CATEGORIES OF COMPETITION

Regional Science and Engineering Fairs

At the regional competitions, the categories of competition may vary but will be similar to those at the state or international competition. You should contact your regional science fair director for this information.

Oklahoma State Science and Engineering Fair

Students will compete in either Division I (Grades 10 - 12) or Division II (Grades 7 - 9) and in one of the following categories within the appropriate Division:

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<td>Zoology and Botany</td>
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Projects in all subject areas that are conducted by two or a maximum of three students compete in the Team Projects category in Division I or Division II. To compete in the Division II Team Projects category, all team participants must be in grades 7 - 9. Team projects are eligible for competition at the International Science and Engineering Fair (ISEF) and must comply with all ISEF rules and limitations.

PLACING YOUR PROJECT IN THE APPROPRIATE CATEGORY

The following information may help in selecting the proper category for your project but the director of your regional fair will have the final authority on categories.

BEHAVIORAL AND SOCIAL SCIENCES:

The science or study of the thought processes and behavior of humans and other animals in their interactions with the environment studied through observational and experimental methods.

This includes the ISEF Categories:

- Clinical & Developmental Psychology
- Cognitive Psychology
- Physiological Psychology
- Sociology
**BIOCHEMISTRY, MEDICINE, AND HEALTH SCIENCES:**

*Biochemistry:* The study of the chemical substances and vital processes occurring in living organisms, the processes by which these substances enter into, or are formed in, the organisms and react with each other and the environment.

*Cellular and Molecular Biology:* The study of the structure and formation of cells.

*Medicine and Health Sciences:* The science of diagnosing, treating, or preventing disease and other damage to the body or mind.

This includes the ISEF Categories:
- Cellular Biology
- Cellular and Molecular Genetics
- Disease Diagnosis and Treatment
- Epidemiology
- General Biochemistry
- Genetics
- Immunology
- Metabolism
- Molecular Biology
- Molecular Biology of Diseases
- Physiology and Pathophysiology
- Structural Biochemistry

**MICROBIOLOGY:**

The study of micro-organisms, including bacteria, viruses, prokaryotes, and simple eukaryotes and of antibiotic substances.

This includes the ISEF Categories:
- Antibiotics, Antimicrobials
- Bacteriology
- Microbial Genetics
- Virology

**EARTH AND SPACE SCIENCES:**

The study of sciences related to the planet Earth (Geology, minerology, physiography, oceanography, meteorology, climatology, speleology, sesismology, geography, atmospheric sciences, etc.). Astronomy is the study of anything in the universe beyond the Earth.

This includes the ISEF Categories:
- Astronomy
- Climatology, Weather
- Geochemistry, Mineralogy
- Historical Paleontology
Geophysics
Planetary Science
Tectonics

**ENGINEERING:**

The application of scientific and mathematical principles to practical ends such as the design, manufacture, and operation of efficient and economical structures, processes, and systems. This includes the ISEF Categories:
- Bioengineering
- Chemical Engineering
- Civil Engineering, Construction Engineering
- Electrical Engineering, Computer Engineering, Controls
- Industrial Engineering, Processing
- Material Science
- Mechanical Engineering
- Robotics
- Thermodynamics, Solar

**ENVIRONMENTAL SCIENCE:**

*Environmental Sciences:* The analysis of existing conditions of the environment. *Environmental Management:* The study of managing mans' interaction with the environment. *Energy & Transportation:* The study of renewable energy sources, energy efficiency, clean transport, and alternative fuels.

This includes the ISEF Categories:
- Aerospace and Aeronautical Engineering, Aerodynamics
- Air Pollution and Air Quality
- Alternative Fuels
- Bioremediation
- Fossil Fuel Energy
- Ecosystems Management
- Environmental Engineering
- Land Resource Management, Forestry
- Recycling, Waste Management
- Renewable Energies
- Soil Contamination and Soil Quality
- Vehicle Development
- Water Pollution and Water Quality
MATHEMATICS AND COMPUTER SCIENCE:

Mathematical Sciences: The study of the measurement, properties, and relationships of quantities and sets, using numbers and symbols. The deductive study of numbers, geometry, and various abstract constructs, or structures. Mathematics is very broadly divided into foundations, algebra, analysis, geometry, and applied mathematics, which includes theoretical computer science.

Computer Sciences: The study of information processes, the structures and procedures that represent processes, and their implementation in information processing systems. It includes systems analysis and design, application and system software design, programming, and datacenter operations.

This includes the ISEF Categories:
- Algebra
- Algorithms, Data Bases
- Analysis
- Applied Mathematics
- Artificial Intelligence
- Computational Science, Computer Graphics
- Computer System, Operating System
- Geometry
- Networking and Communications
- Probability and Statistics
- Software Engineering, Programming Languages

PHYSICAL SCIENCE:

Chemistry is the science of the composition, structure, properties, and reactions of matter, especially of atomic and molecular systems.

Physics is the science of matter and energy and of interactions between the two.

This includes the ISEF Categories:
- Analytical Chemistry
- General Chemistry
- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry
- Biological Physics
- Instrumentation and Electronics
- Magnetics and Electromagnetics
- Nuclear and Particle Physics
- Optics, Lasers, Masers
- Theoretical Physics, Theoretical or Computational Astronomy
**ZOOLOGY AND BOTANY:**

Zoology (or animal sciences) is the study of animals and animal life, including the study of the structure, physiology, development, and classification of animals. Animal ecology, physiology, animal husbandry, cytology, histology, entomology, ichthyology, ornithology, herpetology, etc. Botany is the study of plant life. Ecology, agronomy, horticulture, forestry, plant taxonomy, physiology, pathology, plant genetics, hydroponics, algae, etc.

This includes the ISEF Categories:
- Animal Sciences:
  - Development
  - Ecology
  - Animal Husbandry
  - Pathology
  - Physiology
  - Population Genetics
  - Systematics
- Botany:
  - Agriculture/Agronomy
  - Development
  - Ecology
  - Genetics
  - Photosynthesis
  - Plant Physiology (Molecular, Cellular, Organismal)
  - Plant Systematics, Evolution

**TEAM PROJECTS:**

1) At the Intel ISEF, team projects will compete within the scientific category of their research and will no longer be a separate judged category.

2) Teams may have up to three members. Teams may not have more than three members at a local fair and then eliminate members to qualify for the Intel ISEF.

3) Team membership cannot be changed during a given research year including converting from an individual project or vice versa, but may be altered in subsequent years.

4) Each team should appoint a team leader to coordinate the work and act as spokesperson. However, each member of the team should be able to serve as spokesperson, be fully involved with the project, and be familiar with all aspects of the project. The final work should reflect the coordinated efforts of all team members and will be evaluated using similar rules and judging criteria as individual projects.

5) Full names of all team members must appear on the abstract and forms.