

Experimental Design

[Judging Sheets](#) used at the competition

Number of Participants: 3

Approximate Time: 40 minutes

General Description:

Students will plan and conduct an investigation using the available materials in an allotted time period.

Scoring:

- 1 point for Investigation Question
- 2 points for Procedure
- 1 point for Materials
- 3 points for Variables
- 1 points for Prediction
- 1 point for a STOP check
- 4 points for Data
- 2 points for Results
- 2 points for Conclusion
- 3 points for Team work
- BONUS Points: 2 pts if students worked independently, 1 pt if students had minimal help, 0 pts if considerable help was given

The Competition:

1. Students will view available materials and plan the investigation. (approx 10 minutes)
2. Students will conduct the investigation multiple times and collect data. (approx 15 minutes)
3. Students will complete the lab sheet and turn the paper into the judges. (approx 10 minutes)
4. Judges will be making observations and recording notes during the 40 minutes.

Notes/Changes for 2022:

- Materials available will not be announced beforehand. All groups will have access to the same materials.
- 3rd grade: Students will be given a choice between two questions to design an investigation. Each team will be given the same supplies to choose from.
 - *Examples: Hot water makes sugar dissolve faster. or Cold water makes sugar dissolve faster.*
- 4th grade: Students will be given a question to design an investigation. Each team will be given the same supplies to choose from.
 - *Examples: Does temperature affect how fast sugar dissolves? or Do all objects fall at the same rate?*
- 5th grade: Students will need to generate their own question to investigate from a given topic. Each team will be given the same supplies, applicable to their topic to choose from.
 - *Examples: Properties can be used to identify matter. Different earth materials affect erosion.*
- 6th grade: Students will need to generate their own testable question to investigate. All teams will have access to the same supplies.