4-H Ontario
Online Explore 4-H Project

Welcome to 4-H Ontario's Online Explore 4-H Project

Are you a 4-H'er or interested in seeing what 4-H is all about? Do you want to complete a 4-H project while club activities are suspended due to COVID-19? Here's what you can do!

Step 1. Enroll with 4-H Ontario (if you haven't already)

Ensure that you have registered with your local 4-H Association. If you haven't already done so, here's who you can talk to:

- Visit your 4-H Association website to find your Membership Coordinator information (start here: https://www.4-hontario.ca/4h-in-my-area/) or
- Reach out to the Coordinator, Volunteer Support for your Region
    - Region 1: region1@4-hontario.ca
    - Region 2: region2@4-hontario.ca
    - Region 3: region3@4-hontario.ca
    - Region 4: region4@4-hontario.ca
    - Region 5: region5@4-hontario.ca
    - Region 6: region6@4-hontario.ca
- Having your login and password for the 4-H Ontario website will be beneficial so that you are able to access the manuals, if you want to, that correspond to the activities for the project work. Contact database@4-hontario.ca if you need assistance with your login and password.

Step 2. Register for the Project

Register for the project by completing the online registration form at this link: https://forms.gle/nXqXGL1S6R9SEz6P8

Step 3. Complete project work

In order to achieve this project, you must do the following:

1. From the ***Project Work*** list below, complete any of the six activity options (i.e. complete activity options #1, 5, 7, 9, 15, 21) as described
2. Share out the activities you've completed via social media and tag @4HOntario on Facebook and @4h.ontario on Instagram. Join the 4-H Ontario Online Explore 4-H Project group on the 4-H Ontario Facebook Page to connect with others that are completing this project!
3. Submit the completed activities in a single file (Word or PDF) to programstudent@4-hontario.ca by September 1st.
4. The activities submitted will be reviewed and approved for completion
5. Success! You will receive completion for the "2020 Online Explore 4-H Project"!

Step 4: Start again!

Complete the requirements above using six different Activity Options and you can get another project credit! Just remember activity options need to be different for each project completion (i.e. 6 activity options completed = 1 project; 12 activity options completed = 2 projects, etc.).

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Project Work

As noted in Step 3: Complete Project Work, in order to achieve your project, you will need to complete six of the following Activity Options (i.e. #1, #5, #8, #15, #24 and #29). There are 50 different Activity Options from which to choose, from a variety of 4-H Ontario project resources. Look for the Required Submission Information as you will need to complete that for each Activity Option and send one file to programstudent@4-hontario.ca for review and approval to complete the project. If there are any worksheets or supporting information that you require to complete the Activity Option you will find them at the end of this document in Appendix 1 for reference and use.

If you have any questions along the way, please reach out to programstudent@4-hontario.caand we will get back to you as soon as possible.

Have fun exploring 4-H!

Activity Option #:	4-H Ontario Project:	Activity Description:	Required Submission Information:
1.	Adventures In STEM!	**Complete any two** of the following activities from the Adventures In STEM project: • Colour changing milk (Activity #2) • Lemon Volcanoes (Activity #38) • Sun S'mores Solar Cooker (Activity #4)	Submit a photo of your completed item (i.e. for Lemon Volcanoes take a picture of volcano before and after it erupts) and a short description of what you observed when doing the activity.
2.	Adventures In STEM!	**Bake a Chemistry Cake** Complete the Bake A Chemistry Cake as outlined in Adventures In STEM project Activity #5 (Adventures In STEM page28).	Photos of your labelled cakes and the feedback you have

3.	Adventures In STEM!	**Explore a career in STEM (Science, Technology, Engineering, Math)** Do research on a career in a STEM field and find the answers to at least the following questions: • Career title • Job description • How is this career related to STEM? • What kind of schooling/training do you need for this career? • What would a typical day in this career look like? • Would you consider this career, why or why not?	Submit a report that outlines the research you did with the answers to the questions noted.
4.	Adventures In STEM, (and animal/livestock projects)	**Make a toy for your animal** What help keeps the animal healthy? Just like people, animals need the right food, clean water, grooming, rest and exercise. Exercise is best when it uses the animal's natural skills and instincts like climbing, swimming, hunting, fetching or digging because exercise in this form conditions the animals' brain, as well as its body. Sketch out an idea for a new toy that will excite your animal and create a report on what materials you would use, size of the toy, intended use and why it is a good toy for the animal. This activity is on page 49 of the Adventures In STEM project.	Submit your sketch, plan and report.
5.	Adventures In STEM	**Create Your Own Experiment** Are you feeling creative? Do you have a hypothesis you want to test? Try this activity! Design your experiment and record the information on pages 10-12 of the Adventures In STEM record book. Did you know? 4-H Canada has a 4-H Science Fair competition? Check it out at: https://4-h-canada.ca/sciencefair	Submit the completed Adventures In STEM Record Book pages 10-12 along with photos of your experiment.

