



## Project Idea Starters

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# Model Railroading

by *Bob Horton*

*Model Railroad Enthusiast*

Use this two page publication as the starting place for your 4-H Self Determined Project. You may choose to do a little or a lot depending on your level of interest in this topic. Use in conjunction with our 4-H 365, Self Determined Project Guide; available through your county OSU Extension office or by visiting our web page at [www.ag.ohio-state.edu/~idea](http://www.ag.ohio-state.edu/~idea). Be sure to register your Self Determined Project with your county OSU Extension office.

## Background

Model railroading is actually several hobbies tied together by the objective of creating a miniature railroad. There's woodworking, model building, electronics, artwork, and photography. The hobby is unique in that you can start with a minimum amount of skill, resources, and knowledge of the subject and continue to learn and enjoy for a lifetime.

After determining the gauge in which to work, (HO, O, O27, G, N, Z, etc.) a beginning model railroader often starts with a simple oval layout. However, model railroaders soon discover ways to build a more realistic layout. There are three basic ways to arrive at a track plan, find one in a book, modify one that you find, or create one of your own. No matter how you obtain your plan, you should have a good idea of what your modeling goals are and how much space, time and money you plan to devote.

Once your layout is planned its time to think about setting it up. The way you frame a model railroad must allow for such changes as adding on, modeling, and remodeling. Therefore, your benchwork should allow for disassembly and expansion. Most model railroaders recommend the L-girder method of benchwork. With this type of benchwork, the joists lie across the inverted 'L' shaped girders, providing ample support for the table top. The simplest table top is a plywood or wood slat surface. However, track

nailed directly to any wood surface amplifies the sound from an operating layout. Consider adding Homasote, cork, foam core, or foam insulation to your table top to deaden the sound.

Following the assembly of your benchwork and table top, it's time to begin laying track and switches. As you begin, you will soon see ways to modify your original track plan. Take this opportunity to test new ideas and try to imagine how the changes will add excitement to your layout while staying within the limits of your budget. Be sure your layout includes a few turnouts called 'switches.' Without switches, operation of a model railroad would be rather limited. Beginners might prefer to start with only a few switches and add more later.

Another aspect which requires forethought is wiring. When operating a model train, one controls the speed and direction of the motor inside the locomotive. To accomplish this, electric current travels from the transformer, through the rails, to the motor and back again. The farther the current travels along the track, the greater the resistance and thus the slower the train. To counter this, care must be taken in choosing the correct gauge wire to deliver current to and from the transformer and the best locations for adding feeder wires along the various sections of track.

The final consideration for completing your model railroad is scenery and structures. This time consuming step is considered by many to be the highlight of the hobby. Here model railroaders use a combination of skills to create a 'slice' of the world. This work in progress may never have an ending, only brief stopping points along the way. Some considerations for modeling include, terrain, topography, geological features, industries, residential areas, forests and farms. Most beginning modelers turn to their local hobby store for sources of landscape materials and pre-manufactured buildings.

# Planning Your Self Determined Project



Every Self Determined Project can be broken down into areas of interest. These are the specific things members wish to address during their project adventure. Using your Self Determined Project Guide 4-H 365, identify at least three (3) areas of interest with at least three (3) activities per area to explore. Take your ideas from the list below or make up your own.

## Areas of Interest & Things to Do

### Plan a Layout

- Locate a reference book on model railroading to use during project.
- Determine the scale in which to model.
- Create a track plan for a model railroad.
- Talk with parent(s) about where to put a layout.
- Identify a knowledgeable person who is willing to help.
- Attend a model railroad show.
- Join a model railroad organization.

### Construct Benchwork and Tabletop

- Determine the size, shape, and location for the benchwork.
- Get help constructing the benchwork.
- Build the benchwork with as much recycled lumber as possible.
- Select a tabletop that is sturdy and absorbs sound.
- Paint or finish the tabletop before laying track.

### Lay Track and Switches

- Layout track and switches on tabletop as planned.
- Think about ways to change or modify the basic plan.
- Discuss track plans with adult helper.

- Fasten track and switches to tabletop.
- Plan ways to expand layout after immediate goals are reached.

### Address Electrical Needs

- Discuss electrical needs with adult helper.
- Determine what gauge wire to use.
- Establish where to place transformer, power and switch controls.
- Locate the best places to connect wires to track.
- Find ways to conceal wires from view.
- Employ soldering techniques to attach wires to track.

### Create Scenery and Structures

- Visit an operating model railroad display and study how it was constructed.
- Discuss scenery and structure ideas with adult helper.
- Include a lake, pond, cliffs, pasture, woodland, meadow, or mountain in the layout.
- Include a coaling station, water tower, passenger station, village, freight terminal, freight yard, or other manmade feature in the layout

### Related Web Pages:

Classic Toy Trains Magazine & Links  
[www2.classtrain.com/ctt/](http://www2.classtrain.com/ctt/)

Model Railroader Magazine & Links  
[www2.modelrailroader.com/mr/](http://www2.modelrailroader.com/mr/)

Model Railroading Books & Videos  
<http://db.kalmbach.com/catalog/catalogJump.lasso?Menu=Books>

Visit our web page at [www.ag.ohio-state.edu/~idea](http://www.ag.ohio-state.edu/~idea) for more project idea starters along with additional information about exhibiting your Self Determined Project at the Ohio State Fair.

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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

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