WV Science and Engineering Fair
Elementary and Middle School Categories

The twelve categories (Animal Science, Plant Science, Behavioral and Social Science, Medical Science, Chemistry, Physics and Astronomy, Engineering, Material Science, Math and Data, Earth and Environmental Science, Energy Science, and Technology) have been established with the goal of aligning judges and student projects. The twelve categories, underlined and in red, are based on the ISEF categories, which are shown in black for informational purposes. Visit the ISEF website at http://bit.ly/ISEFcat for a complete description of the ISEF categories.

ANIMAL SCIENCE

which includes:

ANIMAL SCIENCES (ANIM)
- Animal Behavior
- Cellular Studies
- Development
- Ecology
- Genetics
- Nutrition & Growth
- Physiology
- Systematics & Evolution

CELLULAR & MOLECULAR BIOLOGY (CELL)
- Cell Physiology
- Cellular Immunology
- Genetics
- Molecular Biology

COMPUTATIONAL BIOLOGY & BIOINFORMATICS (CBIO)
- Computational Biomodeling
- Computational Epidemiology
- Computational Evolutionary
- Biology
- Computational Neuroscience
- Computational Pharmacology
- Genomics
- Neurobiology

PLANT SCIENCE

which includes:

PLANT SCIENCES (PLNT)
- Agriculture & Agronomy
- Ecology
- Genetics/Breeding
- Growth & Development
- Pathology
- Plant Physiology
- Systematics & Evolution

CELLULAR & MOLECULAR BIOLOGY (CELL)
- Cell Physiology
- Cellular Immunology
- Genetics
- Molecular Biology

BEHAVIORAL AND SOCIAL SCIENCE

which includes:

BEHAVIORAL & SOCIAL SCIENCES (BEHA)
- Clinical & Developmental Psychology
- Cognitive Psychology
- Neuroscience
- Physiological Psychology
- Sociology & Social Psychology

MEDICAL SCIENCES

which includes:

BIOMEDICAL & HEALTH SCI (BMED)
- Cell, Organ, & Systems Physiology
- Genetics & Molecular Biology of Disease
- Immunology
- Nutrition & Natural Products
- Pathophysiology

TRANSLATIONAL MED SCI (TMED)
- Disease Detection & Diagnosis
- Disease Prevention
- Disease Treatment & Therapies
- Drug Identification & Testing
- Pre-Clinical Studies

PHYSICS AND ASTRONOMY

which includes:

PHYSICS & ASTRONOMY (PHYS)
- Astronomy & Cosmology
- Atomic, Molecular, & Optical Physics
- Biological Physics
- Condensed Matter & Materials
- Mechanics
- Nuclear & Particle Physics
- Theoretical, Computational & Quantum Physics

CHEMISTRY

which includes:

CHEMISTRY (CHEM)
- Analytical Chemistry
- Computational Chemistry
- Environmental Chemistry
- Inorganic Chemistry
- Materials Chemistry
- Organic Chemistry
- Physical Chemistry

BIOCHEMISTRY (BCHM)
- Analytical Biochemistry
- General Biochemistry
- Medical Biochemistry
- Structural Biochemistry

ENGINEERING

which includes:

BIOMEDICAL ENG. (ENBM)
- Biomaterials & Regen Medicine
- Biomechanics
- Biomedical Devices
- Biomedical Imaging
- Cell & Tissue Engineering
- Synthetic Biology

MECHANICS ENG. (ENMC)
- Aerospace & Aeronautical Engineering
- Civil Engineering
- Computational Mechanics
- Control Theory
- Ground Vehicle Systems
- Industrial Engineering-Processing
- Mechanical Engineering
- Naval Systems

ENVIRONMENTAL ENG. (ENEV)
- Bioremediation
- Land & Reclamation
- Pollution Control
- Recycling & Waste Management
- Water Resources Management

MATERIAL SCIENCE

which includes:

MATERIALS SCIENCE (MATS)
- Biomaterials
- Ceramic & Glasses
- Composite Materials
- Computation & Theory
- Electronic, Optical & Magnetic
- Materials
- Nanomaterials
- Polymers

MATH AND DATA

which includes:

MATHEMATICS (MATH)
- Analysis
- Combinatorics, Graph Theory, & Game Theory
- Geometry & Topology
- Number Theory
- Probability & Statistics

EARTH AND ENVIRONMENTAL SCIENCE

which includes:

EARTH & ENVIRONMENTAL SCIENCES (EAEV)
- Atmospheric Science
- Climate Science
- Environmental Effects on Ecosystems
- Geosciences
- Water Science

ENERGY

which includes:

CHEMICAL (EGCH)
- Alternative Fuels
- Computational Energy Science
- Fossil Fuel Energy
- Fuel Cells & Battery Develop
- Microbial Fuel Cells
- Solar Materials Other

PHYSICAL (EGPH)
- Hydro Power
- Nuclear Power Solar
- Sustainable Design
- Thermal Power
- Wind

TECHNOLOGY

which includes:

ROBOTICS & INTELLIGENT MACHINES (ROBO)
- Biomechanics
- Cognitive Systems
- Control Theory
- Machine Learning
- Robot Kinematics

SYSTEMS SOFTWARE (SOFT)
- Algorithms
- Cybersecurity
- Databases
- Human/Machine Interface
- Languages & Operating Systems
- Mobile Apps
- Online Learning

EMBEDDED SYSTEMS (EBED)
- Circuits
- Internet of Things Microcontrollers
- Networking & Data
- Communications
- Optics
- Sensors
- Signal Processing