6.	Pizza Project	**Make Pizza!** For this activity, make three different kinds of pizza from the Pizza Project.	Submit pictures of the three different pizzas you made and feedback about what you would do differently the next time to make the recipe better.
7.	Pizza Project	**Create a New Pizza Flavour** Using the ingredients you have at home create a new pizza! Name it and create a marketing plan including reviews from family members who have gotten to taste it!	Share a picture of your pizza, the recipe, the name, your marketing plan and the reviews from your family.
8.	Horse Project	**Horse Barn Emergency** What would happen if the barn caught on fire? Or if a horse gets loose? Or if someone is injured? The barn is a great place to be but it also presents many dangers. Create a list of the dangers that are found or could happen in a horse barn. Once the list is made, select three of the dangers and create protocols of what to do in each situation. Be sure to include both a plan for what to do in the emergency as well as preventative measures that could be taken so that the danger is minimized or eliminated in future.	Submit your list of the dangers as well as your protocols for the three you chose.
9.	Horse Project	**Complete three** of the following activities from the horse project: • Horse Conformation Word Scramble • Parts of the Horse Wordsearch • The Hoof • Sight of a Horse Diagram • Skeletal Structure of the Horse worksheet	Submit the three activity pages that you completed (photos are awesome!)

10.	Digital Photography	**Focus on Composition** Read pages 32-34 about composition, scout out an object around your home (go for a walk, look in your backyard, etc.) and take 5 photos of that one object using the techniques outlined in on the pages you read. Load the photos onto the computer to review. Review the photos and identify what you like about each of them and what you would do differently to enhance the composition if you were to take the photos again. What other modifications would you want to make in future to enhance the quality of the photo (i.e. lighting, etc.).	Submit your 5 photos with the techniques you used, and include the information outlined (i.e. what you liked, do differently, etc.).
11.	Craft Project	**Get Twiggy With It** From the materials you can find outside and at your house, make either a twig chair, a twig plant stand or create your own twig wreath! Check out your local fair's entry information – you might even be able to enter your piece into the fair!	Submit a picture of your final product and share what materials you used (i.e. what type of tree branch did you use).
12.	Outdoors Project	**Plant Identification** Go for a walk and find five different plants. Either sketch or take a picture of the five different plants. Research what plants they are. Create a one-page report on two of the 5 plants outlining what you found out about the plants during your research (i.e. what is the plant? what is the growing cycle for the plant? Is it a flower, weed, etc.? Where are the plants native to? Etc.). Include your sketches/photos with your report – be sure to identify all 5 of them.	Submit your sketches/photos and your report.

13.	Scrapbooking Project	**Layout Galore** Create three different two-page spreads using four different layout styles. For examples of layouts check out paged 26-28 of the Scrapbooking Project at https://www.4-hontario.ca/file.aspx?id=88d55d58-0b9f-4266-96ea-518ea8ebff2a	Submit photos of your layouts when they are partially completed and the completed layouts.
14.	Craft Project	**Complete two** of the following activities: • Light bulb Santa • Inukshuk • Picture Perfect Word Search • Seed Art (10cm X10cm min. size) There is an artistic display competition for seed art at the Royal Agricultural Winter Fair - you could use this seed art as a plan for a larger version to enter at the RAWF in November!	Take a photo of your finished item and submit them to receive completion of this activity.
15.	Dairy Project	**Complete three** of the following activities: • Safe Animal Handling Quiz (Volume 1) • Body Parts Crossword (Volume 1) • Liquid Manure Safety System worksheet (Volume 2) • Milking Time Magic Crossword (Volume 2) • Milk Nutrient Comparison worksheet (Volume 2)	Share photos of the completed activity pages
16.	Dairy Project	**Learning to Budget** Create a show plan for a heifer outlining what shows you want to take her to, when they are, how you will get her there, what the feed requirements will be to get her show ready, etc. With that in mind, create a budget for your 4-H dairy calf for one season of showing. This activity is from the Dairy Project – Volume 2 – Taking Care of Business	Submit your show plan and budget.

