

DISCOVERING



4-H



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This book belongs to _____

Who is a member of the _____ 4-H Club.

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.



THE 4-H EMBLEM

A GREEN four-leaf clover with a WHITE H in each leaf.

4-H'ers learn by doing.

The motto is:

"TO MAKE THE BEST BETTER."

Hello! My name is 4-H Freddy. Welcome to 4-H. This is your book called *Discovering 4-H*. It will help you decide which 4-H projects you would like to take. These are all of the activities you can do!



_____ Food & Nutrition

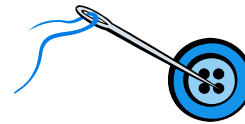
_____ Child & Family Development



Smart Shopping _____



Photography _____



Sewing _____



_____ Forestry



_____ Animals



_____ Plants & Flowers



_____ Safety First



_____ Insects

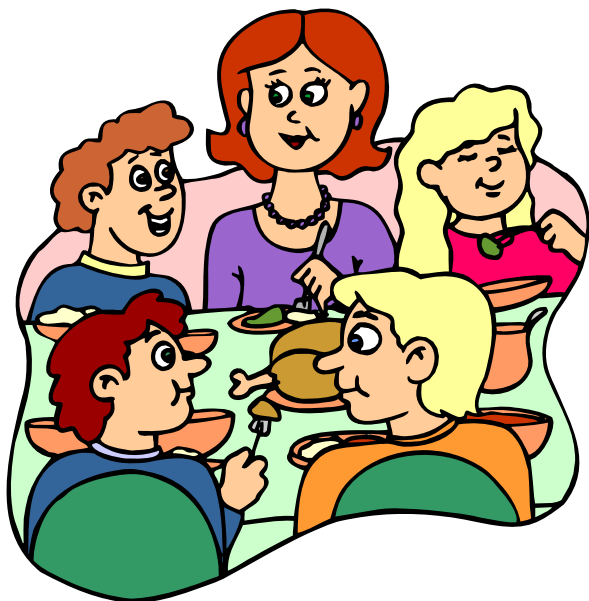
Explore some of these activities. This will help you decide which 4-H projects you will want to take in the future. 4-H will be fun, and you will learn how to do lots of new things. To complete the *Discovering 4-H* project, you must explore five of the above activities. Check (✓) the topics as you decide which activities to do. After you complete an activity, fill in the "Discoverer's Report" at the back of this book. You don't have to do the "Dig Deeper" part at the end of some sections. "Dig Deeper" gives ideas for extra things to explore, only if you want to. What if you want to do all the projects? That's OK too. Ready to explore? Follow me to discover 4-H.



What is Nutrition?

Nutrition is the food you eat and how your body uses it.

Your body is an amazing machine! When you eat food, your body breaks down the food into parts it can use. These parts are called *nutrients*. They help you stay healthy. How? Some nutrients give you energy, and some help you grow. Others give you strong bones and teeth, while others keep your skin, hair, and eyesight healthy. Water is one of the nutrients. It carries nutrients to your cells and carries waste away. Water also keeps your body at the right temperature. If you eat a lot of different healthy foods, you should get all the nutrients you need. Foods are grouped based on the nutrients they have. The Food groups are: Grains, Fruits, Vegetables, Milk, cereals, and Meats and Beans. They are all important. Since no one food has all the nutrients, its important to eat a variety of foods, from each group.



Explore a New Taste!

Try tasting one new vegetable that you have never tasted before.

What is it?

How did it taste?

Name 2 breads or cereals that you like:

1. _____

2. _____

Name 2 meat or bean foods that you like:

1. _____

2. _____

Crunch! Yum!

The Food Guide Pyramid provides you a rainbow of colors to remember foods you should eat each day. All foods that make you healthy belong in one (or more) of the basic food groups. Each day you need:

- 6 ounces of **Grains (orange)**
- 1 $\frac{1}{2}$ cups of **Vegetables (green)**
- 1 $\frac{1}{2}$ cups of **Fruits (red)**
- 2 cups of **Milk products (blue)**
- 4 ounces of **Meat or Beans (purple)**

So, the rule is to eat a variety of foods from each food group every day. Being active every day will also help you stay healthy and strong. Try for at least 60 minutes of activity each day that makes your breathe hard, just like the climbing the steps of the pyramid!



You also need about 4 teaspoons of **healthy oils (yellow)**; you probably get these from the other foods you eat.

List some foods you ate today:

What food group you think they are:

I ate foods from each food/color group. Yes ____ No ____



Let's go shopping! The name of the grocery store where my family shops is? _____

Visit your local grocery store and fill in the chart below. Overhead aisle signs help you find different foods. Add other items to the list that you might purchase.

Food	Food Group	Department	Aisle No.
Apple	Fruit	Produce	1
Chicken			
Milk			
Corn Flakes			

Who wants a snack?

Most people think snacks are bad for them. A lot of snacks have only “empty” calories, but you can choose good-tasting snacks that give your body nutrients (protein, carbohydrates, fat, vitamins, and minerals).

What snacks are good for you?

Oh, lots! Fruits, peanut butter, raw carrots, cottage cheese, fruit sundaes....Here are examples of two snacks that taste, smell, and look good. They also have nutrients your body needs to be healthy. Try making these two healthy snacks.

Fruit Juice Shake	Frozen Banana Pops
<p>What you need:</p> <ul style="list-style-type: none"> ✓ 1 glass orange juice (or other fruit juice) ✓ 1 scoop ice cream (or sherbert) <p>What you do:</p> <ul style="list-style-type: none"> • Put juice and ice cream in a jar. • Shake well. • Pour into a glass and • serve with a straw or a spoon. <p>Write the date you made this snack.</p> <p>_____</p> <p>How did it taste?</p> <p>_____</p> <p>Did you share this snack with anyone? _____</p> <p>Who? _____</p>	<p>What you need:</p> <ul style="list-style-type: none"> ✓ Bananas and popsicle sticks ✓ Frozen orange juice (don't add water) ✓ Chopped nuts or wheat germ. <p>What you do:</p> <ul style="list-style-type: none"> • Peel bananas and cut in half. • Insert popsicle stick into each half. • Dip banana in orange juice, then roll in nuts or wheat germ. • Freeze. <p>Write the date you made this snack.</p> <p>_____</p> <p>How did it taste?</p> <p>_____</p> <p>Did you share this snack with anyone? _____</p> <p>Who? _____</p>



If you enjoyed these activities you may want to do a 4-H Food and Nutrition project next year!

