

4-H Clover Kids

Activity Guide



Extension
University of Missouri



Clover Kids Activity Guide

Missouri 4-H Clover Kids is an introductory program providing opportunities to explore 4-H in a developmentally appropriate setting. Through 4-H Clover Kids clubs and projects, children learn how to get along, share, and work in groups, explore their interests, and build self-confidence. Clover Kid activities introduce youth five to seven years of age to the 4-H concept of learning by doing.

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Source: variations of some of the activities and recipes can be found in many curriculum books and on the web.

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Contents

1. Missouri 4-H Curriculum Foundations.....iv	
• 4-H Thrive Model	
• Experiential Learning	
• Scope and Sequence	
• Meeting Outline	
2. 4-H Clover Kids.....1	
• The purpose of Clover Kids and WHO they are	
• Clover Kids Do's & Don'ts	
• Policies and Procedures for Clover Kids	
• Planning Clover Kids Meetings	
• Graphic Organizers: Collecting Clover Kids Ideas	
3. Topics of Exploration	
a. 4-H Pledge Activity..... 6	
b. Exploration & Experimentation..... 13	
o Cinnamon Apple Dough	o Gak or Slime
o Homemade Chalk	o Playdough
o Bug Fossil Dough	o Soy Plastic
o Plastic Cornstarch Dough	o Veggie Ink
c. Seeds, Plants, Soil & More..... 19	
o Fruit and Vegetable ABC's	o Seed Dissection
o Growing Herbs	o Seeds We Eat
o Parts of a Flower	o The Plants We Eat
o Pounding Flowers and Herbs	
d. Wildlife & Nature..... 31	
o Bird Identification	o Bug Sorting
o Pinecone Birdfeeders	o Age of a Tree
o Bug Bingo	o Make a Leaf Track
o Bug Parts	o Tree Leaf Identification

4-H Thriving Model

In Missouri 4-H, we envision a world in which youth and adults learn, grow, and work together for positive change. Our mission is to engage youth as valued, contributing members of their communities in partnership with caring adults. Our work is guided by the 4-H Thriving Model of Positive Youth Development, built upon the most current research. Through 4-H, youth explore their greatest interests, in settings where they know they belong, and with the support of developmental youth-adult relationships. Research suggests that greater levels of involvement in these quality 4-H programs help youth orient towards bright, successful futures!

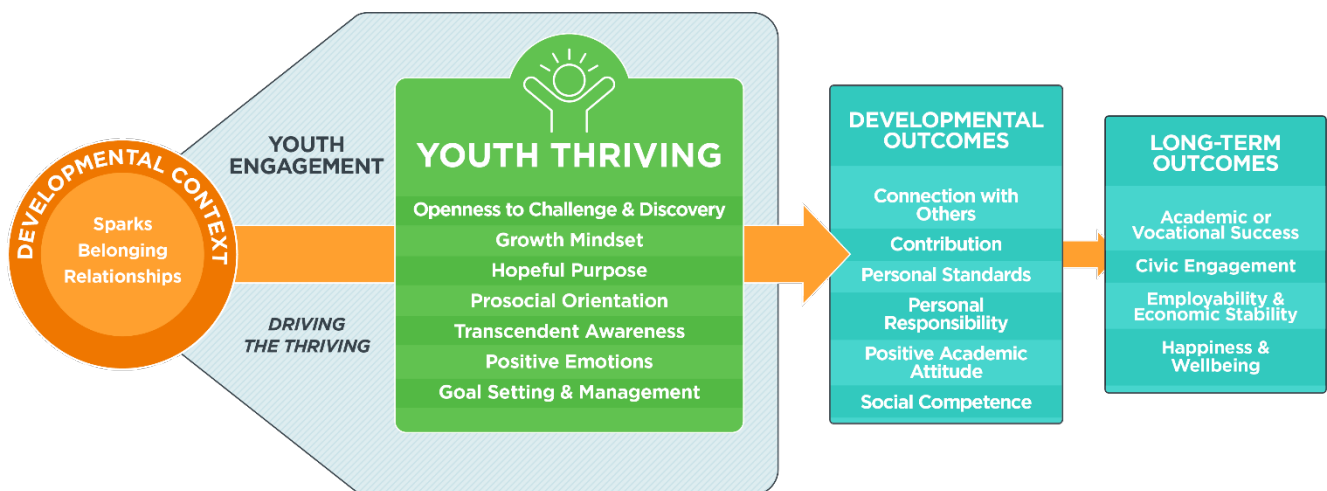
Emerging research that suggests thriving is central to a young person's long-term success, and 4-H offers unparalleled opportunities to achieve this. Through 4-H, youth explore their greatest interests, in settings where they know they belong, and with the support of developmental youth-adult relationships. Research suggests that greater levels of involvement in these quality 4-H programs help youth orient towards bright, successful futures!

4-H programs done well help youth thrive by...

Sparks: Providing opportunities for youth to explore their interests and passions—their spark!

Belonging: Creating environments where unique ideas and abilities of every young person are valued.

Developmental Relationships: 4-H relationships are about trust, mutual warmth, and respect. Youth and adults work together, and everyone grows from the experience.



Experiential Learning

Experiential Learning helps us get the most out of an activity. Reflecting the 4-H motto, “Learn by Doing,” it works by actively engaging the learner in the process of understanding what is learned.

It’s not enough to convey information. Experiential learning guides the learner to understand what is being taught, see its relevance, and to apply this new knowledge to their life.

Accomplishing this takes five steps.

1. **EXPERIENCE:** Note the model begins with ACTION, not long-winded instruction. Keep directions to a minimum. When the learner is encouraged to learn by doing, rather than being told or shown how, a wide variety of life skills can be practiced.

The facilitator’s challenge is to “sit on their hands” as much as possible during this step. Many times, you will hear “We figured this out all by ourselves!”

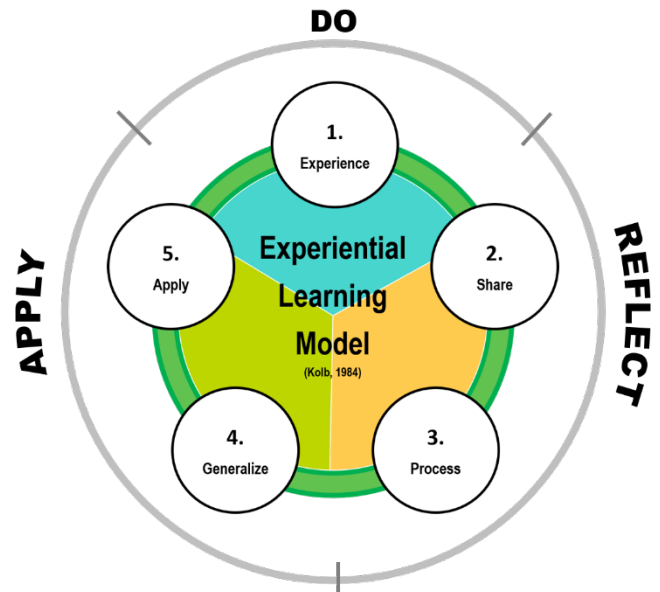
2. **SHARE:** Sharing is simply asking things like, “What did you do?” “What happened?” “What did you see?” “What did it feel like?” and “Was this fun?” It’s not the time for analysis. That comes next, so this part is short.
3. **PROCESS:** The questions and discussion now become more focused on analyzing the experience. What did you observe? Did you develop any strategies? What are some other approaches you could have tried? Explore common themes that emerge from this part of the discussion. Guide the conversation towards the key teaching points. Questions about teamwork, communication skills are often appropriate here.
4. **GENERALIZE:** In this step the learner starts to relate the new knowledge to their lives. When else might you find yourself in a similar situation? Does this ever happen in other parts of your life? Where do you notice this?

The point is to realize this activity is not the first time they have had this experience, and that what they just experienced has relevance to their lives.

5. **APPLY:** This is the key to everything, as the discussion turns to how the learner will use this knowledge next time.

How can you use this at school? The next time you’re in that kind of situation at work, what will you do differently? What new things will you consider the next time you have to make this kind of decision?

Open-ended questions are key, as the learner’s own insights create understanding that what was just learned was useful and how it was useful.



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4-H Clover Kids

The Purpose of Clover Kids and WHO they are

Who they are:

Clover Kids activities introduce children five to seven years of age to the 4-H concept of learning by doing.

Purpose:

Through 4-H Clover Kids clubs, children:

- Are introduced to 4-H, and the concept of learning by doing
- Explore their interests and discover new ones
- Practice social skills such as getting along with others, working in groups, communication, problem solving and sharing
- Build their self-confidence and self-esteem



Clover Kids Do's & Don'ts

4-H Clover Kids are curious, energetic, and eager to please. Activities and projects should **FOCUS** on the **PROCESS** instead of the end result.

Do

- Offer hands-on activities
- Allow for creativity and exploration
- Provide supervision and be safe
- Expect “things” to be messy and loud
- Include field trips if possible
- Have FUN!

