What is a scientific project?

A scientific project is an investigation in which you try to solve a problem or answer a question that you have identified. When you do an investigation, you follow a method that allows you to test an idea or solve a problem and come to a clear conclusion. Projects for Expo must have original work done by participant e.g.
*   survey of more than a 100 questionaires
*   experimental work.

Types of projects - see assessment sheet on our website

Pure science
Pure science focuses on learning more about the world we live in by improving our knowledge at a fundamental and basic level. Little or no regard is given to applying this knowledge to practical applications. Pure scientists conduct experiments or studies to test scientific hypothesis and develop theories. An important aspect of this experimentation involves identifying variables and, where possible, controlling them.

Applied science
Applied science makes use of laws, physical relationships and other knowledge developed in the pure sciences and applies this knowledge to human needs. Engineering is very closely related to applied science. Companies make use of applied science in their research and development division to improve their products. Innovative ideas and inventions will sometimes be found in this type of project. Applied science forms the foundation for technology and applied technology

Technology and applied technology
Technology and applied technology is the application of pure and applied science knowledge to meet a specific user need, most often in an industrial or commercial setting.

Brilliant innovation and invention is less important, rather a systematic method for user need identification as well as technology or knowledge application to meet the need.

A good project would demonstrate the development of a useful technology using a systematic design, build and test process.

Engineering projects
An engineering project should state the engineering goals, development process and the evaluation of improvements. Engineering projects may include the following:

*   Define a need or "How can I make this better?"
*   Develop or establish design criteria (could be more than one)
*   Do background research and search the literature to see what has already been done or what products already exist to fill a similar need. What makes them good and what makes them weak?
*   Prepare preliminary designs and a list of materials needed. Consider costs, manufacturing and user requirements.
*   Build and test a prototype of your best design. Consider reliability, repair and servicing.
*   Retest and redesign as necessary. Product testing.
*   Present results

Computer Science Projects

These often involve creating and writing new algorithms to solve a problem or improve on an existing algorithm. Simulations, models or "virtual reality"

Mathematics Projects

These involve proofs, solving equations, etc. Mathematics is the language of science and is used to explain existing phenomena or prove new concepts and ideas.

Theoretical Projects
These projects may involve a thought experiment, development of new theories and explanations, concept formation or designing a mathematical model.