Child & Family Development ⁷

Child development is the study and understanding of human changes from childhood through adolescence. The four general areas of study in child development are:

- Physical
- Emotional
- Social
- Cognitive



Areas of Child Development

Physical development studies the growth and development of our body. A fun activity that you and your parents or older sibling could do is measure and record your growth in height for each month for one year.



Another area of child development is **emotional** growth. This involves our ability to understand and express emotion, such as happiness, anger, fear, excitement, and love. Here's another fun activity, determine the emotion of each picture below and create a story to explain why they are feeling that way.

Other Areas of Development

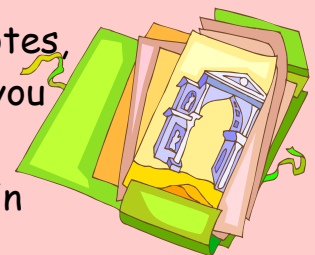
Cognitive: Mental growth, including thinking, solving problems, and learning.

Social: growth in the ability to interact and relate to others.



Your Portfolio

A portfolio is a folder or a book where you save your notes, drawings, pictures, and photography. In order to help you measure what you have learned or are learning, save all your notes, drawings, and pictures of this project book in "Your" portfolio.

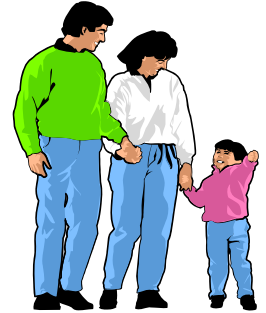




That Hat's for Me



At home my mom does most of the cooking, laundry, and cleaning. While my dad and older brother do most of the yard work, make sure the cars are running well, and fix all the broken appliances around the house. These are some of the *responsibilities* that my parents and sibling have. What are some of your *responsibilities* or chores?

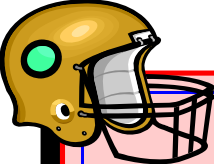
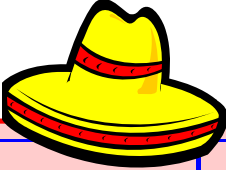
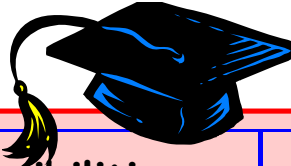

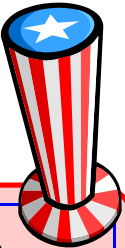



You may have several *responsibilities* because you have many roles or wear many "Hats." In the box below, circle the roles that apply to you. If you have other roles, add them to the to the list.

Roles in My Life

Athlete	Grandchild	Niece
Brother	Leader	Pet owner
Cousin	Member	Sister
Daughter	Neighbor	Son
Friend	Nephew	Student
Teacher	Musician	_____
_____	_____	_____

On the chart below, list three of your roles, along with the *responsibilities* or duties that goes along with them. In the third column, draw a 'Role Hat' that represents your role. There is an example done for you to follow.

 Roles	   Responsibilities or Actions	 Role Hat
1. Examples: Baseball team member	1 st Base. I stop the other team from getting on base.	
2.		
3.		

Dig Deeper

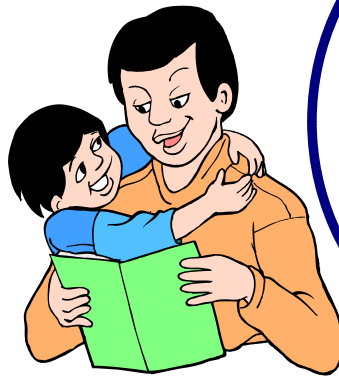
Here is a fun game that you and your friends could play. First, collect several different kinds of hats. Next, divide yourselves in two teams (flip a coin to see which team goes first). Now team one chooses a hat. Then they pick someone from team two to act out the role. Each team will take turns acting out roles. For each role properly acted out, the team acting it out gets a point. The team, with most points at the end of the game, wins.



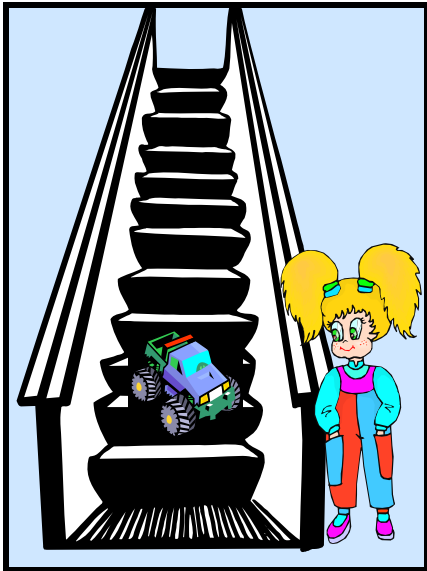
Home Hazard Hunt

The goal of this activity is to teach you how to keep yourself and your family safe.

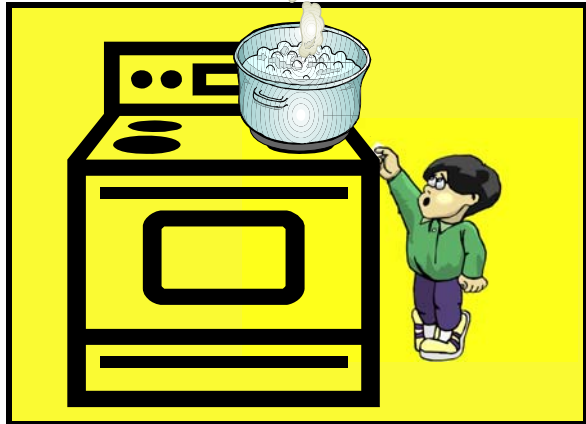
It is important to be able to identify and correct any potential hazards in our home. Every day hundreds of injuries occur in different homes. These injuries could have been prevented if the proper safety measures had been taken.