Avoid

- Lecturing
- The expectation of “all the same”
- Excessive paperwork
- Competition

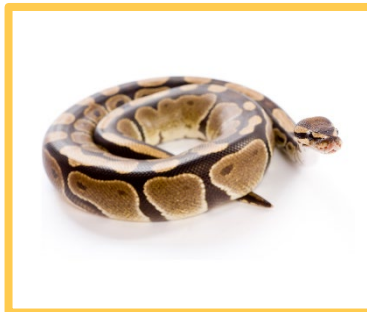


Small Animal Safety Policies

- All animals must be caged, leashed or contained as appropriate and manageable by the child during 4-H Clover Kids meetings and events.
- A parent or guardian must be present with his or her child(ren) when animals are involved.
- 4-H Clover Kids are encouraged to experience a wide range of activities. Learning about and enjoying small animals is one of the many opportunities children can have in a 4-H Clover Kids program. 4-H Youth Development programs developed the following list of approved small animals and policies to help ensure that children and volunteers have safe and meaningful experiences with these animals.

Approved Small Animals:

- Amphibians: frogs & toads
- Birds
- Cavies: guinea pigs, gerbils, & hamsters
- Cats
- Chinchillas
- Dogs
- Fish
- Hedgehogs
- Lizards
- Mice
- Rabbits
- Rats
- Snakes

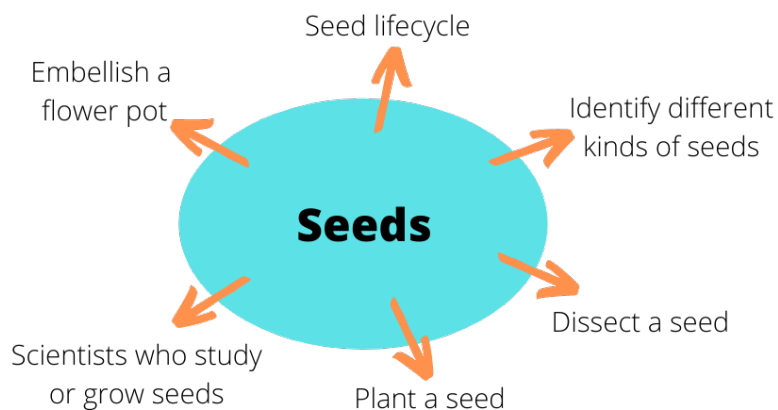


Planning for a Clover Kids Meeting

Clover Kid meetings are different from a typical 4-H meeting. This is because their attention span lasts about 10 minutes. Lecturing is not a good idea. Short discussions are best, followed by 4 to 6 hands-on activities, lasting about 5 minutes each. Using a “theme” makes planning for a meeting a bit easier. Clover Kids meetings could last from 15 to 45 minutes depending on when the meeting happens. If the meeting is held as a stand-alone meeting (such as a SPIN club) 30 to 45 minutes would allow for discussion and exploration.

Suggested steps to follow when using a “theme” to plan a meeting.

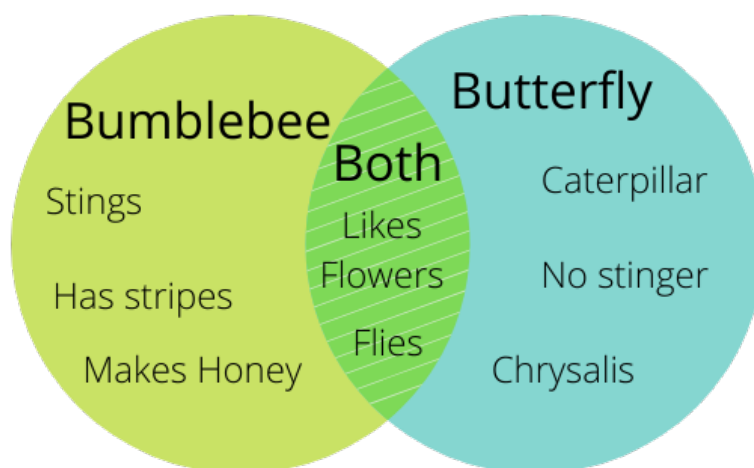
1. Determine how many meetings you will host.
 - a. Planning for seven meetings is a good way to ensure the suggested 6 hours of project work is met for the 4-H year.
2. Determine the “theme” for each meeting.
 - a. One way to do this is to use a curriculum web. At the first meeting, ask the Clover Kids what they enjoy doing or learning about. You can then choose from their ideas to plan for future meetings.
3. Determine the activities for the selected “theme”. Again, it is helpful to use the curriculum web. Once activities are chosen, the last step is to collect all of the supplies needed.



Graphic Organizers

Graphic organizers are a fun way to discover what children know about a particular topic. Listed below are two examples. Each example would provide opportunities for rich discussions with a group of Clover Kids.

1. Venn diagram – this type of graphic organizer allows the participant to compare something to something else. For example, you could ask a group of Clover Kids to compare the characteristics of a butterfly to a honeybee.
 - The gathered information could help to determine the next topic to be explored.



2. A KWL chart is another tool that may be used to determine what a group of Clover Kids might know or understand about – let’s say – amphibians and reptiles. This is a fun way to begin a meeting and time for exploration.

Amphibians & Reptiles KWL

What we know	What we want to know	What we learned
<ol style="list-style-type: none"> 1. In this column, you will record everything the Clover Kids say they know about amphibians and reptiles. 2. This includes statements that might be incorrect – you can later discuss them in the “what you learned” section as part of the reflection. 	<ol style="list-style-type: none"> 1. In this column, you will record what the Clover Kids want to find out or learn about the topic. This may include what they are unsure of or question during the discussion. 	<ol style="list-style-type: none"> 1. This column is completed after the exploration or at the end of the meeting. 2. This is a time for reflection. A time to discover what was learned.

Exploration & Experimentation



Pledge Activity

Learner Outcomes

Clover Kids will practice saying the 4-H pledge, identify what the four H's stand for, and discuss the 4-H motto and colors.

Activity Instructions

1. **Set up** the American and 4-H flags where the youth can all see them.
 - a. Have the youth identify each flag.
2. Explain that each 4-H meeting should begin by saying the Pledge of Allegiance and the 4-H Pledge.
 - a. Start with the Pledge of Allegiance. Have the youth stand up, face the flag, and place their right hand over their heart. If they are wearing a hat, it should be removed. Lead them in saying:

"I pledge allegiance to the Flag of the United States of America, and to the Republic for which it stands, one Nation under God, indivisible, with liberty and justice for all."

3. Show them the 4-H flag and explain:
 - a. The colors are green and white. Green symbolizes nature's most common color. White symbolizes purity.
 - b. Point out the 4-H Clover and explain what the H's stand for (head, heart, hands, and health).
 - c. Next, tell them the words of the pledge and the hand motions that go with them (see the 4-H Pledge worksheet). Practice each line and hand movement. Then say the pledge in its entirety.
4. Explain that 4-H has a motto.
 - a. A motto is a short sentence that briefly tells the beliefs of a person, family, or organization.
 - b. 4-H's motto is "To make the best better."
5. Hand out the worksheet and explain what to do. As they are choosing colors, explain that the 4-H name and emblem are very special.
 - a. The 4-H name and emblem (Clover) is protected under a federal statute (point out the mark on the Clover-18 USC 707). This protects the Clover, just like the Seal of the President of the United States and the Olympic Rings are protected. This means they must always:

Materials Needed

- 4-H Pledge worksheet
- 4-H Emblem worksheet
- Crayons
- 4-H Flag
- American Flag



- i. Color the Clover green with white Hs. It can also be colored white with black Hs or black with white Hs if necessary. But not other colors like pink, purple or blue.
 - ii. Also, when they write 4-H, they must always put the hyphen between the 4 and the H.
6. As they are coloring, tell them about Truman the Tiger:
 - a. Explain the Truman is the mascot of the University of Missouri (Mizzou). A mascot is any person or thing that symbolizes a particular event or organization.
 - b. The reason they are coloring Truman is because 4-H in Missouri is part of the University of Missouri, Missouri's land grant university. Every state has a land grant university and that is where 4-H is found.
7. **Bring the group back together to review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Ask if they know any other mascots—like at their school.
- Ask what they would think if they saw the 4-H Clover in a different color, like pink.

Apply: How does the activity pertain to real life?

- Ask them if they are part of any other organization that has a pledge or motto, or if they do the Pledge of Allegiance at school.

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4-H Pledge

Learn the 4-H pledge
with Truman!

