Drone Designers: Exploring STEAM Careers

Grade Levels
4-8

Educational Setting
In or out of school.

Informational Webinar(s)
Jan. 28, 4 p.m.
Register:us06web.zoom.us/meeting/register/tZYpc-ysrzltHNzV65GF1KkuxB8cQHbqP77I
Passcode: Drones

Recordings on Iowa STEM's Website

Award Provides
Materials for 30
- Online Curriculum Access
- Instructor Guide, Posters
- Designer's Notebooks: 31
- Storage Tubs: 2
- Ball of String: 1
- #2 & Colored Pencils
- Construction Paper
- Craft Foam (24 pk)
- Digital Scale
- Glitter & White Cardstock
- Battery Multi-Charger: 6
- Lanyard Inserts
- LiPo Safe Storage Bag
- Metal Washers: 80
- Mini Quadcopters: 6
- Mini Motors (4 pack)
- Pencil Sharpeners: 6
- Safety Glasses: 30
- Scissors and tape
- Team Tote Bags: 6
- Tissue Paper
- Educator stipend: $320
- Training support: $165
- Optional: 1 CEU ($55 paid by the educator)

2025-26 STEM Scale-Up Program Summary

Drone Designers: Exploring STEAM Careers takes a multidisciplinary approach to introducing learners in grades 4–8 to the world of drones and coding, with an emphasis on their use in the arts and entertainment industries. The program is designed to be highly engaging for learners and easily implemented by instructors.

Released following the success of two of PCS Edventures' earlier drone-focused offerings and developed in partnership with drone entertainment professionals, the *Drone Designers* program is unique in its emphasis on arts integration.

Through 12 scaffolded one-hour lessons, learners collaborate with peers as they engage in the iterative design process to design and build drone costumes. Then groups choreograph and code a drone performance set to music.

Not only do learners benefit from hands-on practice in various industry mirroring roles on a production team (from Creative Director to Pilot-in-Command), but they also gain a solid foundation in the basics of coding and computational thinking, as well as an understanding of the safe operation and basic mechanics of drones. With expanding uses of drones across industries, *Drone Designers* is an exciting and engaging way to prepare learners to enter the workplace.

Requirements to Implement the Program

- Educator(s) must attend the initial 2-day in-person professional development and two subsequent 1-hour virtual training sessions.
- *Drone Designers* requires six Internet-connected laptops or Chromebooks (one per drone) to run the Blockly web app and access music. (CoDrone EDU is not compatible with Android or iOS operating systems.)
- Completion takes about 12 hours, using one-hour lessons. From camps to semester courses, it's very flexible.
- Educator(s) must participate in the STEM Council Scale-Up Educator Survey.

Iowa Standards Alignment

- Iowa Computer Science Standards– 1B-AP-10: Create programs that include sequences, events, loops, and conditionals.
- NGSS– MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- Iowa Fine Arts Standards– DA:Cr1.1.5a: Build content for choreography using several stimuli (for example, music/sound, text, objects, images, notation, observed dance, experiences, literary forms, natural phenomena, current news, social events).
- For a full list of standards alignment for Drone Designers visit tinyurl.com/ScaleUpDrone

Professional Development

Duration:
Two full-day (6-8 hours) in-person PD days followed by two 1-hour virtual sessions. Materials delivered during training. Awardees will take home two 27-pound boxes, no bigger than 27x14x19 inches.

Date(s):
Tentative training dates pending the number of awards:
- NE Iowa: July 21-22
- SE Iowa: July 24-25
- NW Iowa: July 28-29
- SW Iowa: July 31-Aug. 1
- NC Iowa: Aug. 4-5
- SC Iowa: Aug. 7-8

Location:
In-person.

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