

STEM Fair Information

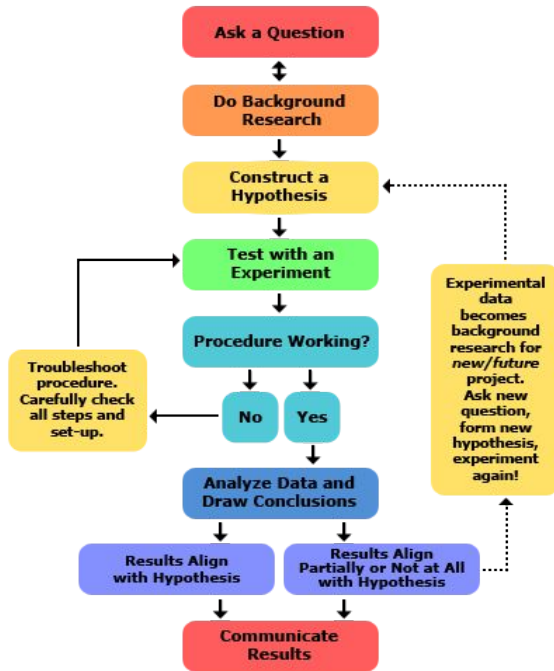
FHSA 2018-2019

Changes

4th Grade	Science
5th Grade	Science or Engineering
6th Grade	Science, Engineering, or Mathematics
7th Grade	Science, Engineering, Mathematics, or History Day
8th Grade	Science, Engineering, Mathematics, History Day, or STEM Research

Scientific Method &

Experiments-To gain knowledge and information-a testable question



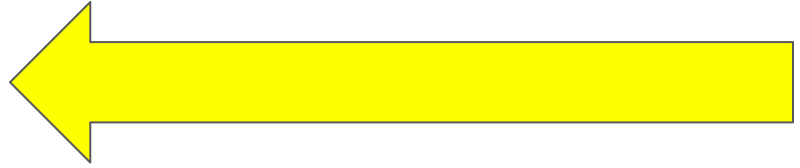
Engineering Design

Process-creating a solution to a problem, fulfilling a need or want, innovation of an idea or product.

- **Think** – think of ideas,
- **Do** – build prototypes,
- **Test** – test the solutions, and repeat this process until the problem is solved.

Mathematical Projects-

To explore a mathematical concept in greater detail. Often times uses the scientific method.



History Day - research an event in history, draw conclusions, and create a presentation all related to a theme.

2019 “*Triumph & Tragedy*”

STEM Research Project- Research an area of STEM (science, technology, engineering, or mathematics). Provide a detailed report on the impact of this topic on society.


Examples:

- How robots are engineered to be used in the care of elders
 - Distribution of medication, surgical procedures, and as companions
- How robots are engineered for farming, and the food production industry
- How robots are engineered to perform rescue missions
 - How engineering choices may lead to rescue more victims
- How robots are engineered to assist people with special needs
 - How choices of different engineering solutions may positively affect those being served
- How robots are engineered to perform dangerous tasks
 - How the military applications can save lives

Advancement Options

4th & 5th Projects	School Fair	*District Fair	*CARSEF-UALR
6th Grade	School Fair	*CARSEF-UALR	
7th/8th History Day	School Fair	History Day-UALR	
7th/8th S,E,M	School Fair	*CARSEF	*UAPB
8th STEM Research	School Fair		

*Only a limited number of projects can be entered

Topics to Avoid	Why
Any topic that boils down to a simple preference or taste comparison . For example, “Which tastes better: Coke or Pepsi?”	Such experiments don’t involve the kinds of numerical measurements we want in a science fair project. They are more of a survey.
Most consumer product testing of the “ Which is best? ” type. This includes comparisons of popcorn, bubble gum, make-up, detergents, and paper towels .	These projects only have scientific validity if the investigator fully understands the science behind why the product works and applies that understanding to the experiment.
Any topic that requires people to recall things they did in the past.	The data tends to be unreliable.
Effect of colored light on plants.	Several people do this project at almost every science fair. You can be more creative!
Effect of running, music, video games, or almost anything on blood pressure.	The result is either obvious or difficult to measure with proper controls.
Effect of color on memory, emotion, mood, taste, strength, etc.	Highly subjective and difficult to measure.
Any topic that requires dangerous, hard to find, expensive, or illegal materials.	We care about your safety and your parents’ pocketbook.
Any topic that requires measurements that will be extremely difficult to make or repeat, given your equipment.	Without measurement, you can’t do science.
Graphology or handwriting analysis	Questionable scientific validity.
Astrology or ESP	No scientific validity.
Which solution cleans a penny the best?	Several people do this project at almost every science fair. You can be more creative!
Which material will melt ice the fastest?	Hmm...
What happen if I don’t water a plant?	This is known. 

Keep in Mind...

- Science fair projects many not include inhumane treatment of people or animals.
- No living organisms except plants will be exhibited at the fair. Display of foods, bacteria, microorganisms or any other type of cultured growth is not permitted, so pictures on the display board are required. Projects involving mold are not permitted.
- Anything that could be harmful to the public or that is prohibited on school property cannot be exhibited at the fair. This includes harmful chemicals, caustics, acids, poisons, explosives, open flames, combustible materials, and sharp items (knives, pins, hypodermic needles).

Keep in Mind...

- Take pictures to show the parts of your project and experiment. Pictures may be glued on your board and/or put in your binder with your log and summary.
- Objects and pieces of your experiment will NOT be permitted to be shown with your project or glued on the board (per county regulations).
- You may paint/decorate your board, but please remember that no three-dimensional objects are allowed on the board.
- ALL measurements have to be in METRIC UNITS!

Keep in Mind...

- Your brainstorming, notes, daily log, summary, and any other research/data for your project have to be in a composition notebook. **NO LOOSE PAPERS** will be accepted!
- Daily notes need to be recorded in your science fair log notebook. Think of this as a science fair “diary or journal”. You are responsible for daily entries. Please note that some projects can be tested and retested several times in one or two days. The term “daily” log may not mean many days. However, your log should include details of what you did to research and all parts of the science fair process
- Projects should be developed, carried out, and exhibited by students with minimal help from parents.

Categories

1. Animal Sciences
2. Behavioral and Social Sciences
3. Biochemistry
4. Chemistry
5. Earth and Planetary Sciences
6. Engineering
7. Environmental Management
8. Environmental Sciences
9. Energy and Transportation
10. Math and Computer Sciences
11. Medical and Health Sciences
12. Microbiology (MS/HS only)
13. Physics and Astronomy
14. Plant Sciences

Project Calendar

Date	Activity Description
September 5	Parent Information Night 5:30-6:30 Cafeteria
September 18	Student Help Session #1 2:45-3:45 Room 428
September 27	Research Checkpoint
October 9	Student Help Session #2 2:45-3:45 Room 428
October 11	Experimental Procedure/Plan Checkpoint
October 18	Log Book Checkpoint
October 23	Student Help Session #3 2:45-3:45 Room 428
October 25	Logbook/Progress Checkpoint #2
November 6	Student Help Session #4 2:45-3:45 Room 428
November 8	Experiment/Plan Checkpoint
November 13	Student Help Session #5 2:45-3:45 Room 428
November 15	Rough Draft Checkpoint
November 29	Final Report Due
January 10	Display Board Due
January 15-18	Science Fair Judging*
January 24	Science Fair Awards*

*Dates are subject to change pending possible winter weather.