Stand up and say I pledge



Touch your head with your right hand and say
my **HEAD** to clearer
thinking,

*Put your hand over your heart
and say*

my **HEART** to
greater loyalty,



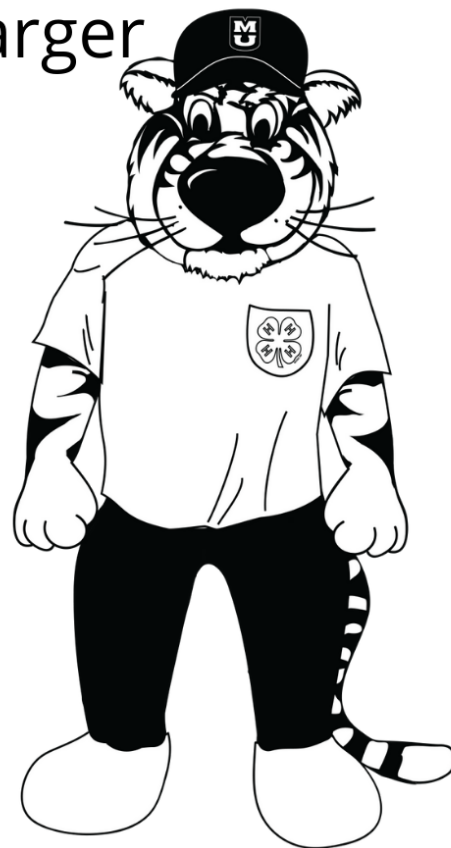
Slightly bend your arms with your palms up and say

my **HANDS** to larger
service, and



Put your arms down to your sides and say

my **HEALTH** to better living,
for my club, my community,
my country, and my world.



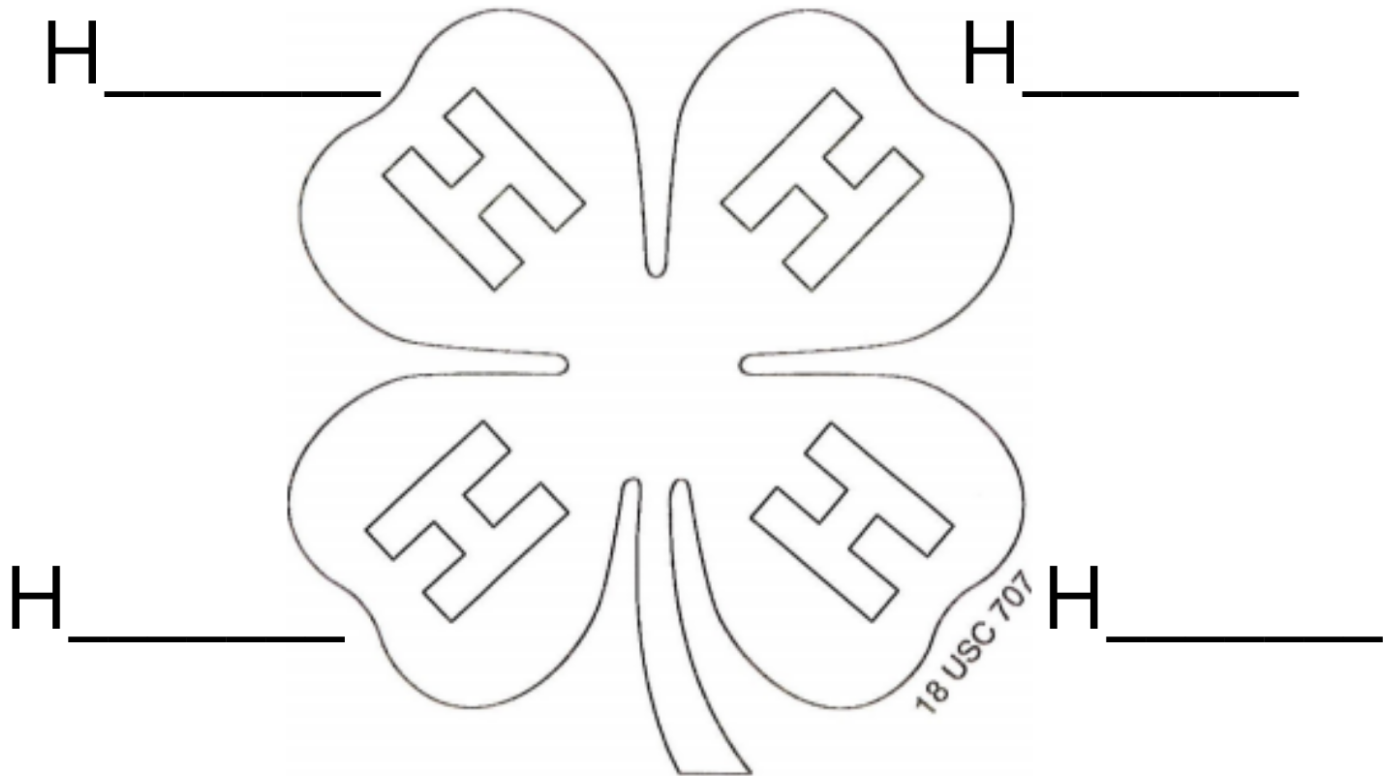
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The 4-H Emblem

The 4-H emblem is a green, four-leaf clover with the letter "H" on each leaf. Each "H" stands for a part of the pledge. Color the clover below and fill in what each "H" stand for on the lines.



The 4-H Motto

To make the
_____ better!

The 4-H Colors

Green and White
Green symbolizes nature's most common color. White symbolizes purity.

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Exploration & Experimentation

Learner Outcomes

The Clover Kids will practice and explore a variety of different skills such as reading a recipe, following step-by-step directions, measuring liquid and dry ingredients, mixing ingredients together, and clean up skills when finished.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
 - a) **NOTE:** be aware of allergies to peanuts and/or other allergens
2. **Do the activity:** allow plenty of time to complete the activity.
3. **Steps to follow:**
 - a. Choose a recipe (you can use one of your own too).
 - b. Collect all the needed ingredients and utensils.
 - i. Be sure to have enough for each Clover Kid.
 - ii. Working in teams of 2 or as a group works as well
 - c. Consider plastic tablecloths to help with clean up.
 - d. Provide guidance and support for the Clover Kids to complete the chosen recipe allowing them to complete as many of the steps as possible.
 - i. If working in a group provide each Clover Kid an opportunity to participate
 - e. Clean up when finished.
4. **Bring the group back together to review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Discuss the steps to the recipe and the end result.
- Ask questions such as “what would happen if we left out...” (a step or ingredient)?

Apply: How does the activity pertain to real life?

- Relate the recipe back to real life by asking relevant questions that connect to everyday life, a certain career or scientist

Materials Needed

- Check each recipe for needed materials

Gather all ingredients and tools before you begin.

NOTE: there are reflection questions included with each recipe.



Cinnamon Apple Dough



Ingredients

- 1/2 c. unsweetened applesauce
- 6 Tbs. ground cinnamon
- 1 Tbs. white school glue
- A bowl and a mixing spoon
- Measuring cups & spoons

Directions

Mix all ingredients together in a small bowl until a dough is formed. You may need to use your hands. Sprinkle some cinnamon onto a dry flat surface. Lay the dough on surface and knead like bread. If it is too dry add a bit of applesauce. If it is too wet add more cinnamon. Place a piece of plastic wrap on top of the dough. Using a rolling pin roll the dough to about 1/4 inch in thickness. Use cookie cutters to cut into shapes. Use a straw to poke a hole near the top. Let air dry for several days or bake for 2 1/2 hours in a 200° oven.

Once dry or baked (let cool first) embellish with paint, glue and glitter. Place a piece of ribbon in the hole to hang. This recipe can be doubled in amount.

Review Questions

- What purpose does the glue play? (*It is a preservative that assists in the drying process*)
- What shapes will you make and what can you use them for later?

Related Careers

- Baker
- Home Decorator

Related 4-H

Projects

- Arts & Crafts
- Breads
- Interior Design

Homemade Chalk



Ingredients

- 1/2 c. water
- 3 Tbs. Plaster of Paris
- Dry Tempera paint, your choice of color
- A small bowl, a spoon and paper cups

Directions

Mix ingredients in a bowl. Pour into small paper cups. Air dry until hard. Remove paper and have fun decorating a sidewalk or driveway.

Review Questions

- What will happen to the chalk drawing on a sidewalk when it rains? WHY?
- Chalk is similar to what rock? (*Limestone*)

Related Careers

- Agronomist
- Environmental scientist
- Geologist

Related 4-H

Projects

- Agronomy
- Environmental science
- Geology

Bug Fossil Dough



Ingredients

- 2 c. flour
- 1 c. salt
- 1 c. water
- Measuring spoons, a bowl, a spoon
- Plastic bugs or small animals to press into the dough

Directions

Mix ingredients together in the small bowl. Roll the dough into balls. Flatten each ball into a small round pancake shape about 1/2 inch thick. Press a plastic bug or small animal into the dough deep enough to make an indentation. Carefully remove the bug or animal and let the clay dry.

The fossils can be baked slowly in the microwave - start with 1 minute, repeat as needed. **Be careful - the dough will burn.**

Review Questions

- What is a fossil? Where would you find one?
- What kind of fossil might you find today?

Related Careers

- Agronomist
- Archeologist
- Geologist
- Paleontology

Related 4-H Projects

- Agronomy
- Amphibians & Reptiles
- Entomology
- Environmental science
- Geology

Plastic Cornstarch Dough

Ingredients

- 4-6 drops food coloring, your choice of color
- 1/4 c. white glue
- 1/2 c. flour
- 1/2 c. cornstarch
- 1/4 c. water
- Measuring cups, 2 bowls and 2 spoons

Directions

Mix glue, water, and food coloring together in a small bowl until well blended. In a separate bowl, combine the flour and cornstarch. Add the dry ingredients to the water and glue mixture. Mix until a stiff dough is formed. Knead on a floured surface. Mold into shapes and let dry.

