



## 4-H SCIENTIFIC INVESTIGATION



Judges will use the criteria outline in this tip sheet to **evaluate exhibits** for projects that use **scientific investigation techniques** to answer a question or problem **regardless of exhibit class**.

For example:

- If the purpose of the exhibit is to investigate “how garden carrots react to various fertilizers,” the exhibit may be in a horticulture class; yet judging should be based on scientific investigation criteria.
- An exhibit that investigates “how well different cloth dyes work on certain fabrics.” This project may be in the clothing project/class, but it is a scientific investigation and should be evaluated using this Tip Sheet.

**If the exhibit is intended to inform** it’s audience about a scientific topic—not conducting an investigation—use the **Poster Exhibits Tip Sheet** for the project or class it is in to evaluate the exhibit.

## What’s the judge looking for?

**For all exhibits, be prepared to explain:**

- 1) What did you plan to learn or do? (What was your exhibit goal(s)?)
- 2) What steps did you take to learn or do this? Explain what you wanted to do so it is easily understood. The judge wants to know and understand the steps you used to make your exhibit.
- 3) What were the most important things you learned?

**All scientific investigations should include the following:**

- Well defined question
- Background research on the topic
- Clear plan and process for investigating the question
- Careful records on the investigation process and results
- Orderly presentation of the investigations important phases
- Careful collection and organization of data
- Clearly stated reasons for all conclusions
- Conclusions that follow logically from the data collected during the investigation
- Sources of background information are cited in investigation notes and/or display

**4-H**  
GROWING TOGETHER



**As youth become more advanced in their scientific investigations look for the following:**

- Creativity or originality in the question asked, approach, or data analysis and interpretation
- Background research that goes beyond popular literature to include scientific sources
- Changes in the plan to accommodate unforeseen complications carefully recorded and accounted for in analysis
- Appropriate and thorough Data analysis
- Sufficient data collected to justify the youth's confidence in their conclusions
- Youth understand the limitations of their investigation, its data, and conclusions
- Youth understand how their research fits into the larger body of scientific knowledge on this topic
- Youth understand what further research is needed