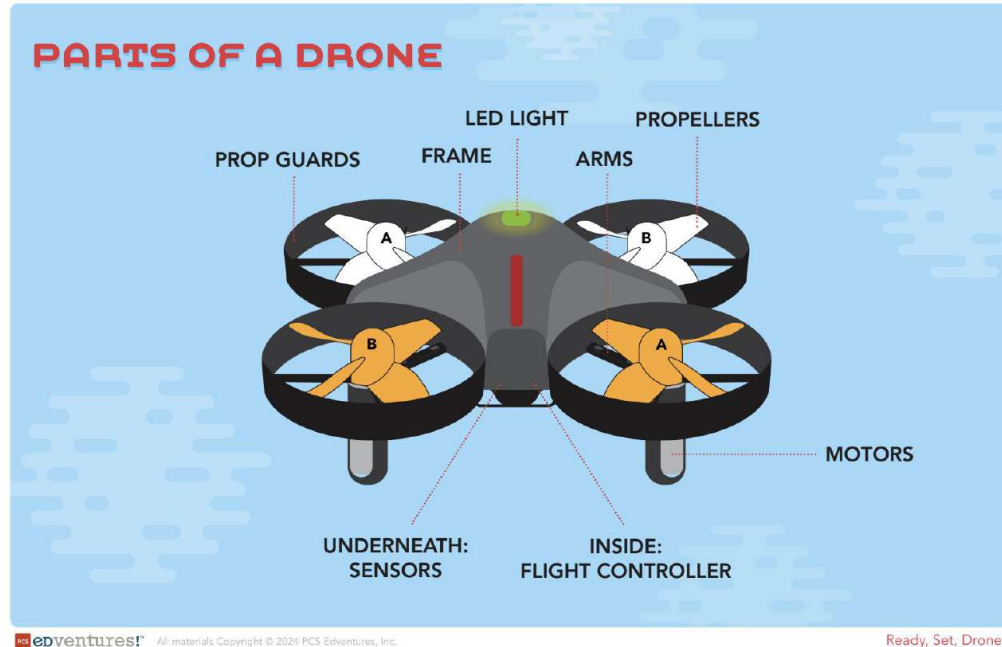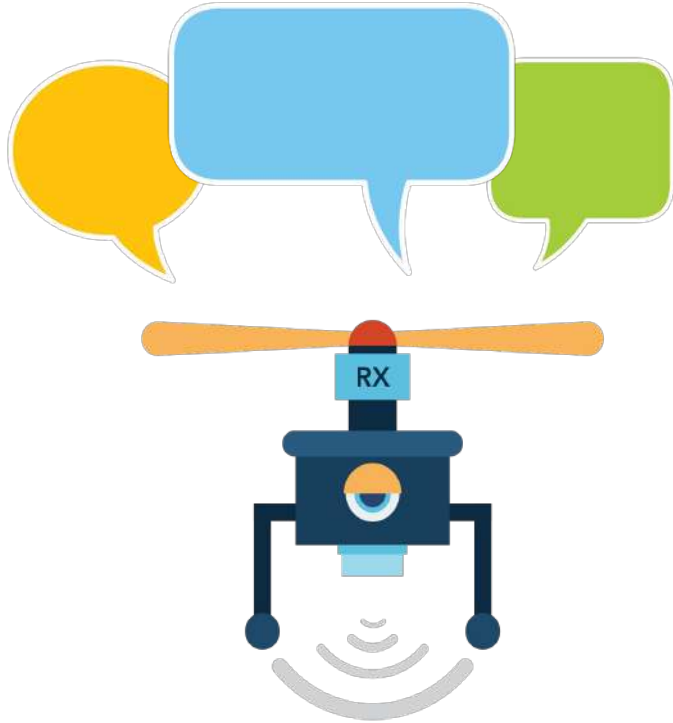
C) Circular Control Wind

D) Counter Central Weight

PROPELLERS

FRONT

CW | CCW

CCW | CW

REAR

Ready, Set, Drone!

What is the function of a **flight controller** inside of a drone?

PARTS OF A DRONE

PROP GUARDS — FRAME — LED LIGHT — ARMS — PROPELLERS

A   B   B   A

UNDERNEATH: SENSORS   INSIDE: FLIGHT CONTROLLER   MOTORS

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