17.	Dairy Project	**Careers in the Dairy Industry** Create a visual representation of the path of the milk from the farm to the grocery store, listing all of the jobs required along the way. Choose two jobs that you have identified and create a report outlining the specifics of those jobs (i.e. job title, hours of work, education requirements, impacts on the dairy industry, etc.). This activity is from the Dairy Project – Volume 2 – Taking Care of Business	Share the visual representation (photos are great!) and the report you created about the two jobs you identified.
18.	Real Dirt on Farming Project	**Virtual Farm Tour** Visit https://www.farmfood360.ca/ and take a virtual tour of one of the farms highlighted there. After you've watched, create a report on what you saw – be sure to answer these questions: • What farm did you visit? • Why did you choose that farm? • What did you learn about the farm you watched? • What careers are involved with this farm? • Where could you find out more information about this type of farming?	Submit the report you created answering the questions noted.
19.	Beef Project	**Choose three** of the following activities: • External Anatomy of Beef Cattle worksheet • Skeletal System of Beef Cattle worksheet • Handling Design System worksheet • Mature Beef Animal's Digestive Tract worksheet • Calving Abnormalities worksheet	Submit the three completed worksheets

20.	Beef Project	**A Stomach At Work** A ruminant's stomach works differently than that of a human. During this activity you will explore how food is broken down in the stomach. Use the instructions on Page 153 (Activity #2) to help you complete this activity. Repeat the experiment using grass or hay. Record the differences that you found between the bread and the grass or hay.	Submit a photo of your two Ziploc bags at the end of the experiment and your record of the differences between the two trials
21.	Beef Project	**Market Animals vs. Breeding Animals** Use the judging checklist chart (page 525), research each line item and create a report that expands upon each line item to include what should be exhibited for a market animal and what should be exhibited for a breeding animal.	Submit your completed judging checklist chart with the additional researched information.
22.	Beef Project	**Antibiotic-free and Hormone-free Beef** Research antibiotic-free and hormone-free beef and beef that is raised with the use of hormones and antibiotics. Check out some online coverage of the issue (be sure to use credible sources). Get a look at the difference in cost to the farmer between these two types of programs and make some decisions about which way you would choose to go with your own herd of beef cattle, if the decision was solely yours. Create a report with your findings.	Submit your report to receive credit for this activity.
23.	Leadership Project *look for the new release coming March 31st to the 4-H Ontario website	**Great Leaders** Think of a person you consider to be a leader (past or present, real or fictional). Research this person to find what they accomplished and what skills they used to reach this goal. Create a short video to feature this person.	Send in the video or a link to the video.

24.	Financial Fitness	**Complete two** of the following: • What Is Your Money Personality? (pg 13-14) • Needs and Wants Worksheet (pg18) • How Much Money Can Be Earned? (Pg 45-46) • Entrepreneurial Self-Assessment Survey (pg. 90) • What is Your Credit Card IQ? (Pg130)	Submit your two completed activities.
25.	Financial Fitness	**Making A Budget** Using Activity 3 (pg122-126) Review the three scenarios provided and analyze their spending to see whether they are on track to meeting their goals. Then, create your budget.	Submit your analyses of the three scenarios and the budget you created.
26.	Foods Project	**Well Stocked Kitchen** Explore your kitchen! Make a list of the food items that you have available in your kitchen – ensure you include fridge, freezer and pantry. When you have your list, using items from the list, make three meals for you and your family. This activity is on Page 55 of the Foods Project Reference Book if you want to take a look.	Share with us the items that you have in your kitchen that you can cook with and the three recipes that you created. Include pictures of the three recipes you cooked.
27.	Foods Project	**Food Preparation Techniques** Prepare three meals/snacks for your family using at least two of the different food preparation techniques listed here: • Slow cooker • Food preservation (pickle, cure, drying) • Baking • Grilling If you'd like to read about these cooking techniques check out the Foods Project pages 60-76.	Share photos of the meals/snacks you prepared, the recipes and whether you would make the recipe again with why or why not.