Review Questions

- Where does corn starch come from? (corn)
- Is corn starch edible? (yes, it is in candy, soda pop, and other sweet things)

Related Careers

- Agronomist
- Foods
- Baker/Cook
- Farmer/horticulture

Related 4-H Projects

- Agronomy
- Foods
- Horticulture

GAK or Slime



Ingredients

- 2 bowls, measuring cups, and measuring spoons
- White school glue
- Water
- Food coloring
- Borax detergent

Directions

Mix together in bowl #1

- 1/2 c. white school glue
- 1/2 c. warm water
- Food coloring, your choice of color

Mix together in bowl #2

- 1 1/2 c. water
- 2 tsp. Borax detergent

Pour the mixture in bowl #2 into bowl #1 and mix the ingredients together. Drain the excess liquid and discard. (Do NOT pour down the drain or you will be calling a plumber). Knead the gak/slime like you would bread dough. The more you work with it the better it becomes. Store in an air-tight container.

DO NOT EAT.

Review Questions

- What is chemistry? (*You just completed a chemistry experiment!*)
- What would happen if you used clear school glue?
- What would happen if you added glitter?
- Where might you find "real slime" in nature? (*Slime mold can sometimes be found in the garden growing on mulch or on grass clippings*) (*Pond algae looks like green slime*)

Related Careers

- Conservation agent
- Horticulture
- Hydrologist
- Marine biologist

Related 4-H

Projects

- Arts & crafts
- Environmental scientist
- Horticulture
- Sport fishing
- Wildlife

Playdough



Ingredients

- 2 1/2 c. flour
- 1/2 c. salt
- 1 Tbs. alum
- 1 Tbs. cooking oil
- 2 cups hot water + 2 drops of food coloring
- A bowl, mixing spoon, measuring cups & spoons

Directions

In a large bowl mix together the flour, salt and alum. Then add the oil and water and mix again. Knead the mixture like you would bread. Store in an air-tight container. **DO NOT EAT.**

Review Questions

- Try adding a package of unsweetened Kool-Aid instead of the food coloring.
 - What do you think will happen?
- Why is playing with playdough considered a stress reliever?

Related Careers

- Foods
- Baker/Cook
- Farmer/horticulture

Related 4-H Projects

- Arts & Crafts
- Foods
- Horticulture

Soy Plastic

Ingredients

- Small zip lock baggie and measuring spoons
- 2 Tbs. cornstarch
- 2 Tbs. water
- 4-5 drops of soybean oil
- 2-3 drops food coloring, color of your choice

Directions

Place all ingredients into the baggie. Zip it closed and (squish it) mix ingredients together. Unzip the baggie and place in microwave for 30-40 seconds. Remove the bag from the microwave - **IT WILL BE VERY HOT!** Once the plastic has cooled to touch remove it from the bag – ta dah! Your very own homemade plastic made from soybeans. Drape it over an object to form a shape and let cool. Corn oil works too!

Review Questions

- What shape could you make from your soybean plastic?
- Where does soybean oil come from?

Related Careers

- Agronomist
- Farmer/horticulture

Related 4-H Projects

- Arts & Crafts
- Agronomy
- Horticulture

Veggie Ink



Ingredients

- 1 pkg. unsweetened Kool-Aid (cherry, and grape work best)
- 1 tsp. water
- 1/8 tsp. soybean cooking oil
- 1/8 tsp. granular soy lecithin (purchase at a health food store)
- 2 sm. paper cups, measuring spoons, 2 stirring sticks, paper towels, a sm. paper plate, rubber-stamp images and paper

Related Careers

- Agronomist
- Farmer/horticulture

Related 4-H Projects

- Agronomy

Directions

Mix the water and Kool-Aid together in one of the small cups. Mix the oil and lecithin together in the other small cup. Pour the Kool-Aid mixture into the oil mixture and stir until mixed. Set aside.

Take 2 paper towels and fold them in half and then in half again forming a square shape. This will be your ink pad. Place the folded paper towels on the paper plate to protect the surface underneath. Carefully pour the ink onto the paper towels. Have fun stamping!

Review Questions

- Who might use soy ink to print "things"? (*newspapers*)
- Where does soybean oil come from?
- What purpose does the soy lecithin play? (It is an emulsifier that allows the oil to mix with the water)
- Is soy lecithin in our food? (yes, chocolate candy, salad dressing, there are others)

Seeds, Plants, Soil and more



Fruit and Vegetable ABC's

Learner Outcomes

The Clover Kids will identify fruits and vegetables for each letter of the alphabet.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Look through the seed catalogue identifying fruits and vegetables for each letter of the alphabet.
 - b. Cut out the pictures for each of the letters in the alphabet.
 - c. Arrange the pictures on the poster board to make a collage.
 - d. Label the pictures and embellish as desired.
4. **Bring the group back together to review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Discuss the fruits and vegetables identified. Were any letters left out?

Apply: How does the activity pertain to real life?

- Ask which fruit and vegetable is their favorite.
- Do they have a garden, do they grow fruits and vegetables in the garden? Which ones?

Materials Needed

- Scissors
- 1 or 2 seed catalogues
- Poster board
- Pencil
- Glue

Gather all ingredients and tools before you begin.

Related 4-H Projects

- Agronomy
- Gardening
- Foods

Related Careers

- Botanist
- Farmer/horticulturist
- Gardener





Growing Herbs

Learner Outcomes

The Clover Kids will plant herb seeds and observe the plants as they grow.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Using a sharpie marker, label the container with the name of the herb you will be planting.
 - b. Fill the container with soil.
 - c. Sprinkle a few herb seeds on top of the soil, following the planting instructions on the seed packet.
 - d. Sprinkle just enough soil over the top of the seeds so they are covered.
 - e. Water the seeds with the spritz bottle (be careful not to overwater).
 - f. Sit the container in a sunny window. Be sure to water each day.
 - g. Once the plants appear, water as needed. Enjoy your fresh herbs in your favorite recipe.
4. **Bring the group back together to review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Ask the Clover Kids which herbs they are familiar with such as cilantro in salsa, oregano in spaghetti sauce or pizza sauce.
- Talk about growing a pizza garden – what herbs would they need to grow?

Apply: How does the activity pertain to real life?

- Discuss how herbs are used in recipes. Allow the Clover Kids to taste some fresh herbs such as parsley, cilantro, and mint.
- Discuss what plants need to grow and thrive. (soil, water and sunshine)

Materials Needed

- A small container or pot
- Sharpie markers
- Soil
- A spritz bottle filled with water
- A variety of herb seeds and some fresh herbs to taste. Parsley, cilantro, and mint would be good choices.

Gather all ingredients and tools before you begin.

Related 4-H Projects

- Agronomy
- Gardening
- Foods
- Horticulture

Related Careers

- Agronomist
- Farmer/horticulturist
- Chef





The Parts of a Flower

Learner Outcomes

The Clover Kids will dissect a flower and identify the parts.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Using the diagram as a reference discuss the parts of a flower (blossom).
 - i. Petals attract pollinators such as bees and butterflies.
 - ii. Stamen provides support for the anther which makes pollen.
 - iii. Stigma traps pollen which travels through the pistil to the ovary which contains the egg cells which produce the fruit or seed pods.
 - iv. Sepals protect the flower bud before it blooms.
 - b. Using the diagram dissect a flower by taking it apart, placing the parts on the diagram.
 - c. Use the magnifying glass to take a closer look.
4. **Bring the group back together to review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Review the parts of the flower.
- Make a list of pollinators that are attracted to the flowers you used. (Bees, butterflies, ants, hummingbirds etc.)

Apply: How does the activity pertain to real life?

- Discuss the importance of pollinators in our environment and what we can do to help the pollinators such as bees and their survival.

Materials Needed

- Flower blossoms (lily type flowers work best)
- A diagram showing the parts of a flower
- A magnifying glass

Gather all ingredients and tools before you begin.

