

# Westbriar Science Fair

## Guidelines for making devices or models

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### 1. Choose your track

- Your track may be any STEM related subject, typically Physics, Chemistry, Biology, Mathematics or Engineering.
- Your device or model should ideally be an actual 3-dimensional structure.
- Your device or model should showcase a scientific or mathematical principle.

Examples:

- Devices or models that showcase any of the principles of Physics such as acceleration, thrust, gravity, inertia etc. example of a model is that of the solar system.
- Models or chemical solutions to showcase the principles of chemical reactions, solvents, catalysts etc. Example of a model is that of a molecule or atom.
- Models or organic growth to showcase the principles of Biology. Example of a model is that of various parts of plants/animals.
- Models or devices to showcase the principles of Mathematics such as building structures, bridges etc. that are built to scale.

### 2. Build your Device or Model

You may use tools to make or build your device or model, but make sure that you use the tools safely. Always use safety goggles while using power tools such as drill guns, electric saws etc, and ensure that you are using the tools under adult supervision.

Some tips to be green and creative:

- Try to use recycled materials for making your device or model
- Most times, the materials you need may be found at home
- Identify creative uses for common discarded materials such as plastic water bottles, bottle caps, cans, paper towel roll, grocery bags etc.
- A hot glue gun is very useful!

### 3. Research on the scientific principle that you are showcasing

- Your device or model will be very interesting if you completely understand the principle that you are showcasing.
- The research will help you understand the working of your device much better and you will have fun experimenting with various configurations!

### 4. Prepare your video

In your video, be sure to include the following:

- Your chosen STEM track (Physics, Chemistry, Biology or Mathematics)
- The principle(s) that you are showcasing with your device or model
- Describe why did you select the track and principle. Why did you choose to make this device or model?
- Describe the device or model that you have built – explain the materials used, any challenges that you ran into while making it, and how you chose the final set of materials.
- Show how your device works, and what the special features are. If you are showing a model of a scientific object, describe what the model represents and what the various parts of the model are.
- Finally, describe how much fun you had while building your device or model, and of course what you learnt during the process!