28.	Building Blocks Engineering	**Largest Structures** Research what the largest structure ever made out of Building Blocks of any kid is. How tall or long was it? How many blocks were needed to build it? Where was it built? Record your findings, sketch a picture of it, and try to replicate a miniature version of it. This activity is from Building Blocks Engineering Meeting 2	Submit the information that you found about the largest structure ever built of Building Blocks, a picture of your sketch and a picture of your miniature replication.
29.	Personal Fitness	**Personal Fitness Goals** Complete the "What Does Personal Fitness Mean To You" worksheet. When that is completed, research different fitness options available to you in your area that could help you achieve your fitness goals. Write a short report on three of the options you researched, why you chose those fitness options, what the cost would be, commitment to complete the activity (i.e. six-week program) and a list of any materials that may be required.	Provide the completed "What Does Personal Fitness Mean To You" worksheet as well as your research and report on the three options you chose.
30.	Personal Fitness	**Fitness Obstacle Course** Using the supplies available to you at your house (inside and out) create a fitness obstacle course. Create an outline that includes the following: • Name of your obstacle course • Materials you need to complete it (i.e. skipping ropes, soup cans for weights, etc.) • Create the instructions for how the obstacle course is to be completed • How long the obstacle course should take to complete • What type of exercise is each part of the obstacle course (i.e. cardio, resistance, etc.)	Submit your obstacle course outline to receive credit for this activity and what you could do to make it more challenging as you advance your fitness level.

31.	Canine	**Your Choice!** Complete **three** of the following activities: • How Well Do You Know Your Dog? (pages 13-15) • Caring For Your Animal (pages 16-17) • Healthy or Not (pages 151-153) • Dog Food Diary (page 208)	Share photos of the completed activity pages
32.	Canine	**Homemade Dog Treats** Either looking online or in cookbooks, find a recipe for dog treats that you can make with ingredients you have in your house. Does your dog have a particular kind of food that they like such as cheese or peanut butter? Be sure to find a recipe that includes this ingredient so your dog will enjoy the treats you make. Once you have found a recipe, make the treats, let them cool and then test your treats with your dog. They'll be the judge as to whether the recipe is a winner!	Share a photo of the treats you made, a photo of your dog enjoying the treats and what you would do differently if you were to make that recipe again
33.	Rabbit	**Your Choice!** Complete **four** of the following activities: • Who Am I? (Breeds of Rabbits) (page 10) • Parts of the Rabbit (page 12) • Feed Trivia (page 17) • Rabbit Facilities Scramble (page 20) • Symptom Match Up (page 28) • Breeding True or False (page 32) • Word Search (page 36) • Do You Speak Rabbit? (page 42)	Share photos of the completed activities.

34.	Poultry – Breeding & Marketing 4-H Project	**Make Your Own Egg Candler** Eggs for table use are candled to see the condition of the air cell, the yolk, albumen, blood spots or meat spots inside the egg. Candling is done in a dark room with the egg held in front of a strong light that lets you see the inside of the egg. Candling is also used to see if the eggs are fertilized and, if they are, to check how the embryo is growing. Want to see the inside an egg for yourself? You can make your own egg candler at home!	Submit a photo of your egg candler in use and share your thoughts on ease of use
35.	Healthy Eating 'Round the Clock	**Your Choice!** For this activity, choose **one (1) recipe from three (3)** sections of this project. The sections are: • Start Your Day the Healthy Way • Munchable Lunchables • Snacks – Anytime, Anywhere • Sounds Like a (Meal) Plan • Dinner At Home • Out on the Town To find the recipes for this, you can find it by logging into the 4-H Ontario website here.	Share photos of the recipes you made and whether you would make them again and why/why not
36.	Judging	**Create Your Own Scorecard** Choose a class (i.e. shoes, peanut butter cookies, etc.) to make a scorecard for, making sure that it is not an item already found in the 4-H Ontario Judging Toolkit. Determine the criteria for the item for judging and the weight of points for each to create the perfect score for the item. A sample scorecard appears in the appendix that shows the criteria and points for judging photography.	Submit your newly created judging scorecard and your reasons about why you picked those criteria and scores for each.