Identify and circle all of the potential hazards in each picture. Discuss with the other students or your volunteer what makes each scene hazardous and what should be done to make each home safer.



What hazards do you see?



1. What hazards did you find in each picture?

A *For example: The toy on the stairs* **B** _____

C _____ **D** _____

2. Why is each a hazard?

A *For example: The toy is a hazard because, someone could trip and fall and possibly hurt themselves.*

B _____

C _____

D _____

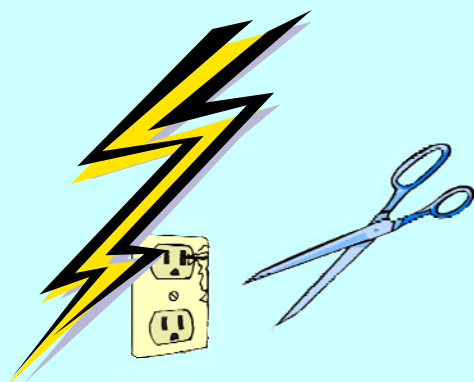
3. What would you change in each picture, to make each home safer?

A *For example: After playing with your toys, put them in a safe area.*

B _____

C _____

D _____



Dig Deeper

Make a list of all the possible hazards in your bedroom, kitchen, living room, and the other rooms in your house. Discuss them with your parents. Then come up with ideas to change them, in order to make your home safer.



If you liked these activities, you may want to do a **Child and Family Development Project!**

Smart Shopping

When you get money, does it burn a hole in your pocket or does it just fly away? Does your mother say that you can't hold onto your money? If she does, you need to learn to be a smart shopper.



Smart shoppers know how to take care of their money. When they spend their money, they get more for it. Do you know that you are a consumer? A **Consumer** is a person who buys and uses things made by other people.



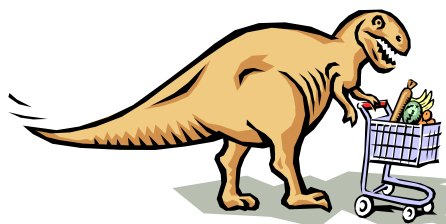
What are things that you use each day that must be bought?

_____	_____
_____	_____
_____	_____
_____	_____

What are things that *you* buy?

_____	_____
_____	_____
_____	_____

Are you a **Consumer**?



Let's Go Shopping For Balloons

Remember:
It is important to read the package labels.

1. What kinds of stores do you think sell balloons?

2. How much do you think they cost?

Go to a store and ask the price of a package of balloons. Do they cost what you thought?

3. Go to another store and price the balloons.

Are the prices different?

Are they the same balloons?

Do the packages have the same number or balloons?

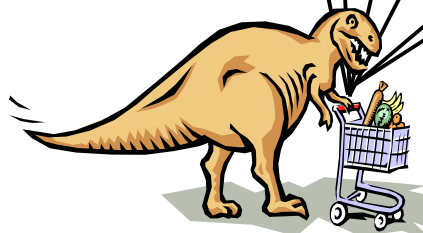
4. If you were going to buy balloons where would you buy them?

Why?

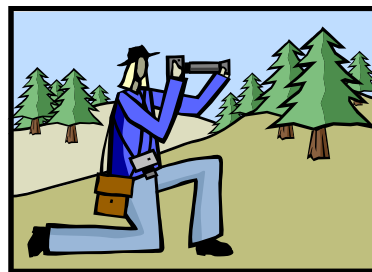
Often you save money by comparing prices at different stores. This is called **comparison shopping**.

Did you like these activities?

If so, you may want to do a Consumer Education project next year!



Nature Photography



We all love outdoor adventure. Swimming, hiking, camping, cooking a meal in the open, and looking for birds, flowers, or insects are just a few of many outdoor adventures. You can explore the outdoors on field trips where you can see, hear, and understand some of the wonders of nature. You may wish to take a simple camera with you on the trips so you can take a few pictures of the beauty of nature or other interesting things you see.

ONE OF NATURE'S WONDERS

On your field trip, you will want to observe the beauty of nature. Make a list of some of nature's wonders that you may want to photograph.

1. _____ 2. _____

3. _____ 4. _____

PRACTICE

Before you go out with your camera, be sure to have someone show you the best way to use it. You need to know how to load and hold the camera, how to use the viewfinder, and how to snap a picture.

MAKE A LIST

List some things with interesting shapes or colors you will want to photograph.

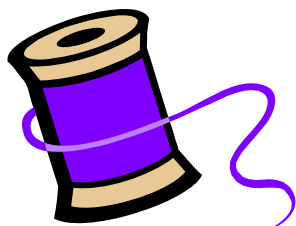
1. _____ 2. _____

3. _____ 4. _____

Think about how objects will look in the viewfinder and how you want your picture to look. Consider this before you take a picture. Be sure you include some pictures of the projects you complete this year. Include them in your project report. If you select photography for your project next year, you will learn how a camera operates and how to take better pictures.



If you had fun doing these activities, you may want to do a Photography project next year.



Sewing

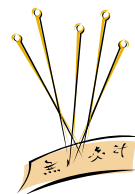
The Clothing Project will teach you to sew by hand, or if you like, how to use a sewing machine. Before you can sew, you will need some special tools. You will also need a box to help you keep them in one place.



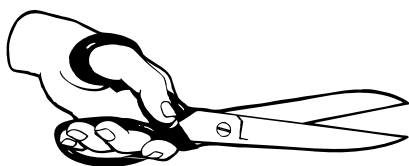
Box
select a strong one,
such as a shoe box.



