

## STEM Projects

2021 Project Completion Guidelines

### Skill Level – Listed by Project

#### General Requirements

- ✿ Member must participate in Project Interviews (County or Club level) for the project to be considered completed for the 4-H year.
- ✿ Member must participate in a Project Interview during the Franklin County Fair, on the appropriate day, to be eligible to be considered for Ohio State Fair Selection.
- ✿ Member must display a representation of their project in their 4-H club fair booth.

### Franklin County STEM Projects Completion Requirements

#### Rockets Away (2-Liter Bottles)- Beginner

1. All 3 Interest Areas.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Build and Launch a 2-liter bottle rocket.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

#### Science Fun with Flight - Beginner

1. All 7 Interest Areas.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Build a glider or flyer, or a plastic model airplane or jet.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.



### **Rockets Away (Solid Fuel)- Beginner**

1. All 3 Interest Areas.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Build and Launch a solid-fuel model rocket from a kit.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

### **Science Fun with Kitchen Chemistry - Beginner**

1. All 11 Interest Areas.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project.
5. Be prepared to discuss your project experiences.

### **Magic of Electricity, Level 1 - Beginner**

1. At least 7 activities per year (3 main activities and 4 Brain Boosters).
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Planning Guide.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.



### **Investigating Electricity, Level 2 - Intermediate**

1. At least 7 activities per year (3 main activities and 4 Brain Boosters).
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Planning Guide.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

### **Wired for Power, Level 3 – Intermediate**

1. At least 7 activities per year (3 main activities and 4 Brain Boosters).
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Planning Guide.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

### **Entering Electronics, Level 4 – Advanced**

1. At least 7 activities per year (3 main activities and 4 Brain Boosters).
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Planning Guide.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.



### **Science Fun with Electricity - Beginner**

1. All Interest Areas, including experiments and journals for each interest area.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Project Summary.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

### **Young Engineers in Solar Energy - Intermediate**

1. All 9 Activities and all of the Talking It Over questions.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Project Review.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

### **Science Fun with Dairy Foods: The Case of the Missing Milk - Beginner**

1. All 6 Activities.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Project Review.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.



**Not Just Knots – Skill Level: N/A**

1. All 17 Activities, including a capstone project, and all of the Talking It Over questions.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Project Review.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

**Science Fun with Physics - Beginner**

1. All 12 Experiments.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Project Review.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

**Robotics 1 with EV3 - Intermediate**

1. All 12 Activities and all of the Talking It Over questions.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Project Review.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.



**Robotics 2: EV3N More – Advanced**

1. All 7 Activities and all of the Talking It Over questions.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Project Review.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

**Robotics Master - Advanced**

1. One major robotics project.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed project records, interviews, budget, and photos.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

**Crank It Up, Level 1 - Beginner**

1. At least 7 activities each year in either main activities sections or Race Ahead sections.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Planning Guide.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.



**Warm It Up, Level 2 - Intermediate**

1. At least 7 activities each year in either main activities sections or Race Ahead sections.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Planning Guide.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

**Tune It Up, Level 3 - Advanced**

1. At least 7 activities each year in either main activities sections or Race Ahead sections.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Completed Planning Guide.
5. Educational Display on a selected topic from the project.
6. Be prepared to discuss your project experiences.

**Starting Up: Getting to Know Your Tractor, Level A - Beginner**

1. Complete all activities.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project.
5. Be prepared to discuss your project experiences.

**Tractor Operations: Gearing Up for Safety, Level B - Intermediate**

1. Complete all activities.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project.
5. Be prepared to discuss your project experiences.



### **Moving Out: Learning About Your Tractor and Farm Machinery, Level C - Intermediate**

1. Complete all activities.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project.
5. Be prepared to discuss your project experiences.

### **Learning More: Learning About Agricultural Tractors and Equipment, Level D – Advanced**

1. Complete all activities.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project.
5. Be prepared to discuss your project experiences.

### **Arcs and Sparks - Intermediate**

1. Complete areas, skills, and knowledge questions according to the year in the project.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Build at least 2 weldments/or other items in the book.
5. Educational Display on a selected topic from the project and a one-page report.
6. Be prepared to discuss your project experiences.





**ATV Safety – Advanced (No State Fair Event)**

1. Complete areas, skills, and knowledge questions according to the year in the project.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project and a one-page report.
5. Be prepared to discuss your project experiences.

**Bicycling for Fun – Beginner (No State Fair Event)**

1. Complete areas, skills, and knowledge questions according to the year in the project.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project and a one-page report.
5. Be prepared to discuss your project experiences.

**Wheels in Motion – Intermediate (No State Fair Event)**

1. Complete areas, skills, and knowledge questions according to the year in the project.
2. At least 2 learning experiences.
3. At least 2 leadership/citizenship activities.
4. Educational Display on a selected topic from the project and a one-page report.
5. Be prepared to discuss your project experiences.

**Ohio State Fair Exhibition Day – STEM Day, Engineering Excitement Days**

- ✿ Selections for the Ohio State Fair will be made during the Franklin County Fair and will be based on Franklin County Project Completion Requirements.