37.	Judging	**You Can Judge It!** When judging, four similar items are typically placed in a class and judged against each other. This can be anything from cookies to pairs of jeans to pickup trucks to livestock. The sky is the limit! Choose four similar items to create a judging class and, using the Judging Format sheet found in the appendix, place these four items and provide reasons for your placings. Have someone else in your household also do this activity and see if their placings are the same or different than yours. Find out what their reasons were for their placings.	Submit a photo of your completed Judging Format sheets, a photo of the class that you judged and a summary of the placings you and your family member chose for the class.
38.	Pollinator	**Your Choice!** Complete **two** of the following activities: • Milk Carton Newspaper Tubes Bee Nest (pages 46-47) • Hummingbird Feeder (pages 50) • Butterfly Planter Boxes (page 51) • Butterfly Puddles (page 52) • Bird Silhouettes (page 53) • Birdfeeders (page 54) • The Very Hairy Caterpillar (page 80) • Seed Balls and Seed Bombing (pages 124-125)	Share photos of the completed activities
39.	Birdwatching	**Start A Bird Journal** A field journal can be a valuable tool that will help you on your birdwatching journey. Document a minimum of 10 different birds in your journal that you have seen in your area. Record where and when you saw the birds, what they were doing and any sounds they were making. Which is your favourite bird that you have seen and why? Did you see any birds that you couldn't identify?	Submit your bird journal – either photos of the handwritten journal or send a Word/PDF copy.

40.	Our Heritage	**Learning About Your Family Tree** How much do you know about your family? After completing the 'Do You Know' Scale, choose one of the Family Tree templates and fill in as much as you can. Then, seek out a family member to help you fill in any blanks. Did you find out anything about your relatives while filling this out that you didn't know before?	Share a photo of your Family Tree and what you learned about your family as you completed this project
41.	Veterinary	**Your Choice!** Complete **two** of the following activities: • Hollow Strength (page 1 – The Bones section) • Belching (page 1 – The Digestive System section) • PH in the Gut (page 2 – The Digestive System section) • Make an Emulsion (page 3 – The Digestive System section) • Respiratory System Crossword Puzzle (page 5 – The Respiratory System section)	Share photos of your completed activities
42.	Community Involvement	**What Is A Vision?** Having goals is an important part to achieving success in your life. A Vision Statement is a mental picture of the future. Using the information as outlined in the Appendix, create a personal vision statement.	Share your vision statement that you have created – be creative with your submission (send a video of you reading your vision statement or a picture of your vision statement written with visuals that support it, etc.)

43.	Ontario's Tasty Fruits & Vegetables	**Your Choice!** In the Recipe Book for this project, there are amazing recipes that you could try from peach muffins to a basic tomato sauce and roasted beet salad to refrigerator pickles. For this activity, choose **three** recipes. The Recipe Book can be found by clicking here. (Note, you will need your 4-H Ontario website login details to access the recipe book. If you need help to login email database@4-hontario.ca)	Submit photos of each recipe you chose to make and whether you would make them again, why or why not.
44.	Swine - Health	**Bacteria Transfer Experiment** In this experiment you will learn about sanitation and the role the farmer plays in disease transmission. The instructions mention three people to do the activity; instead, you will complete the activity three times, as outlined, and write your observations.	Share the answers to the questions that are included in the activity outline (in Appendix).
45.	Loyal To The Soil	**Shake it to Make It!** In this activity, you will experience how soil is made. Grab some rocks, a can with plastic lid and your excitement to shake some rocks!	Share before and after pictures of your rocks in your can and your observations of what happened as you completed the activity.
46.	Sheep	**Let's Make A Feed** Do you like games? Try this one out that highlights what needs to be included in a complete feed for a sheep. Create your card deck – enough so you can play with your family – and have a great time!	Share a picture of your completed card deck along with an example of each component (i.e. what would a macro mineral be).

47.	Breadventure	**Your Choice!** Choose 1 yeast breads and 1 other breads recipe (from the list below) to make for this activity option. No matter what you pick, the end result should be delicious! Yeast Breads: 1. Teddy Bear Bread 2. Pizza Bread 3. Sweet Roll Dough Other breads: 1. Happy Face Apple Muffins 2. Pumpkin Bread	Take a photo of your two completed recipes and share what you liked about the recipes or what you would change when you make them again.
48.	All Projects	**Order That!** In this activity you will test your knowledge of parliamentary procedure to define the steps of a motion and them put them in order. Understanding of Parliamentary Procedure is a skill that 4-H'ers are known to have when they enter the workforce. Employers value this skill!	Share a photo of the steps of a motion and their definitions in order.
49.	Sewing/Quilting	**Nine-Square Pieced Pillow** Everyone needs a nice pillow to lay their head on. In this activity, you will create a pillow for your home.	Submit a photo of your completed pillow and share what challenge(s) you faced and how you overcame the challenge(s).