Pin cushion
helps you keep your
pins where you can
find them.



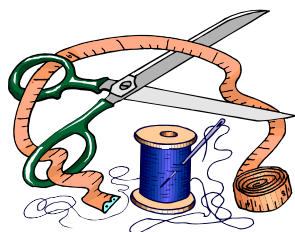
Needles
are used to stitch fabrics together.
They come in different types and
sizes. *Crewels* have a longer eye, so
they are easier to thread. Sizes 7 to
9 are a good choices for a
beginner.



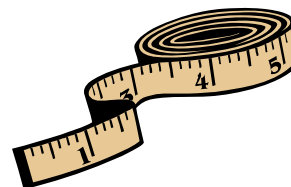
Shears
5 to 6 inch blades on shears are
a good size. Be sure they cut
fabric!



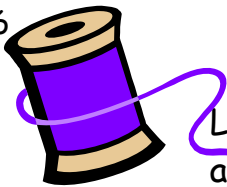
Thimble
is used to push the needle
through the fabric



Tape Measure
is 60 inches long and used for
body measurements and is
made of plastic or treated
fabric with metal tips.



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LET'S PRACTICE

Let's practice before beginning a project. You will need a spool of thread, a needle, and some scraps of fabric.

1. HOW TO THREAD A NEEDLE

- ✂ Cut a piece of thread about 18 inches (46 cm) long. Breaking the thread leaves fuzzy ends; these will not go through the needle easily.
- ✂ Grasp the needle between thumb and finger.
- ✂ Brace one hand against the other hand.
- ✂ Push thread through the hole. Moisten behind the eye of the needle, if needed. This helps pull the thread through.



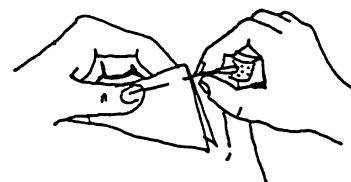
2. HOW TO TIE A KNOT

- ✂ Wrap one end of thread around forefinger.
- ✂ Allow about 1/4 inch (6mm) lap over of thread.
- ✂ With thumb, "roll" these threads together.
- ✂ Slip loop off finger and pull to end of thread.



3. HOW TO USE A THIMBLE

- ✂ Place on the middle finger of the hand that holds the needle.
- ✂ Hold needle between thumb and first finger.
- ✂ Put needle into fabric.
- ✂ Push through, using the side or end of the thimble.



4. HOW TO HAND BASTE

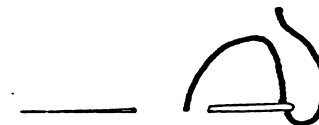
- ✂ Basting stitches hold fabrics together temporarily. Then, they are removed.
- ✂ Go in and out through fabric layers.
- ✂ Each stitch is 1/4 or 1/2 inch (6 mm or 1.3cm) long.

5. HOW TO BACKSTITCH

- ✂ Backstitches are permanent stitches. They look like machine stitches.



- ✂ Bring needle through top layer of fabric.
- ✂ Stick needle into fabric 1/8 inch (3 mm) behind and forward 1/4 inch (6mm).
- ✂ Repeat. Take a half backstitch (1/8 inch or 3 mm back) and a full forward stitch (1/4 inch or 6 mm).
- ✂ Then forward 1/4 inch (6mm) and through the top layer of fabric.
- ✂ After you have practiced, start making them small as machine stitches.

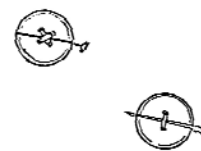


6. HOW TO FASTEN THE END OF HAND STITCHING

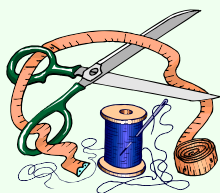
- ✂ Take a very small stitch and put your needle through the loop.
- ✂ Repeat two more times.
- ✂ Cut thread $\frac{1}{2}$ inch (1.3 cm) from knots.

7. SEWING ON A BUTTON

- ✂ Make a short stitch in fabric.
- ✂ Bring needle up through one hole. Now go down through other hole and fabric.
- ✂ Place a pin or toothpick across button between stitches. (This keeps you from sewing the button on too tight.)
- ✂ Make six to eight stitches through the button.
- ✂ Remove pin or toothpick. Lift button up and wind thread around the stitches. This makes a shank.
- ✂ Fasten thread.
- ✂ Cut thread.



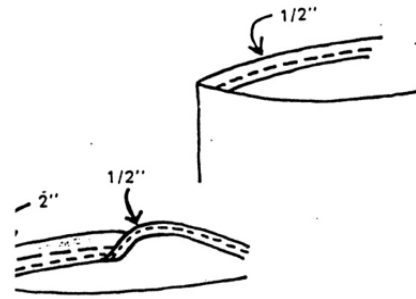
LET'S MAKE A SAMPLE CLOTH: Use scraps of woven fabric.



1. Do a hand basting
2. Do the backstitch.
3. Sew on a button
4. Fasten end of hand stitching.

LET'S MAKE A TOTE BAG

A tote bag is handy to carry school supplies or to use as a beach bag.



What Is Needed

- 1/3 yard of 36-inch fabric
- Suggested fabric: denim, poplin, canvas, or sailcloth
- Thread of matching color
- 2 1/2 yards of 1/2-inch cotton braid

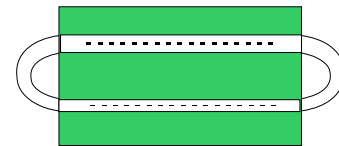


What To Do

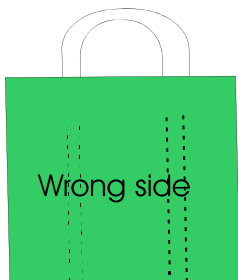
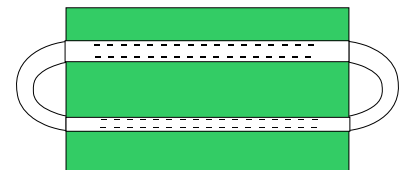
1. Straighten cut edges of fabric.