Related 4-H Projects

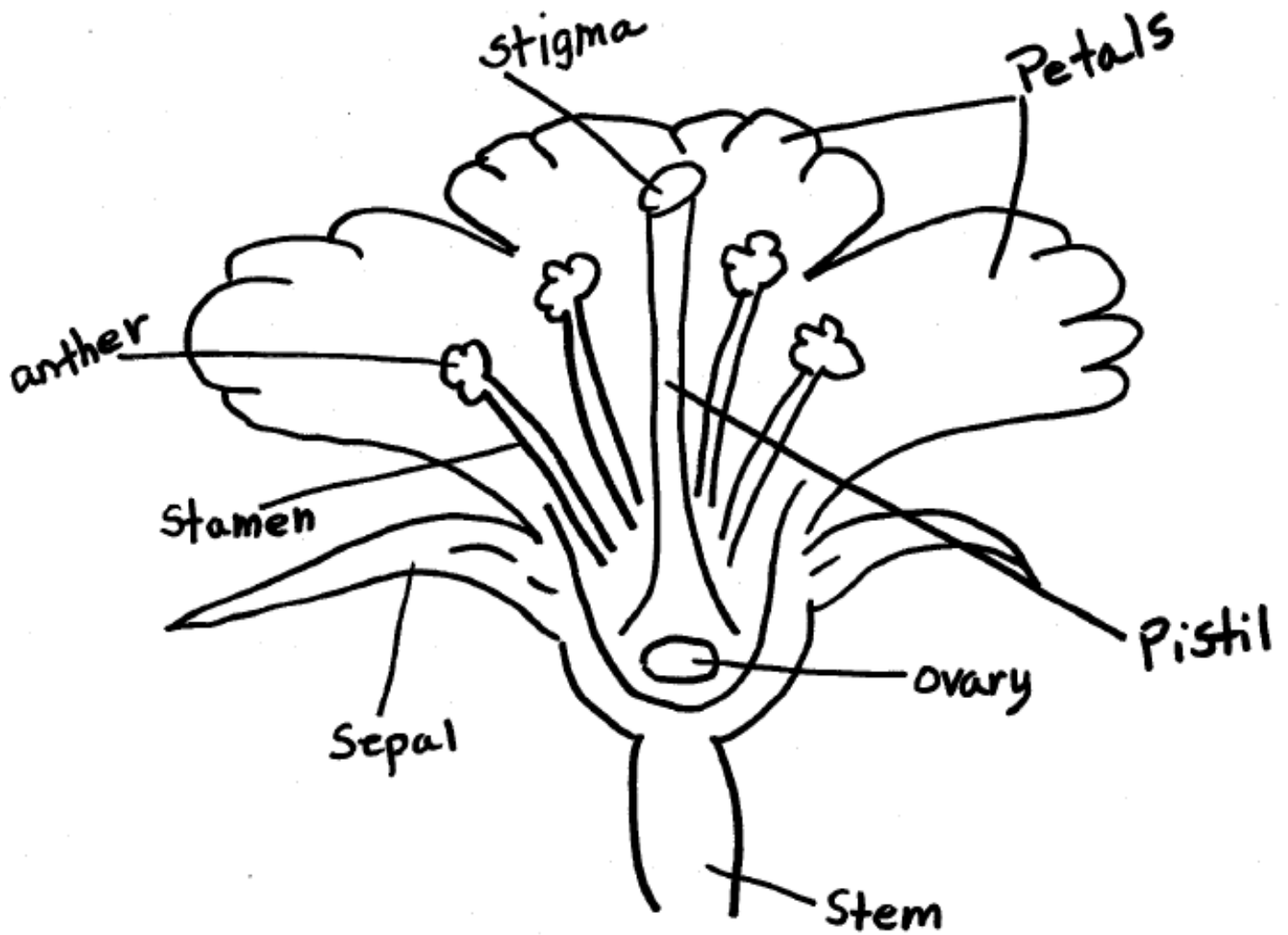
- Floriculture
- Entomology
- Gardening
- Horticulture

Related Careers

- Entomologist
- Gardener
- Horticulturalist



Parts of a flower





Pounding Flowers & Herbs

Learner Outcomes

The Clover Kids will pound flowers and herbs creating a colorful and fragrant collage.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Place the square of muslin flat on a hard surface. (Remember you will be pounding on the fabric – be sure to protect the countertop by placing something hard and flat under the muslin)
 - b. Fold the muslin in half, hand crease and then unfold.
 - c. You will now make a flower sandwich by placing a single layer of flower petals, leaves and herbs in a pattern/design on one-half of the muslin.
 - d. Fold the muslin over the petals making a sandwich.
 - e. Using the wooden hammer or wood block pound the fabric sandwich until flat (this may take 2 to 3 minutes of pounding) – this process releases the colors of the petals and leaves a fun pattern on the fabric. Smells good too!
 - f. Unfold the fabric, remove remaining pieces and allow the design to air dry.
 - g. Framing the design is optional.
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Ask and discuss – What made the colorful design on the fabric?
- Ask and discuss – Did you smell anything while you were pounding the petals?

Apply: How does the activity pertain to real life?

- Discuss what flowers and plants need to grow. (Sun, water, soil)
- Discuss the uses for herbs. (cooking, air fresheners, perfumes)

Materials Needed

- Flower blossoms
- Green leafy herbs such as mint, basil and parsley
- 6 x 6-inch squares of unbleached muslin fabric
- Small wooden hammers or blocks of wood

Gather all ingredients and tools before you begin.

Related 4-H Projects

- Floriculture
- Gardening
- Horticulture

Related Careers

- Agronomist
- Botanist





Seed Dissection

Materials Needed

- Lima beans that have been soaked in water overnight (4-6 per child)
- Paper plates,
- A magnifying glass
- A pencil and paper

Gather all ingredients and tools before you begin.

Related 4-H Projects

- Agronomy
- Gardening
- Horticulture

Related Careers

- Agronomist
- Botanist
- Farmer

References

Adapted from: *While you wait: See them sprout*, Level A, p. 16-17



Learner Outcomes

The Clover Kids will dissect a seed and identify its three basic parts.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Place 4- 6 seeds on a paper plate for each Clover Kid. Ask the Clover Kids what they think will be inside each seed. Record what they say.
 - b. Instruct the Clover Kids to peel off the outer coat of the seed and split the two halves which will expose the tiny embryo inside.
 - c. Using the magnifying glass ask them what they have found inside the seed.
 - d. Ask the Clover Kids to draw what they see and label the parts.
 - i. Seed coat – outer skin of the seed
 - ii. Embryo – the tiny plant
 - iii. Food supply – the two halves of the seed
 - e. Discuss the different parts of the seed and their purpose.
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Ask the Clover Kids if they were surprised when they discovered the tiny embryo?
- Ask what they think the “green part” (embryo) inside the seed is for?
- Discuss what it takes for a seed to grow into a healthy plant (soil, water and sunshine).

Apply: How does the activity pertain to real life?

- Discuss where seeds come from, and why we need seeds.
- Ask the Clover Kids if they eat seeds? What kind?



Seeds We Eat

Learner Outcomes

The Clover Kids will prepare and taste roasted pumpkin seeds.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time to complete the activity.
3. **Steps to follow:**
 - a. Wash the outside of the pumpkin. Using the knife cut around the stem making an opening in the top of the pumpkin large enough so the seeds and pulp can be scooped out.
 - b. Scoop out the seeds and pulp and place them on a paper plate.
 - c. Remove the pulp from the seeds. Rinse the seeds under warm water and place on a clean paper plate and allow them to dry.
 - d. In a small bowl mix together 1 Tbs. cooking oil, 1 Tbs. Ranch dressing mix and ¼ tsp. salt.
 - e. Pour mixture over pumpkin seeds and stir until completely coated.
 - f. Spread the coated seeds onto a cookie sheet making sure they are in a single layer.
 - g. Bake in a 350° oven until golden brown (5-10 minutes). Stir every 5 minutes so the seeds cook evenly.
 - h. Once cool, eat and enjoy.
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- What did we find inside the pumpkin?
- Do you like the taste of the pumpkin seeds?
- What other seeds do we eat? *Sunflower seeds, corn, peas, beans....* (A sunflower head can also be used instead of a pumpkin in this activity)

Apply: How does the activity pertain to real life?

- Where do pumpkins come from?
- Can we eat a pumpkin?

Materials Needed

- A pumpkin
- Large knife
- Paper plates
- Spoon
- Measuring spoons
- Cookie sheet
- Cooking oil
- Ranch dressing mix
- Salt

Gather all ingredients and tools before you begin.

Related 4-H Projects

- Foods
- Gardening
- Horticulture

Related Careers

- Farmer
- Botanist
- Horticulturalist

References

Variations of this recipe can be found in many curriculum books and on the web.





The Plants We Eat

Learner Outcomes

The Clover Kids will classify the plants (and parts of plants) we eat.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Show the Clover Kids the plants we eat chart and discuss the different squares (categories). Ask them which of the “parts” do they eat?
 - b. Using the seed catalogue ask the Clover Kids to cut out pictures of the vegetables and fruits they like to eat.
 - c. Discuss their choices allowing the Clover Kids to classify the pictures they choose by gluing them in the correct square on the chart.
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Review the different parts of the plant that we eat and examples.

Apply: How does the activity pertain to real life?

- Discuss the fruits and vegetables the Clover Kids have chosen.
- Ask them why it is important to eat fruits and vegetables on a daily basis.
- Discuss growing a garden – what is needed.

Materials Needed

- Scissors
- A seed catalogues
- Glue
- Various vegetables and the plants we eat chart

Gather all ingredients and tools before you begin.

Related 4-H Projects

- Foods
- Gardening
- Horticulture
- Agronomy

Related Careers

- Farmer
- Botanist
- Horticulturalist
- Gardener



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Plants and the Parts We Eat

Fruit/Vegetables (tomatoes, squash, cucumber, apples etc.)	Seeds or Seedpod (okra, corn, peas etc.)
Flower, Leaves or Stem (broccoli, lettuce, celery etc.)	Root (potatoes, carrots, turnips etc.)



