

MODELS & LEGO MODELS

Cass County

Mini 4-H



Draft Developed by:

Purdue University Cooperative Extension Service
Area 7 4-H Youth Development Educators from
Blackford, Delaware, Fayette, Franklin, Henry, Jay,
Madison, Randolph, Rush, Union, & Wayne counties

Name _____ Year 20 ____

Club _____



Mini 4-H Parent's Page



Welcome to the Mini 4-H Program! Mini 4-H is designed for youth to explore a variety of project areas.

Your child received this project manual when enrolling in Mini 4-H. This manual will provide fun, age-appropriate learning activities throughout their year(s) in Mini 4-H and their interest in this project.

As a Mini 4-H parent, your job will be to guide and encourage your child through the activity. It is highly suggested that you do not complete the activities for them. Instead, help them, guide them, work with them, and let them do all that they possibly can. The 4-H motto is "learn by doing" and is the best educational tool that we can provide for youth.

Additionally, the Mini 4-H program is set up to allow your child to exhibit a project at the 4-H Fair. This project is based upon information within this manual.

The 4-H Fair is an exciting time for 4-H members and families. It is a time that allows community youth to showcase their talents, interests, and enthusiasm for learning.

Mini 4-H is fun! Your child will certainly enjoy it. You can have fun too, by guiding and helping as your child participates in the program. Encourage and praise your child as he/she has fun learning and sharing with you.

If you have any questions regarding Mini 4-H or other 4-H programs, please contact your local Extension Office.



Mini 4-Her's Page



Welcome to Mini 4-H! You are now a member of the 4-H family. You are a special person.

Mini 4-Hers have lots of fun! There are lots of activities for you to explore. You can try new things. You can share it with your friends and family.

Mom, Dad, or another adult can help you with your project. Bring your project to the 4-H Fair and lots of people will be able to see what you have done. You also get a ribbon made just for Mini 4-Hers.

Things to Know About 4-H

The 4-H Symbol: A four-leaf clover with an "H" in each leaf.

The 4-H Colors: Green and white

The 4-H Motto: To make the best, better.

The 4-H Pledge: I pledge my HEAD to clearer thinking,
my HEART to greater loyalty,
my HANDS to larger service, and
my HEALTH to better living, for my club,
my community, my country, and my world.



What Are Models?

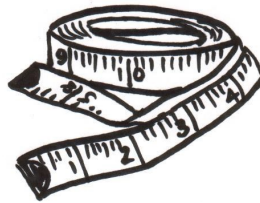
Do you like to make things? Do you see things and ask, "How was that made?" Many of us like to make things. A *model* is a small version of a real-life thing. Many of us like to make models of cars, boats, planes, tanks, and buildings. Making a model can take a lot of time.



Activity 1 – Observing Things Around Us

You will need:

- Pencil
- Tape measure
- This activity sheet



Here is what to do:

1. Look around the place you live in. Look at it from the outside and from the inside. Look at it up close and far away.
2. Write down what you see. What color is it? How big is it? (Use your tape measure.) Does it look new or old? Does it have moving parts? Does it look neat? Is it rough or smooth? Use the chart to keep notes about what you see.
3. Look at a car or truck. Look at it from the outside and from the inside. Look at it up close and far away.
4. Write down what you see. What color is it? How big is it? (use your tape measure) Does it look new or old? Does it have moving parts? Does it look neat? Is it rough or smooth? Use the chart on the next page to keep notes about what you see.



Keep notes about the things you see.

What did you see?	Where you live	Car or truck	Thing 1 (example)	Thing 2	Thing 3
What is it?			Table		
Color(s)			Brown		
Rough or smooth?			Smooth		
How tall?			18 inches		
How wide?			36 inches		
How deep?			24 inches		
Does it look new or old?			Old		
Moving parts?			No		
Is it neat?			Very neat		

Here are some questions:

Why is it important to look at things that you are going to model?

Did you see things that you didn't see before? _____

What?

Which thing would you most like to make? _____

Why?



Why Make a Model?

When you make a model, you will have fun. When you make a model, you will learn new skills. You will learn to watch things. You will learn to follow instructions. Best of all, you will find a hobby that can last the rest of your life. You may even build models when you grow up and go to work. Many jobs include model building. Engineers and architects

Activity 2 — Make a Plastic Model Kit

You will need these things before you start:

- A snap-together model kit
- A place where you live to lay out the pieces where they won't be lost.

Here is what to do:

1. Lay out all the pieces so you can see them.
2. Look at your instructions. Make sure you have all the parts in your instructions. If you don't, put the model back in the box, and return it to the place you bought it. If you have everything, go to step 3.
3. Now, read the directions to the end.
4. Now, once more — read the directions to the end.
5. Follow the directions and snap together your model.