2. Center the braid, as shown, on the right side of the fabric. Make sure the handles are the same length. Fold under end of braid 2 1/2" from edge.

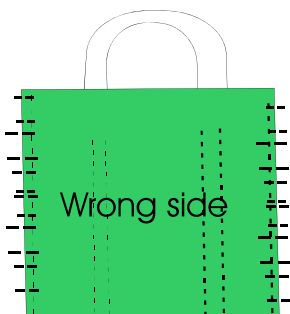
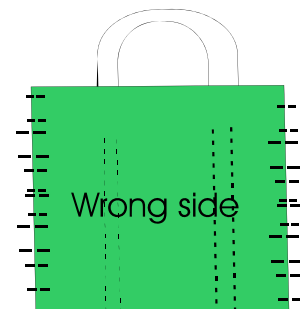


3. Hand baste, stopping 4 inches (10 cm) from each edge.



4. Machine stitch or hand backstitch along each edge of the braid, stopping 4 inches (10 cm) from each edge. Remove bastings.

5. Place right sides of fabric together to form a rectangle.



6. On each side pin through fabric layers along cut edges, as shown.

7. Stitch 5/8-inch (1.5 cm) seam on each side.

8. Stitch again at 3/8 inch (1 cm). Remove pins as you come to them. Do not stitch over pins.

9. At top edge fold over $\frac{1}{2}$ inch (1.3 cm) to wrong side.

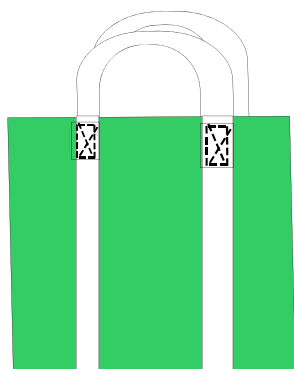
10. Hand baste.

11. Fold again 2 inches (5 cm).

12. Hand baste.

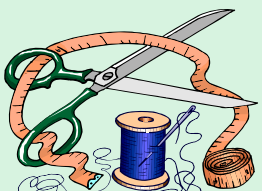
13. Machine stitch or hand backstitch close to edge, as shown. Remove bastings.

14. Position and hand baste braid remainder of distance to top edge.



15. Stitch along each side.

16. Reinforce at top by stitching a square and a X, as shown. Remove bastings.



Dig Deeper

Put a check in the boxes when you have done these small tasks. (Write in how many buttons.)

I sewed up a rip. <input type="checkbox"/>	I sewed on _____ buttons. <input type="checkbox"/>
I fixed a hem. <input type="checkbox"/>	I sewed one small project (i.e.: bean bag, tote bag) <input type="checkbox"/>



If you enjoyed this project, you may want to do a Clothing Construction project next year.

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Forestry



Forestry deals with the planting, growing, and caring for trees. A forest is described as a large, thick group of trees. There are many different types of forests. For example: Rainforests, Mangrove, Bamboo forests, Conifer forests, and Deciduous forests.

Forests can be classified based on the environment they are grown in, the type of trees grown, and the type of stems, roots, and branches they have. For example, mangrove forests grow in muddy areas. Some mangrove trees have long roots which holds them to the ground, and others have long stems attached to the roots. Mangroves can be seen in South Florida, the Florida Keys, and other areas with muddy soil.

Another, popular forest in Florida is the conifer forest. Conifer forests, also know as pine forests, have trees that reach more than 20 meters in height and 50 to 60 centimeter wide. The longleaf pine tree has long needles and thick cones.



- Have you every seen a forest before? _____.
- Where did you see it? _____.
- Were you able to identify what type of forest it was ? If so what type of forest was it? _____

Find and circle these words in the 'seek and find' puzzle below.

- | | | | |
|---------------|--------------|----------|------------|
| Bamboo forest | Cabbage Palm | Longleaf | Palm tree |
| Bark | Conifer | Live oak | Pine tree |
| Branch | Deciduous | Mangrove | Rainforest |
| Bud | Forestry | Magnolia | Trees |

B	D	E	C	I	D	U	O	U	S	P	C
A	U	O	O	T	E	R	E	A	U	A	A
M	B	F	N	H	C	N	A	R	B	L	B
B	E	A	I	M	O	H	G	B	N	M	T
O	V	E	F	L	N	R	A	A	O	T	S
O	O	L	E	I	I	G	M	R	Y	R	E
F	R	G	R	S	E	O	A	K	P	E	R
O	G	N	L	P	A	L	M	T	R	E	O
R	N	O	A	Y	R	T	S	E	R	O	F
E	A	L	I	V	E	O	A	K	E	C	N
S	M	A	G	N	O	L	I	A	S	E	I
T	R	E	E	S	R	A	I	A	T	D	A
S	E	E	R	T	E	N	I	P	A	L	R

As stated before, a forest is a thick group of trees. Trees are very special plants. They are the tallest living things on our planet. We use trees in many different ways: for shade, climbing, wood, paper, and for making our communities beautiful.

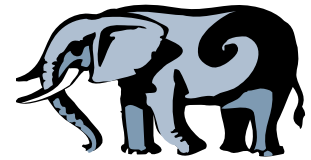
Do you have a favorite tree? _____ Do you know what kind of tree it is (for example, it could be a fruit tree or pine tree) _____.



If you are interested in learning more about the wonderful world of forests and trees and how they are important, you should consider doing a Forestry project.



Animal World



How do animals fit into our lives?