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Wildlife and Nature



Bird Identification

Learner Outcomes

The Clover Kids will be introduced to birds found in Missouri.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Print the bird poster (on next page).
 - b. Write the names of the birds on individual slips of paper.
 - c. Discuss the different birds and their characteristics.
 - d. Distribute the names of the birds between the Clover Kids.
 - e. Allow time for the Clover Kids to identify each bird.
 - f. Discuss their answers, explaining correct answers if needed.
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Ask the Clover Kids which of the birds they have seen in their yard or neighborhood.

Apply: How does the activity pertain to real life?

- Discuss what birds need to survive.
- Are birds considered pests? Would you want them in your yard or garden?
- Which of the birds sing; which are considered predators? (*Bald Eagle*)

Key: Eastern Bluebird; American Tree Sparrow; American Robin; Blue Jay; Black Capped Chickadee; Northern Cardinal; Wild Turkey; Ruby Throated, Hummingbird; American Bald Eagle; American Goldfinch

Materials Needed

- The bird identification poster
- Paper

Gather all materials before you begin.

Related 4-H Projects

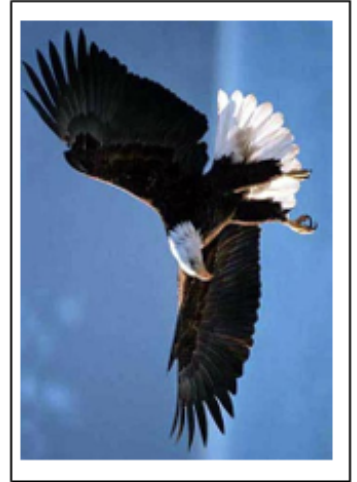
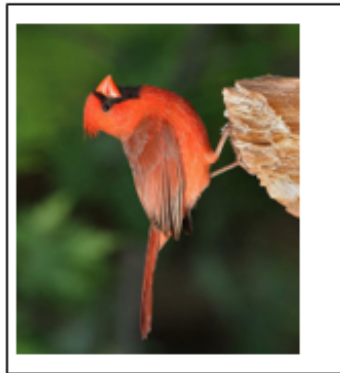
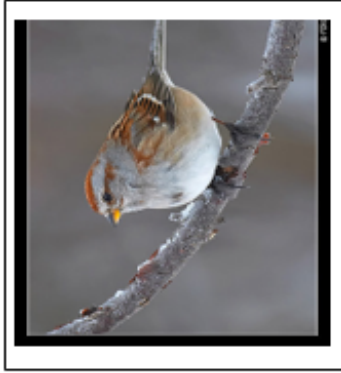
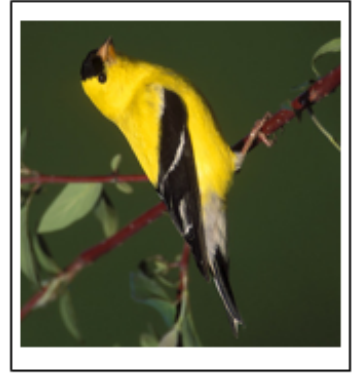
- Wildlife

Related Careers

- Conservation agent
- Ornithologist



Missouri Birds



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Pinecone Birdfeeder

Learner Outcomes

The Clover Kids will create a birdfeeder using a pinecone.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Choose a pinecone.
 - b. Cut a piece of heavy yarn to about 24 inches in length. Tie one end to the top of the pinecone, this will be the hanger.
 - c. Spread a thick layer of shortening, lard or peanut butter on all sides making sure it is between and sticking to the scales.
 - d. Roll the covered pinecone in the tray of birdseed pushing the seeds into the shortening, lard or peanut butter.
 - e. Shake off the excess seeds.
 - f. Choose a spot to hang your feeder such as a tree limb that can be observed from inside your home so you can watch the birds and small animals who visit.
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Discuss the types of birds that might visit the feeder? Are there other animals that might also like to eat the seeds or nuts on your feeder?
- Where might you hang the feeder so it is safe for the birds to visit?

Apply: How does the activity pertain to real life?

- What birds do you see in your neighbor that might visit your feeder?
- When is it most important to provide food for the birds?

Materials Needed

- Pinecones
- Birdseed (place in a bowl or on a tray – seeds with sunflower and peanuts is best)
- Shortening, lard or peanut butter
- Spoons
- Paper towels
- Yarn or cording to hang the feeder

Gather all materials before you begin.

Related 4-H Projects

- Wildlife

Related Careers

- Conservation agent
- Ornithologist
- Wildlife Biologist





Bug Bingo

Materials Needed

Learner Outcomes

The Clover Kids will explore entomology through a game of bingo.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Discuss the differences between insects and an arachnid (spider).
 - b. Discuss the body parts of an insect (head, thorax, abdomen).
 - c. Give each youth a bingo card and 9 buttons (small objects).
 - d. Explain the steps to play a game of bingo – when you name a bug they are to locate it on the card and cover it with a button (small object). The first player to cover a row says bingo.
 - e. Name the bugs one at a time until all are covered.

Adaptation: Play the game again – this time have the Clover Kids cover the bugs by asking – which can fly, sing, spin a web or jump.

4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Review the different bugs on the card. Discuss their answers, explaining correct answers if needed.
- Ask which ones are insects, which ones are not.

Apply: How does the activity pertain to real life?

- Ask which of the bugs have the Clover Kids seen in their yard, garden or neighborhood.
- Discuss which bugs would be helpful versus destructive when found in the garden.
- Discuss the role of an entomologist.

- Bingo playing card for each Clover Kid
- Small objects such as buttons to use as game pieces

Gather all materials before you begin.

Related 4-H Projects

- Entomology

Related Careers

- Entomologist

Key

Lady beetle, grasshopper, praying mantis, painted lady butterfly, bumblebee, garden spider, cricket, black ant and lightning bug.



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Bug Parts

Learner Outcomes

The Clover Kids will identify the different parts of an insect.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Give each Clover Kid a copy of the insect diagram. Discuss the black lines on the diagram (the parts to be identified).
 - b. Give each Clover Kid a copy of the flash cards and a pair of scissors.
 - c. Allow the Clover Kids to cut apart the flash cards and place them on the insect diagram.
 - d. Discuss their answers (provide correction where needed).
 - e. Have the Clover Kids glue the flash cards to their insect diagram.
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Review the parts of the insect.
- Discuss the difference between an insect and a spider.

Apply: How does the activity pertain to real life?

- Discuss the difference between beneficial and pest.
- Identify which “bugs” are beneficial and which are pests.

Materials Needed

- Insect diagram
- Answer key
- Scissors
- Glue

Gather all materials before you begin.

