

# Beal Bank<sup>USA</sup>

Southern Nevada Regional Science & Engineering Fair

## Guidelines for Building an Invention for Elementary & Middle School Students

### FEATURES OF AN INVENTION

An Invention has four major features:

**First**, it contains an *original*, high quality design. Although your parents can help you, this invention must be *your* work. Invention ideas can be new and original (an "invention"), or an improvement on an already existing invention (an "innovation").

**Second**, the invention includes an Invention Log Book that tells everything about your invention.

**Third**, the results of your invention are clearly and neatly displayed, including an illustration of model of the invention.

**Fourth**, the display grabs the attention of the judges.

All four features are equally important.

### INVENTION LOGBOOK

Before you begin your invention, you should start your Invention Log Book, which will be a very important part of your project. Hand-write EVERYTHING into this book that pertains to the invention.

### ORIGINALITY & USEFULNESS

Your invention should represent original, creative thought and should be a new or unique solution to a specific problem. Who needs your invention and why? Does it have a marketable value?

### RESEARCH

Talk to lots of people, including teachers, parents, friends, or experts. Read magazines and books, and other written material. Research the Library and the Internet. Ask the Librarian for help. Are you sure no one else has already built your invention? Judges will look at the time and effort you spent on this research.

### BUILDING THE INVENTION AND YOUR RESULTS

As you build your invention, describe what you are doing and list all materials you use while building and testing the invention and their cost. What problems do you find and how do you solve them? Test your invention. Trial and error is a good thing! Did it accomplish your original purpose? Explain what the invention does and how it works

### MODEL OR ILLUSTRATION OF INVENTION

Draw an Illustration or build a Model of your invention. Illustrations should be colorful and clearly labeled. Models do NOT need to actually work or be a "prototype"--they only represent the invention *idea*. Use everyday materials from around the house or school to make the model.

### MAKING A TIME TABLE

It might sound silly now, but a good invention has to be started, and started soon! It also needs to be finished. Make a calendar to mark important information. Mark the dates of your school's science fair and those of the Southern Nevada Regional Science & Engineering Fair. Cross-off days planned for family, club activities and trips. Get your idea developed yet? Now work backwards from the day your invention is due. Leave at least two weeks to put together your display. You need a large block of time to research and build your invention. Remember that even simple inventions don't work as you might expect them to the first time, or the second time, or even the third time. Doesn't look too good? You needed to get started two months ago? It might be good to pick an invention for this year that first requires less time to develop. Don't forget that first choice because many of our winners start next year's invention during the long, boring summer vacation.

### PRESENTING YOUR INVENTION

All of your hard work will not be noticed if your invention does not grab the attention of the judges and the public. From the hundreds of other inventions present, yours must yell, "**Hey Judge, LOOK AT ME!**" Your invention will be examined; your efforts appreciated and may be rewarded if your project has:

#### A. Organization

Arrange the presentation of your invention so that the judges can easily examine and understand your building process and your results. With one quick glance a viewer should be able to easily find the necessary parts of your display: is this an *Invention* or *Innovation*? A description of the *Research*, including Citations, the *Usefulness* of the invention, a description of *Building the Invention*, the *Results*, and an *Illustration* or *Model* with accompanying Guide. Remember, even though you are very familiar with your topic and your work, when the judges first see it, they will have no idea what your invention is all about!

#### B. The Title Is The Beginning

Your title is what the judges might see first. It should be much more than just a beginning; a good title grabs the attention of the casual observer. It is short, yet it correctly and completely describes your entire Invention. A good title begs the people looking at your project to dig deeper.

#### C. Eye Catching And Attention Holding

Home built equipment; neat and colorful headings; graphs and tables; all draw attention to your project. The careful use of contrasting colors will help. For filling in charts and graphs, construction paper cutouts look much better than colored white paper. For illustrations, use colored marking pens instead of pencils. One area often needing extra attention is the labeling of illustrations. Each item must have its own very descriptive title.

#### D. Correctly Presented, Well Constructed

When constructing your display, observe the size limitations, safety considerations and other rules for the presentation of your project. Make sure that if humans are used in your project, that the proper release forms have been completed. The Science Fair is also very concerned about the humane treatment of all animals. If you are using animals in your invention, request any special forms that might be necessary NOW! Animals CANNOT be included in your display. Your display won't be seen if it falls apart during the Fair. Do not construct your display using ONLY poster board and tape. It will not stand up straight more than a few hours. It is okay for adults to help you construct your display. In fact, ask for their help, but remind them to check over the display rules.

#### E. Writing About Your Invention

You will be investing a lot of time and work in your Invention. A little bit more work will result in a first-class display. Remember you need enough time to write at least two drafts of your description of the invention and how it works.

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