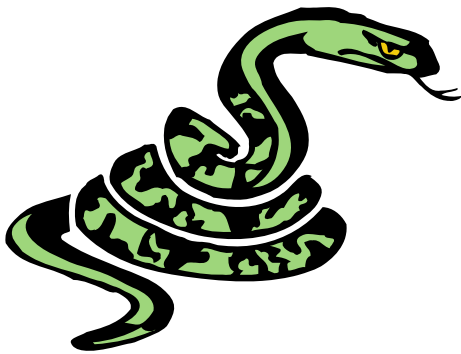
Many families keep animals in the house as pets. Dogs, cats, hamsters, birds, and fish make good pets. Do you have a pet? If you do, what kind of animal is it?

Your pet's name is _____.

Your pet is a _____ male _____ female.

Animals are living things. There are over one million *species* (kinds) of animals in the world. Some are warm-blooded animals.

Others are cold-blooded. Reptiles, fish, and amphibians are cold-blooded because their body temperatures change with the temperature of the air or water in which they live.



Name four cold-blooded animals:

1. _____

2. _____

3. _____

4. _____

Normal temperatures of some warm-blooded animals are:

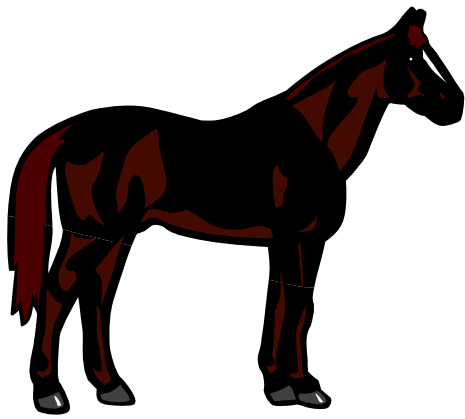
- Humans: 98.6 degrees F
- Cow 101.5 degrees F
- Horse 100 degrees F
- Chicken 104 degrees F

Mammals and birds are warm-blooded. Their body temperature is about the same at all times. A large change in temperature means they are sick.

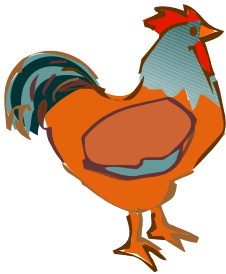
Believe it or not, some scientists believe that animals have changed in appearance over several million years. They tell us that the common pet dog developed from a wild, wolf-like animal.

List four ways a pet dog may still be like a wolf:

1. _____
2. _____
3. _____
4. _____



These scientists also believe that the horse developed from a small dog-like animal. They say the earliest horses had padded feet with toes, short legs, and a slender body. Today they have one hoof on each foot, long slender legs (for speed) and large bodies.



Some animals live on farms. Farm animals are raised for food and products that we need in our lives. Hogs and almost all other farm animals produce meat. Cows also give milk. Chickens lay eggs, and sheep supply wool. Can you name other products that comes from farm animals?

1. _____
2. _____

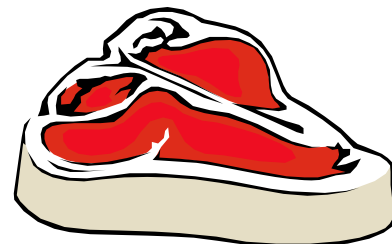
When you visit a grocery store meat counter, notice the different cuts of meat that come from farm animals.

What is your favorite cut of meat from these animals:

Chicken (poultry) _____,

Hog (pork) _____,

Cow (beef) _____.



HEARTBEAT

A heartbeat is made by blood being pumped through the heart. The rate of speed of the blood pumping through the heart is called the pulse rate. You can hear heartbeats, and you can count them to find the pulse rate. Listen to an animal's heart and count its heartbeats for one minute. A veterinarian uses an instrument called a *stethoscope* to listen to an animal's heartbeat, but you can put your hand or your ear close to the animal's heart. How many heartbeats did you count? _____

What animal? _____

Heartbeat rates for adult animals:

Horse 32 to 44 beats per minute, Dog 70 to 120 beats per minute, Cat 110 to 130 beats per minute, Pig 60 to 80 beats per minute. Do large or small animals have faster heartbeats?

Care for and Learn About an Animal

The animal you choose can be your own or



it can belong to a neighbor. It can be a mammal or a bird. The type of animal I selected to study is a (an)

_____.

It is a: ___ Pet ___ Farm animal.

It's weight is _(pounds or ounces).

It's age is _____.

Its temperature is _____degrees F.

Its heartbeat is about _____times per minute. My animal's food is made up of_____.

(You may want to visit a pet shop or feed store. Learn what is in the food by looking at the package.)

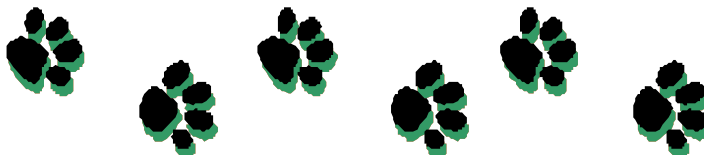
Animal hunt. Circle the 19 animal words in the puzzle below.

Equine	Swine	Horse	Rabbit
Poultry	Rodent	Canine	Duck
Mice	Hog	Hen	Sheep
Beef	Goat	Dogs	Cat
Ham	Avian	Pig	

E Q U I N E S W I N E
 R R O B H O R S E P H
 P A V I A N C K B I A
 O B T R E D C A T G M
 U B Q D Y I R D O G S
 L I P N H T W I K O T
 T T O C L O L M L A E
 R P M I C E G N B T R
 Y Z G D U C K H E N Z
 R O D E N T S H E E P
 C A N I N E S T F V W

Dig Deeper

Special Dig Deeper Reference: Your Local Veterinarian



⇒ Care for, groom, and show an animal in a 4-H show.... or...

⇒ Attend a judging workshop or contest for livestock, poultry, horse, or dairy judging.... or...

⇒ Make an exhibit or bulletin board for public display (examples: fair, store window, school) or...

⇒ Make a collection of animal prints (footprints in plaster of paris) and show them to your 4-H club or...

⇒ Read about the diseases that can affect your animal or any other area of the animal world and make a report to your club or leader.