Related 4-H Projects

- Entomology

Related Careers

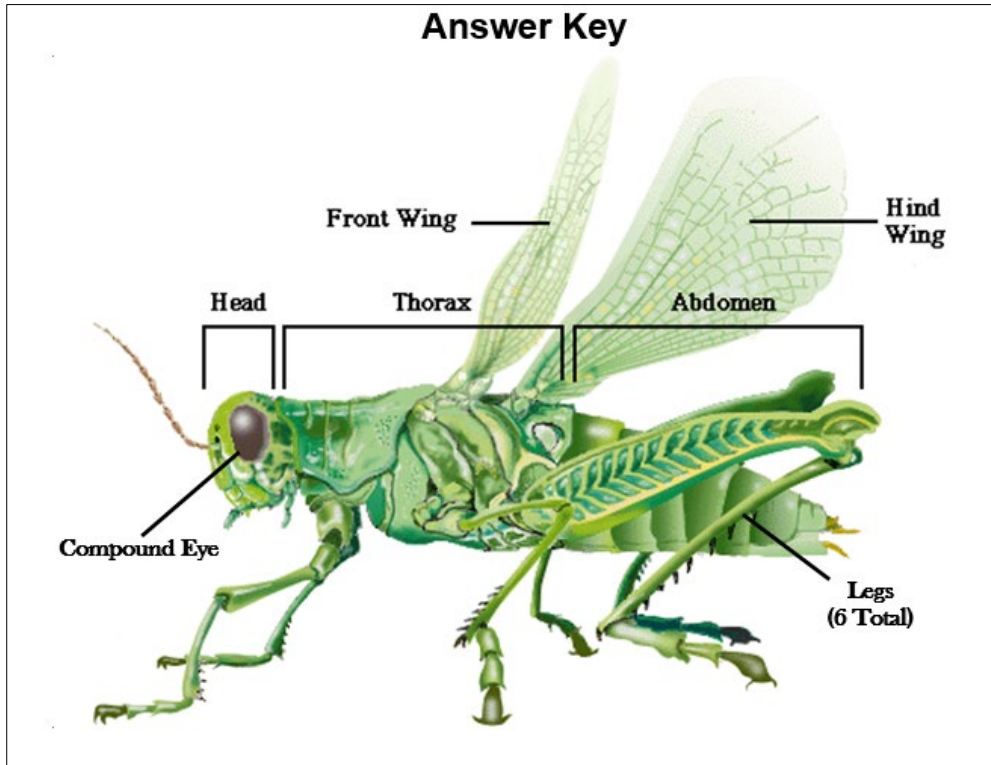
- Entomologist

References

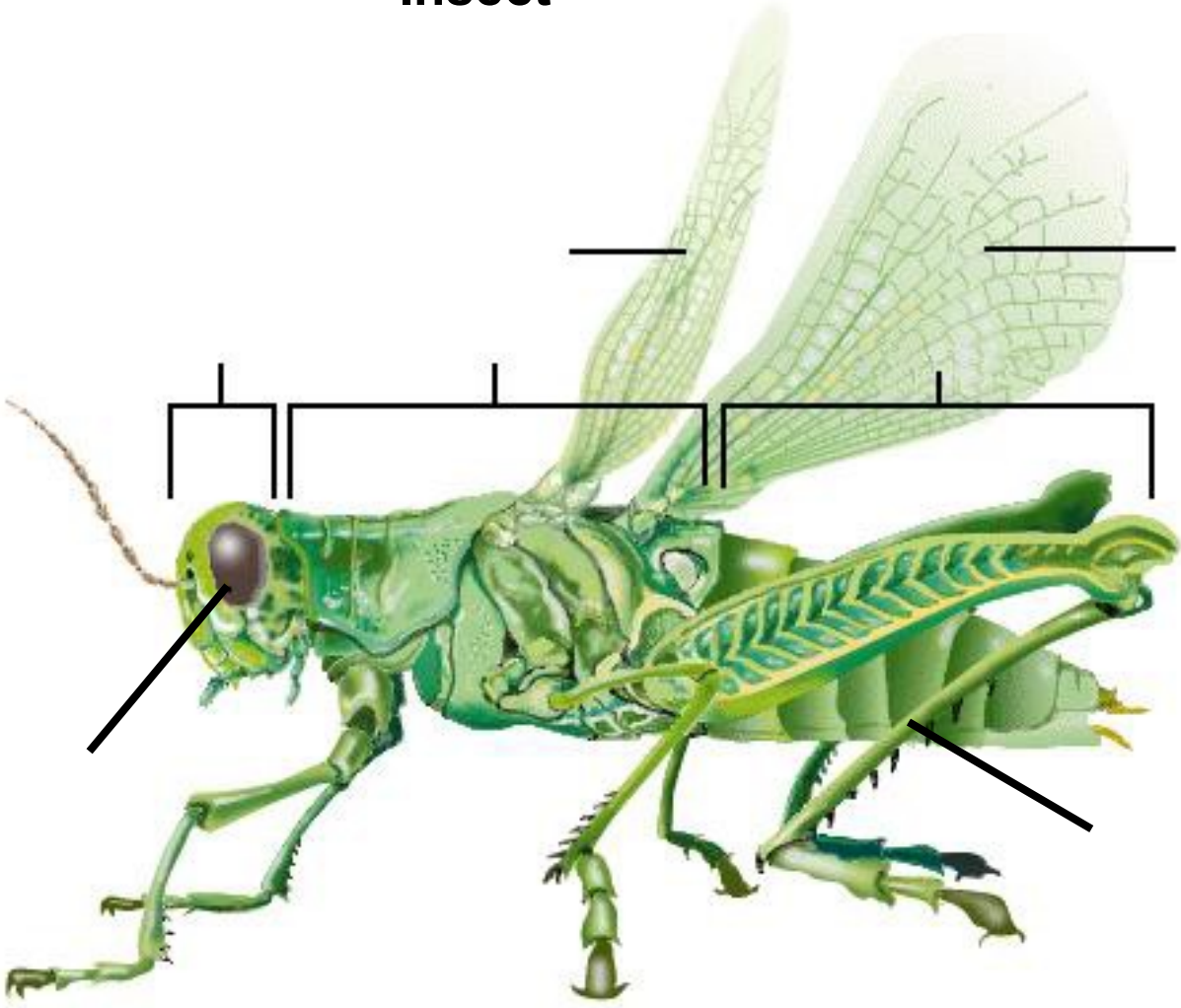
Adapted from the Missouri 4-H *Entomology Skill-a-Thon: Insect parts identification.*



Answer Key



Insect



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Legs (Six Total)	Compound Eye
Abdomen	Front Wing
Head	Thorax
Hind Wing	

Legs (Six Total)	Compound Eye
Abdomen	Front Wing
Head	Thorax
Hind Wing	

Legs (Six Total)	Compound Eye
Abdomen	Front Wing
Head	Thorax
Hind Wing	

Legs (Six Total)	Compound Eye
Abdomen	Front Wing
Head	Thorax
Hind Wing	

Legs (Six Total)	Compound Eye
Abdomen	Front Wing
Head	Thorax
Hind Wing	

Legs (Six Total)	Compound Eye
Abdomen	Front Wing
Head	Thorax
Hind Wing	

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Bug Sorting

Materials Needed

Learner Outcomes

The Clover Kids will sort bugs according to characteristics.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Provide each Clover Kid with a Venn diagram and a copy of the bug pictures.
 - b. Ask the Clover Kids to cut apart the bug pictures.
 - c. Discuss each of the bugs with the Clover Kids, focusing on each bug's characteristic.
 - d. Explain the purpose of the Venn diagram.
 - e. Ask the Clover Kids to sort the bugs onto the Venn diagram by comparing the different characteristics:
 - i. Fly – Jump - Both
 - ii. Fly – Crawl – Both
 - iii. Allow the Clover Kids to compare other characteristics
4. **Bring the group back together for review.**

- Enough copies for each Clover Kid of the
 - Bug pictures
 - Venn diagram
- Scissors

Gather all materials before you begin.

Related 4-H Projects

- Entomology

Related Careers

- Entomologist

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Review the different characteristics of the different bugs.

Apply: How does the activity pertain to real life?

- Discuss which are beneficial to the environment, which are pests.

Adaptation: Real bugs or plastic bugs can be substituted for the paper pictures.

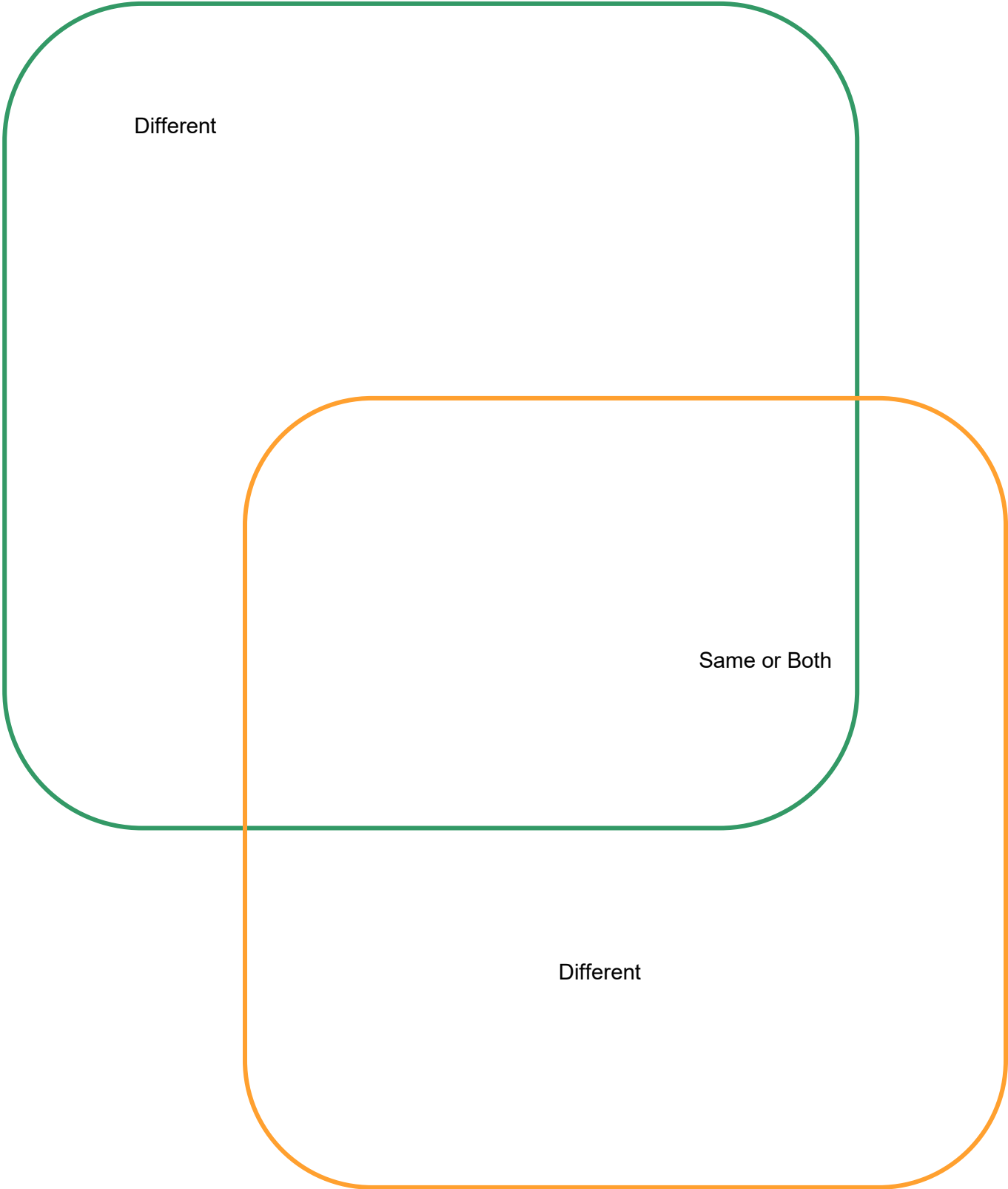


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Venn Diagram – sort by characteristics



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How Old are Trees?