Here are some questions:

Why did you check the parts? _____

Why did you read the directions? _____

Activity 3 – The World of Legos®

Items needed:

- Legos of all sizes and kinds



Here is what you do:

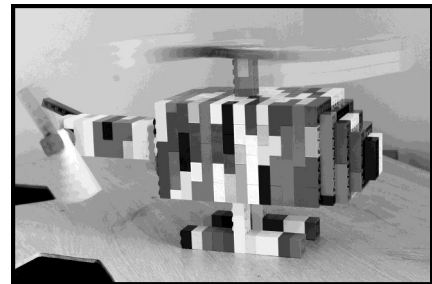
1. Spread out a bunch of Legos.®
2. Make 2 or 3 models of a larger item. Here are some ideas:
 - Car
 - Helicopter
 - Barn
 - Chair
 - House
 - Small town with 5 buildings
 - Fire Department building
 - School bus

Here are some questions:

What models did you make?

Which one was the hardest to make?

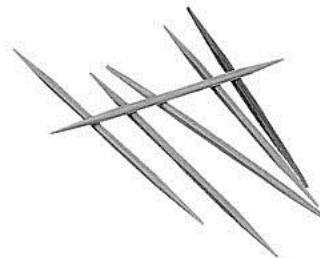
What other kind of Lego® models could you make?



Activity 4 — Toothpick Model

Items needed:

- Lots of toothpicks
- White school glue



Here is what to do:

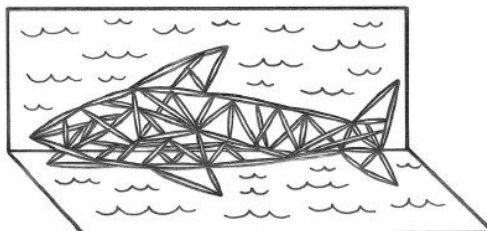
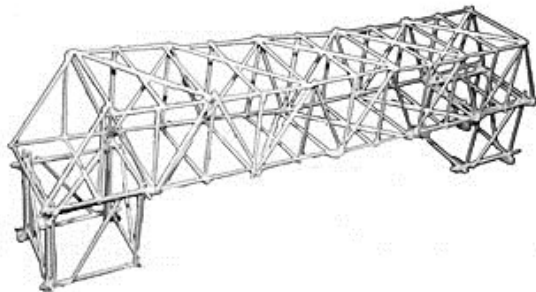
1. Decide what kind of model you can make with toothpicks.
Here's a hint: Toothpicks are straight. The model would need to have straight sides.
2. Make a model of a larger item, like a house or a barn.
3. Using a little bit of glue, put your model together.

Here are some questions:

Was this easy or hard to do? _____ Why? _____

Why did you use very little glue? _____

What happens if you use too much glue? _____



Different Kinds of Models

There are different kinds of models. Plastic models are fun and easy to do. Once you snap or glue them together, they look like the real thing. But there are other kinds of models.

Take a look around your house, your school, or the library. Do you see other kinds of models? Remember: Models are a small version of a real-life thing. What are these models made of?

Activity 5 — Other Models

Items needed:

- Pencil
- A shoebox
- Construction material (scrap paper, cloth, etc.)
- Glue
- Scissors

1 Here is what to do:

1. Pick a building or room. It could be your house, your school, or the local library. It's your choice!
2. Look around this building or room. What does it contain?
3. Make a model of the building or room.
4. Use construction paper, toothpicks — anything that will work — to build your furniture, carpet, chairs, etc. Don't worry about making the tiny items in the room (such as cups).



Activity 5, continued

Here are some questions:

What are some things you can find around the house to use in making a model?

What are some other things that you can use to make models? _____

What do you like to make models out of? _____

Begin Your First Model

The fun thing about making models is that you can make anything you want. There is not a right or wrong model.

Try making your first model out of something at home. This might be toothpicks, sticks, sugar cubes, playing cards, or anything else

that you can glue or stick together. A popular thing that many models are made of is clay or Play-Doh®.

Once you have some model-making experience, try a plastic model. But don't forget — you need to have an adult for permission!

So you know if, you'll have a room full of models!



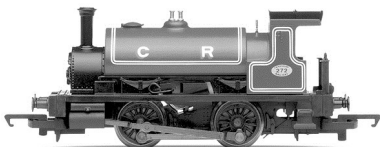


What Do I Exhibit?



Here is a list of projects that can be shown at the 4-H Fair. Pick one project you would like to try. Next year, choose a different exhibit. You do not have to make them in any order. If you have any questions, please call the Extension Office. There are people there who can help you.