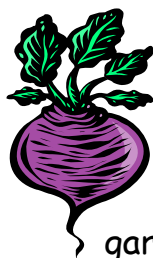


Don't forget to use your local veterinarian as a reference. Write down some questions you would like to ask your veterinarian that would help you with your Dig Deeper activity.



If you liked these activities about animals, you may want to select one of the many 4-H Animal projects next year!





Plants and Flowers



Your mother or father may grow houseplants inside your home. Outside your home you walk and play on the grass, climb trees, and see many flowers and shrubs. We use plants and parts of plants for food. You may have a garden where you grow many kinds of plants for food. Plants grow most everywhere.



A lot of the foods we eat comes from plants. Orange juice, bread, salad, types of oil, and even chocolate is made from parts of plants. Think of foods that you eat. What plant parts are used to make that food? Think of seeds, leaves, fruit, or roots of plants that you eat. Write down as many as you can.

Seeds	Leaves	Fruit	Roots
			
sunflower seeds	lettuce	apple	carrot



Not all plants are useful. Plants which are not useful or which grow out of place are called *weeds*. Examples of weeds are the sandspurs in our lawns or the crabgrass in our gardens. Weeds rob the soil of water and often shade useful plants, making it difficult for them to grow.

Dig Deeper

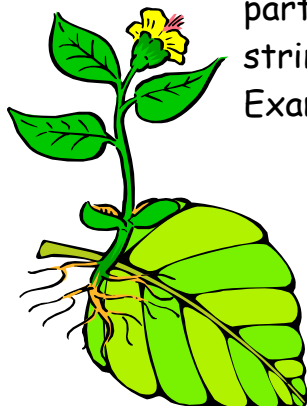
Here are some suggestions for plant projects that you can do on your own.



- ☀ Plant a flower bed at home
- ☀ Start tomato plants indoors
- ☀ Collect, identify, and mount 5-10 tree leaves.

Comparing Plants

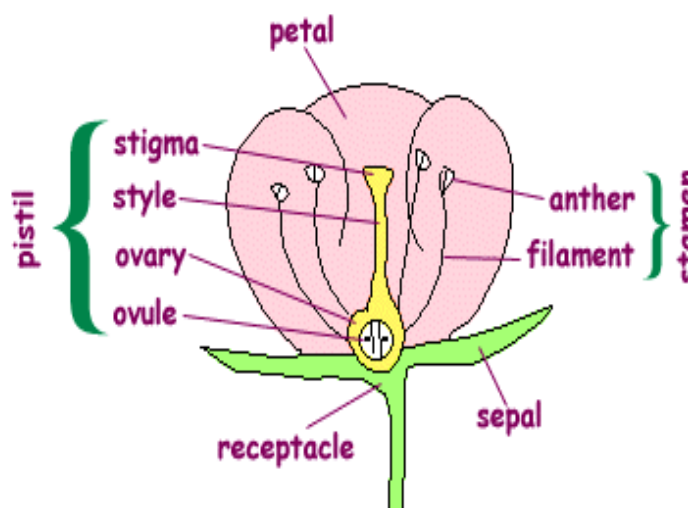
Let us compare two plants: a radish and a grass plant. Notice the roots of each. The radish has a *tap root* much like a bulb - the part of the radish we eat. The grass plant has a stringy root system, which is called *fibrous root*.



Examine the leaves. Cut across the stem and note the tiny hollow areas. These are easier to see in the radish than in the grass stem. They are tiny tubes which carry water and minerals from the root of the plant to the leaves. They also carry food from the leaves back to the roots. The leaf is the plant's food factory. Water and minerals from the soil with the help of air and sunlight are changed in the leaf to plant food (a type of sugar). This sugar is then sent back to other parts of the plant. In the radish, food is stored in the tap root and becomes part of it. Some plants store food in their leaves, some in stems and some in fruits.

Flowers

The job of flowers is to produce seeds which grow into plants the next year. The *stamen* is the male part of the flower and the *pistil* is the female part of the flower. The stamen produces pollen, which must reach the *stigma* of the pistil in order to pollinate the flower. Slowly take a flower apart to find the pistil and stamen.



If you enjoyed learning about plants, you may want to do a 4H plant project.



Safety First



"To make the best better"

You will hear that many times in 4-H. To make the best better, safety must be a part of your 4-H work. To do the 4-H project or activity better, you must do it safely. Not to do the 4-H project or activity safely means you might have an accident. Have you ever had an accident? If so, you know it can make you have a bad day. Whatever your 4-H project or activity might be, safety should play an important part.

Safety first prevents:

- ★ Injuries with your horse, pig, or other animal projects.
- ★ Accidents when you are cooking, sewing, or baking.
- ★ Cuts, burns, bruises, broken bones, and all other kinds of "hurts" from hand and power tools.
- ★ Problems when you are babysitting.
- ★ Visits to the doctors or hospitals as a result of an accident or injury while swimming, boating, hiking, bicycling, hunting, working, or playing.



Safety makes the best better. So when you sign up for any 4-H project or activity, ask your leader for a 4-H safety record book.



SEAT BELT SAFETY



**"I always wear my seat belt when I ride in the car.
It's the only safe way to ride."**

Imagine yourself walking quickly along, not looking where you are going. BOOM! You crash into a wall, ouch! It wouldn't feel too good. You might even bruise your nose. Now imagine the same sort of accident, but you're in a car going 30 miles an hour and you aren't wearing your seat belt. When that car crashes, you would crash into the dashboard of the car much harder that you crashed into the wall while walking. You would end up with much worse that a bruised nose. You might even break a bone, or even worse. If you were securely fastened to the car's seat with a seat belt, you would be much more likely to survive a bad crash, or be uninjured in a minor crash.



**In a bad accident the safest place to be is:
INSIDE THE CAR!**

When a car crashes, the people are often thrown right through the windshield or out the doors and windows. Thrown out on to what? Usually, other cars, telephone poles, trees, or cement.

