Chapter 4

Categories

Every fair has a list of categories, and you need to seek your teacher's advice when deciding which category you should enter your project in. It is important that you enter your project in the correct category. Since science fair judges are required to judge the content of each project based on the category in which it is entered, you would be seriously penalized if you were to enter your project in the wrong category. Listed here are common science fair categories with a brief description of each. Some topics can correctly be placed in more than one category; for example, the structure of plants could be in botany or anatomy. Each of the 50 project ideas in Part II is labeled with the category in which the project could be entered. The categories are:

- **astronomy:** The study of stars, planets, and other objects in the universe.
- **biology:** The study of living things.
  1. **anatomy:** The study of the structure of plants and animals.
  2. **behaviorism:** The study of actions that alter the relationship between an organism, such as a plant or an animal, and its environment.
  3. **botany:** The study of plants and plant life, including their structure and growth.
  4. **ecology:** The study of the relationships of living things to other living things and to their environment.
  5. **genetics:** The study of the methods of transmission of qualities from parents to their offspring; the principles of heredity in living things.
  6. **microbiology:** The study of microscopic organisms, such as, fungi, bacteria, and protista.
  7. **physiology:** The study of life processes, such as respiration, circulation, the nervous system, metabolism, and reproduction.
  8. **zoology:** The study of animals, including their structure and growth.
- **earth science:** The study of the earth.
  1. **geology:** The study of the earth, including the composition of its layers, its crust, and its history. Subtopics may include the following:
     a. **fossils:** Remnants or traces of prehistoric life-forms preserved in the earth's crust.
     b. **mineralogy:** The study of the composition and formation of minerals.
     c. **rocks:** Solids made up of one or more minerals.
     d. **seismology:** The study of earthquakes.
     e. **volcanology:** The study of volcanoes.
  2. **meteorology:** The study of weather, climate, and the earth's atmosphere.
  3. **oceanography:** The study of the oceans and marine organisms.

4. **paleontology:** The study of prehistoric life-forms.

- **engineering:** The application of scientific knowledge for practical purposes.
- **physical science:** The study of matter and energy.
  1. **chemistry:** The study of the materials that substances are made of and how they change and combine.
  2. **physics:** The study of forms of energy and the laws of motion. Subtopics include studies in the following areas:
     a. **electricity:** The form of energy associated with the presence and movement of electric charges.
     b. **energy:** The capacity to do work.
     c. **gravity:** The force that pulls celestial bodies, such as planets and moons, toward each other; the force that pulls things on or near a celestial body toward its center.
     d. **machines:** Devices that make work easier.
     e. **magnetism:** The force of attraction or repulsion between magnetic poles, and the attraction that magnets have for magnetic materials.
- **mathematics:** The use of numbers and symbols to study amounts and forms.
  1. **geometry:** The branch of mathematics that deals with points, lines, planes, and their relationships to each other.