Indiana Standards
In-Classroom 4-H UAV/Drone Enrichment

General Science Standards 3-8

3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

MS-PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

MS-PS2-2 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

MS-PS3-5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Computer Science Grades 3-5

3-5.DI.1: Decompose problems and subproblems into parts as a means to solving complex problems. (E)

3-5.PA.1: Collaborate with peers to implement problem-solving steps to create a variety of programming solutions. (E)

3-5.PA.2: Design programs that incorporate sequences, events, loops, and conditionals. (E)

3-5.PA.3: Test and debug (i.e., identify and fix errors) a program or algorithm to ensure it runs as intended.

3-5.PA.5: Describe choices made during program development using code comments, presentations, and demonstrations. (E)

Computer Science Grades 6-8

6-8.DI.1: Decompose (i.e., break down) problems into smaller, more manageable subsets by applying the algorithmic problem-solving steps to make the possible solutions easier to follow, test, and debug. (E)

6-8.CD.2: Systematically identify and fix problems (i.e., troubleshoot) with computing devices and their components (e.g., checklist, decision tree, flowchart).

6-8.PA.1: Design and iteratively develop programs that combine the following: sequencing, looping (including nested loops), conditionals (including compound conditionals), expressions, variables, functions, and parameters. (E)

6-8.PA.2: Systematically test and refine programs using a range of test cases. (E)

Employability Skills 3-5

3-5.M.3 Apply and demonstrate self-confidence in a variety of settings.

3-5.WE.3 Apply understanding of independence to complete tasks.

3-5.WE.4 Complete tasks or activities with prompting and guidance from adult educators.

3-5.WE.5 Demonstrate perseverance to complete tasks and activities.

3-5.WE.6 Begin to take steps to organize and prioritize tasks.

3-5.WE.7 Begin to understand coping strategies to deal with expected and unexpected change.

3-5.LS.3 Communicate with others using a variety of technology.

3-5.LS.7 Describe non-traditional occupations.

3-5.LS.10 Identify a short-term goal and develop a plan of action.

3-5.LS.11 Complete assignments, projects, and activities with some redirection from teachers, mentors, or supervisors.

3-5.LS.13 Utilize effective questioning and brainstorming techniques.

3-5.SE.3 Engage in cooperative game play.

Employability Skills 6-8

6-8.M.1 Apply new strategies based on lessons learned from feedback.

6-8.M.2 Engage in feedback with peers to seek growth and learning opportunities from others.

6-8.M.4 Demonstrate continuous growth in self- understanding.

6-8.WE.3 Complete tasks or activities with some prompting and guidance.

6-8.WE.4 Understand failure as an opportunity for growth.

6-8.WE.6 Apply knowledge, skills, and attitudes required to adjust to change, while continuing to achieve in school and activities.

6-8.LS.2 Speak to and have conversations with peers and adults to express ideas while respecting differing opinions.

6-8.LS.7 Evaluate decisions and discuss the use of alternatives in decision-making situations.

6-8.LS.9 Complete assignments, projects, and activities with minimal to no redirection from teachers, mentors, or supervisors.

6-8.LS.10 Take an active participation in the learning process.

6-8.LS.11 Complete activities and assignments thoroughly and accurately.

6-8.LS.12 Use prediction and evaluation skills to develop potential solutions.