- Make one snap-together plastic model. Do not glue or paint your model.
- Make a model using 2 to 4 different items of your choice. Examples: clay, toothpicks, sticks, ceramics, sugar cubes, etc.
- Visit a museum and look around at different models. Write a short report on your visit. Here are some things you might want to put in your report:
 - What kind of models did you see?
 - Ask someone who works at the museum how they build their models. Or do they buy the models already built?
 - What was your favorite model? Why did you like this model? How big was it? How big would the real-life item be?
- Make a model using as many different items of your choice. Make a model background to display your model. Example: Paint a shoe-box so that a plastic model car looks like it is driving down the road, across a field, through the water or the air.
- Make a model using any type of Lego's, Keep it simple and no larger than 10" X 10". Please Note: The use of the word "Lego" is used only as a guide for the project. You are free to use any brand of plastic snap-together or connecting pieces to complete your project.
- You are to complete the Mini 4-H Model or Lego-Type Model Record Sheet (included at the end of this manual) to turn in when you take your exhibit to the fair.
- You are encouraged to enter your exhibit at the Cass County 4-H Fair on Saturday prior to the start of the fair. You should enter your exhibit between the hours of 7:30 - 9a.m. Be sure to bring your Mini 4-H Model or Lego-Type Model Record Sheet.



Indiana Academic Standards

Following is a list of Science Standards that the activities in this book meet.

Kindergarten

K.1.2 Begin to demonstrate that everybody can do science.

K.3.1 Describe objects in terms of the materials they are made of, such as clay, cloth, paper, etc.

K.5.1 Use shapes, such as circles, squares, rectangles, and triangles, to describe different objects.

Grade 1

1.5.2 Make and use simple picture graphs to tell about observations.

1.6.1 Observe and describe that models, such as toys, are like the real things in some ways but different in others.

Grade 2

2.1.6 Use tools to investigate, observe, measure, design, and build things.

2.2.4 Assemble, describe, take apart, and/or reassemble constructions using such things as interlocking blocks and erector sets. Sometimes pictures or words may be used as a reference.

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Resources and References

Mini 4-H Model Building Manual, Madison County
Mini 4-H Model Building Manual, Delaware County
Mini 4-H Models Manual, Blackford County
Wild Adventures, Rush County

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MINI 4-H MODELS RECORD SHEET

BRING THIS RECORD SHEET WITH YOUR MODEL EXHIBIT TO THE FAIR.

NAME _____

YEAR IN MINI 4-H MODEL PROJECT (circle) 1st or 2nd

GRADE IN SCHOOL _____

1. WHAT DID YOU LEARN THE MOST FROM YOUR MINI 4-H MODELS PROJECT?

2. HOW LONG DID IT TAKE YOU TO FINISH YOUR MINI 4-H MODELS PROJECT?

3. WHO HELPED YOU WITH YOUR MINI 4-H MODELS PROJECT?

4. HOW DID THEY HELP YOU?

5. DESCRIBE THE MODEL YOU BUILT.

Leader Signature _____ Date _____

MINI 4-H LEGO-TYPE MODELS RECORD SHEET

BRING THIS RECORD SHEET WITH YOUR MODEL EXHIBIT TO THE FAIR.

NAME _____

YEAR IN MINI 4-H LEGO-TYPE MODEL PROJECT (circle) 1st or 2nd

GRADE IN SCHOOL _____

1. WHAT DID YOU LEARN THE MOST FROM YOUR MINI 4-H LEGO-TYPE MODELS PROJECT?

2. HOW LONG DID IT TAKE YOU TO FINISH YOUR MINI 4-H LEGO-TYPE MODELS PROJECT?

3. WHO HELPED YOU WITH YOUR MINI 4-H LEGO-TYPE MODELS PROJECT?

4. HOW DID THEY HELP YOU?

5. DESCRIBE THE LEGO-TYPE MODEL YOU BUILT.

Leader Signature _____ Date _____

MINI 4-H MODELS RECORD SHEET

BRING THIS RECORD SHEET WITH YOUR MODEL EXHIBIT TO THE FAIR.

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YEAR IN MINI 4-H MODEL PROJECT (circle) 1st or 2nd

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3. WHO HELPED YOU WITH YOUR MINI 4-H MODELS PROJECT?

4. HOW DID THEY HELP YOU?

5. DESCRIBE THE MODEL YOU BUILT.

Leader Signature _____ Date _____

MINI 4-H LEGO-TYPE MODELS RECORD SHEET

BRING THIS RECORD SHEET WITH YOUR MODEL EXHIBIT TO THE FAIR.

NAME _____

YEAR IN MINI 4-H LEGO-TYPE MODEL PROJECT (circle) 1st or 2nd

GRADE IN SCHOOL _____

1. WHAT DID YOU LEARN THE MOST FROM YOUR MINI 4-H LEGO-TYPE MODELS PROJECT?

2. HOW LONG DID IT TAKE YOU TO FINISH YOUR MINI 4-H LEGO-TYPE MODELS PROJECT?

3. WHO HELPED YOU WITH YOUR MINI 4-H LEGO-TYPE MODELS PROJECT?

4. HOW DID THEY HELP YOU?

5. DESCRIBE THE LEGO-TYPE MODEL YOU BUILT.

Leader Signature _____ Date _____