Seat belts keep you in place, so they keep you from flying out of the car. They also keep your head from hitting the car's dashboard. They save you from many kinds of injuries, and they will save your life in a bad crash.

Name some people you know who do wear their seat belts:

1. _____
2. _____
3. _____

Name some people you know who do NOT wear their seat belts:

1. _____
2. _____
3. _____

Tell the people who do not wear their seat belts what you have learned about seat belt safety. How would you talk them into wearing their safety belts?

Put safety in your 4-H project. There are many other things you can do with safety. You can conduct fire, poison, and safety inspections of your home or farm. You can have community services or community pride projects on safety. You can have safe bicycle rodeos, horseback riding rodeos, etc. You can develop leadership by suggesting, planning and conducting club or community safety programs.

- ✦ You can have meetings and programs on all kinds of safety subjects.
- ✦ You can develop your confidence and speaking ability by giving 4-H safety demonstrations or speeches.
- ✦ You can promote 4-H with 4-H safety demonstrations or displays in shopping malls.
- ✦ You can earn money for your 4-H club and do a community service by selling smoke detectors, fire extinguishers, "first aid kits, or child restraint seats for cars. Do you have other ideas?
- ✦ You can win 4-H awards, recognition, and trips by making the "best better" and with safety. But, most importantly, by putting safety first, you can make the "best better" for you, your family, your club, and community.



Discover safety first, tell your 4-H leader that you want to sign up for a 4-H safety project.





Insects

What is an insect? The study of insects is called **entomology** and the person who studies them is called an **entomologist**.

But just what is an insect? First, we know that all living things are either plants or animals. After we have sorted things into plants or animals, we again group them based on the ways they are alike. Some animals such as man, birds, cows, and fish have backbones, but jellyfish, spiders, earthworms, and insects do not have backbones.



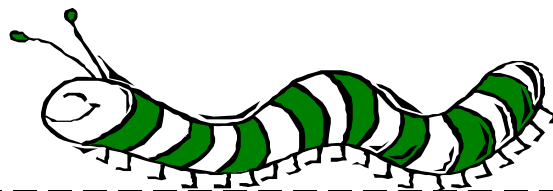
INSECTS ARE EVERYWHERE

There are more kinds of insects in the world than all other living things. Some are so small we need a microscope to see them. Others are several inches long. Insects live almost everywhere man travels in the world. You can find them in your backyard, garden or home.

Entomologists believe there are over one and one-half million different kinds of insects. They have found and named one million kinds.

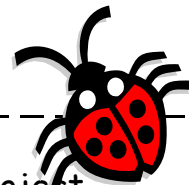
Insects differ so much in their habits that you can begin an insect project at any time.

Any 4-H member can do a 4-H entomology project. If you live in the country, you can study the open fields. If you live in the city, you can study parks and look up information in the library. If you do not live near a library, spend your time collecting and observing insects.



Insects are small animals that:

1. Do not have a backbone
2. Have body covered by a hard shell or external skeleton
3. Have three body regions- the head, thorax, and abdomen
4. Have three pairs of jointed legs
5. Have one pair of antennae (feelers)
6. May have either no wings or one or two pairs of wings
7. Usually have compound eyes



WHERE TO LOOK FOR INSECTS

- ✦ Around street lights, porch lights, and lamps.
- ✦ On a wide variety of plants, both day and night
- ✦ In woodpiles, especially in spring and early summer.
- ✦ In the soil.
- ✦ Along the edges of rivers, streams, lakes, or ponds, and in the water.
- ✦ In the air on warm days from early spring to late fall for flying insects.
- ✦ On (or in) fresh or decaying fruit.
- ✦ Check pets or farm animals for insects such as fleas and lice.
- ✦ In buildings, windows, flour bins, cereal packages, closets, or boxes where clothing and old papers are stored.



You should learn what:

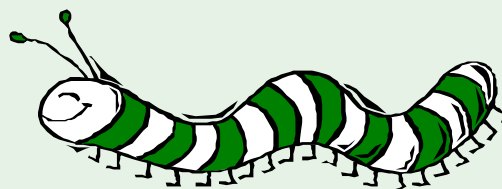
- ✍ Entomology is.
- ✍ An insect is.
- ✍ Body parts of insects

Discover More About Insects

What do you know about insects?

1. Do all insects have wings? _____
2. Are all insects bad? _____
3. Name some helpful insects.

4. Is a spider an insect? _____ Why? _____
5. Many baby insects are called larvae (caterpillars, grubs, worms, maggots). Find one. How is it different from the adult? _____
6. In what ways are all insects alike? _____
7. Does a mosquito bite or sting? _____
8. Do you know what important diseases are carried by insects? _____



Need Help?

Your local extension agents can help you start an entomology project. They can give you materials and other aids. They can also tell you who could help you in your community.



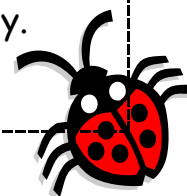
You can find entomologist living in your community. They might work:

1. in local universities, colleges, or community colleges,
2. branch experiment stations,
3. pest control companies,
4. insecticide companies, and
5. as state and federal agricultural inspectors.



YOU ARE YOUR GREATEST HELP.

Don't forget your own imagination. But you don't have to know everything about entomology. Look for help when you need it.



If you select Entomology for your project next year, you will learn about insect study, collection, identification, and preservation





"Discoverer's" Project Report and Story

Name _____

Date _____

Address _____

Club _____

Leader _____

I hope you enjoyed learning about 4H and found some activities that you liked! Check the activities you did. Of those activities you check, circle the ones you liked best. You must do five activities to complete this project.



_____ Food & Nutrition



_____ Forestry



_____ Child & Family Development

_____ Animals



_____ Smart Shopping



_____ Plants and Flowers



_____ Photography



_____ Safety First



_____ Sewing



_____ Insects



Did you "Show and Tell" by doing 4-H Demonstrations?

What:

Where:

To Whom:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Discovering 4-H, 4H EXM 10

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