Learner Outcomes

The Clover Kids will calculate the age of a tree.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Ask the Clover Kids if they know how to determine the age of a tree.
 - b. Show the Clover Kids a “tree cookie” (slice of a tree trunk) or the included picture.
 - c. Ask the Clover Kids to locate the individual rings on the “tree cookie”.
 - d. Ask the Clover Kids what they think the rings represent.
 - e. Explain that every year trees add one ring or layer of wood to their trunk.
 - f. Ask the Clover Kids to count the rings on the “tree cookie”.
 - g. Have them share – how old was this tree?
4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Compare the Clover Kid’s ages to the age of the tree.
- Ask if they are surprised at the age of the tree.

Apply: How does the activity pertain to real life?

- Discuss what a tree needs to grow.
- Discuss how old some of the trees might be in their neighborhood.
- Ask what stories a tree might be able to tell “if, it could talk.”
- Discuss the importance of trees.

Materials Needed

- Slices of a tree trunk (tree cookies) or copies of the attached example.

Gather all materials before you begin.

Related 4-H Projects

- Forestry
- Wildlife

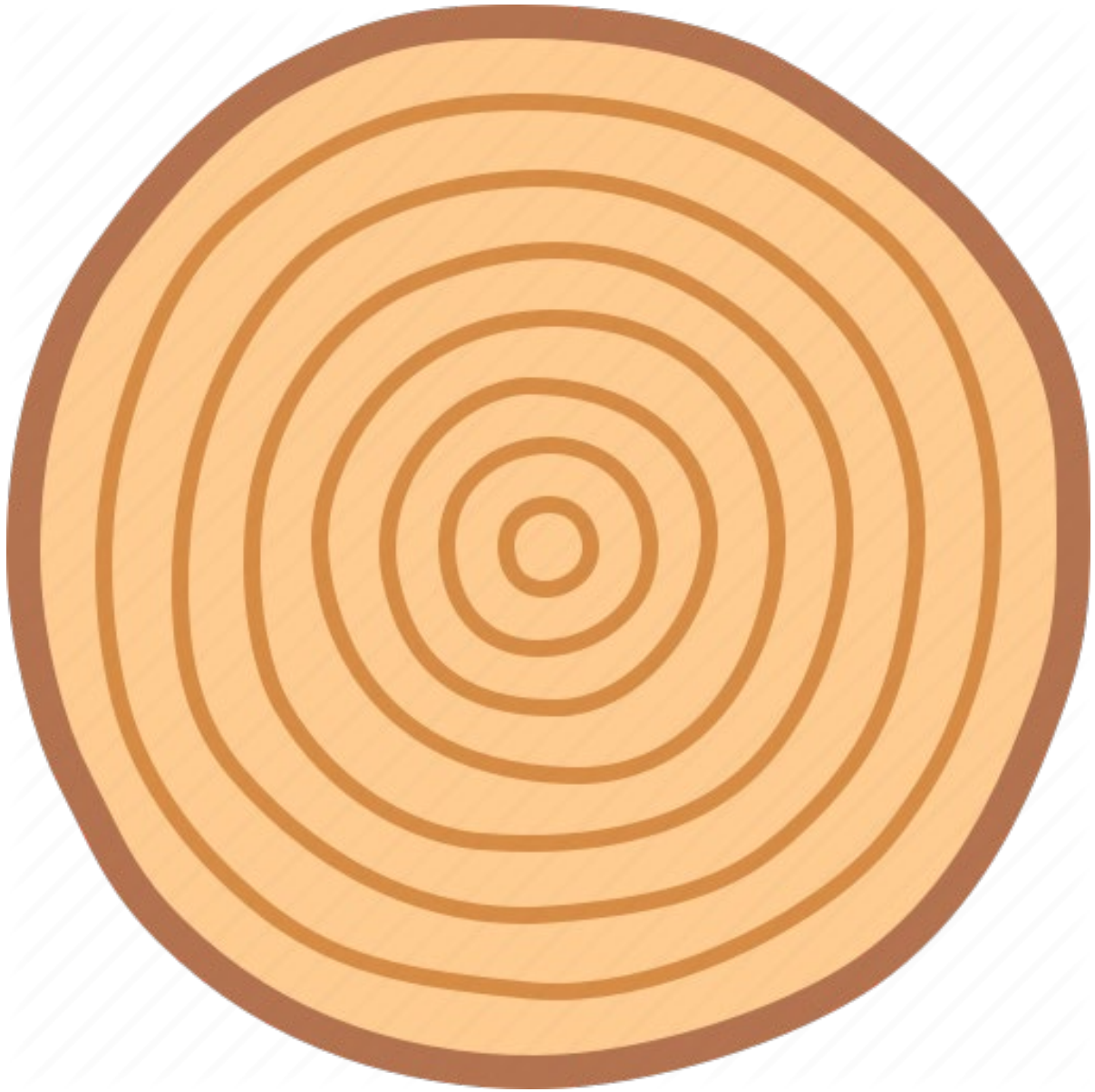
Related Careers

- Dendrologist



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Paper Tree Cookies



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Make a Leaf Track

Learner Outcomes

The Clover Kids will use a leaf to make a track (print) in salt dough.

Activity Instructions

1. **Discuss** safety/expectations and ask for clarification.
 - a. Dough is not edible
2. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
3. **Steps to follow:**
 - a. Follow the recipe below to make the salt dough.
 - b. ½ cup flour; ¼ cup salt; ¼ cup water
 - c. Mix measured ingredients together in a small bowl, forming a ball.
 - d. Dust the counter surface with a bit of flour to prevent the dough from sticking to the surface.
 - e. Remove the dough from the bowl and roll into a ball until it is not sticky, adding a bit of flour if needed.
 - f. Divide the ball into 3 or 4 smaller balls. Flatten one ball into a small pancake and press a leaf into the dough. Repeat for remaining dough and leaves.
 - g. Carefully remove the leaf and let the dough dry.

NOTE: The leaf tracks can be baked slowly in the microwave – start with 1 minute, repeat as needed. Be careful – the dough will burn.

4. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Discuss the types of leaves used to make the tracks.
- Discuss the different tracks focusing on whether the vein side of the leaf was up or down when pressed into the dough.

Apply: How does the activity pertain to real life?

- Discuss “what/who” leaves tracks and where do they leave them.
- Do people leave tracks? (footprint, fingerprint)
- Do animals leave tracks?

Materials Needed

- Salt dough:
 - Flour
 - salt
 - water
- A small bowl
- Spoon
- Measuring cups
- Dry counter space
- 4 to 6 different species of leaves

Gather all materials before you begin.

Related 4-H

Projects

- Forestry
- Wildlife
- Horticulture
- Environmental Science

Related

Careers

- Dendrologist
- Conservation agent
- Detective

References

Variations of the salt dough recipe can be found in many curriculum books and on the web.





Tree Leaf Identification

Learner Outcomes

The Clover Kids will identify leaves collected from different species of trees.

Activity Instructions

5. **Discuss** safety/expectations and ask for clarification.
 - a. Be careful to not damage a tree by pulling leaves from the branches.
6. **Do the activity:** allow plenty of time for the Clover Kids to complete the activity.
7. **Steps to follow:**
 - a. Carefully collect 4 to 6 leaves from trees in your yard or neighborhood. Place them in a container or zip lock baggie.
 - b. Once you have returned to your meeting space – identify the leaves by using the tree identification booklet.
8. **Bring the group back together for review.**

Reflection/Discussion

Review: How the activity ends – may include the Clover Kids discussing what they learned; or what happened and why.

- Discuss the different species of leaves collected. Are they native to Missouri?
- What do trees need to grow and thrive?
- Are the trees you identified leaves from considered an invasive species in Missouri?
- What will happen if – you place a leaf vein side up under a piece of paper and color over it using the flat, long side of a crayon?

Apply: How does the activity pertain to real life?

- What do the trees provide for you, your yard or community? (Shade, food, shelter for animals?)

Materials Needed

- A small writing tablet or journal
- A pencil
- Tree identification booklet from the Missouri Department of Conservation

Gather all materials before you begin.

Related 4-H Projects

- Forestry
- Wildlife

Related Careers

- Dendrologist
- Conservation agent

References

A Missouri Department of Conservation tree identification tool is listed at this site
[https://nature.mdc.mo.gov/discover-nature/field-guide/search?f\[0\]=field_fg_types:5591](https://nature.mdc.mo.gov/discover-nature/field-guide/search?f[0]=field_fg_types:5591)



4-H Clover Kids

Activity Guide



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.