50.	Good Food Fast *this activity has been added for the Online Explore 4-H Project.	**Six by Sixteen – COMING SOON** Everyone loves to make a quick, delicious and nutritious meal. The Ontario Federation of Agriculture's Six by Sixteen initiative wants to help young people plan and prepare six nutritious, locally sourced meals by the time they are 16 years old. They will be posting video tutorials on how to create recipes and kitchen safety. To complete this activity, you can go to the http://www.sixbysixteen.me website to find the videos and recipes. You'll need to cook two of these recipes and watch the kitchen safety video. [May 29 – the videos are not yet up on the site – we will update the link when they are available. These will be worth the wait!] Thank you to the Ontario Federation of Agriculture for supporting 4-H'ers through the creation and use of these videos.	Submit a picture of the two completed recipes as well as a summary of the kitchen safety tips that were provided.

Appendix 1:

Activity Options

Worksheets & Information

CANADA
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Activity Option 1:

Supporting Materials

Activity #2 – Colouring Changing Milk (15 minutes)

Objective:

- To learn how unusual interactions occur when mixing ingredients and the scientific secrets of soap.

Materials:

- Milk (homogenized)
- Dinner plate
- Four kinds of food colour
- Liquid soap
- Cotton swab

Instructions:

1. Pour about 1/4 of an inch deep (half a centimeter) of milk into a dinner plate.
2. In the center of the plate, add 1 drop from each of the four different food colouring bottles: red, yellow, green and blue, keeping the drops separate, but close together.
3. Put a drop of liquid soap on the end of a cotton swab and TOUCH it (don't move it) to the middle of the milk plate, holding it there for 10-15 seconds.

Discussion:

- Describe and compare with other members in the group what happened in this experiment.
- Why do you think this reaction happen?

Dish soap is made up of "bipolar" molecules (nonpolar at one end and polar on the other) and weakens chemical bonds holding proteins and fats in the milk. Soap molecules join with fat molecules in the milk. Milk with more fat content produces more colourful results because there is are more fat molecules to combine with the soap.

Open-Ended Inquiry Questions:

- What is the reason for the movement of the liquid?
- What variables would you change (independent variables)? What would you keep the same (constant variables)?
- What would happen if you used low-fat milk?
- Will the results change if you use different kinds of soap?

ACTIVITIES

Activity #36 – Judging

1. Bring in a variety of lemons to judge (which will also be used for one of the activities). Before judging, have members create a scorecard.

2. Alternatively, bring in any items (Leader or members) to judge.

Activity #37 - Share your experiment results *(last week's At Home activity)*

After the last club meeting, you were asked to conduct one more experiment at home (individually or in pairs or in groups) and to be prepared to share the results of your experiment today. Share the results of your experiment with all of us. Each person/group will have 10 minutes (15 minutes for senior members).

Activity #38: Lemon Volcanoes

Materials:

- Lemons (2 per volcano)
- Baking Soda
- Food Colouring
- Craft Stick
- Dish soap
- Tray
- Cup & Spoons

Optional Materials: (if you choose to do the open-ended inquiry experiments)

- Vinegar
- Ketchup
- 50-100 ml of 30% hydrogen peroxide (H_2O_2) solution
- Saturated potassium iodide (KI) solution
- Disposable gloves
- Safety glasses

Instructions:

1. Prep your lemon by slicing the bottom off to make them sit flat. Flip the lemon over and slice out the core. If you are making an open-faced volcano, slice the lemon in half.
2. Prepare extra lemon juice by slicing a second lemon in half and juicing it. Pour juice into a cup and set aside.
3. Place your cored lemon on a tray. Use your craft stick to mush the center of the lemon and bring out the juices. Be sure to keep the juice in the lemon!
4. Place a few drops of food colouring or liquid watercolours (do not dilute) in the center of the lemon.
5. Add in a good squeeze of dish soap to the lemon. This is not necessary but causes the bubbles to ooze and froth more and longer.
6. Add a spoonful of baking soda into the lemon. It should start to fizz. Take your craft stick and stir the lemon and lemon juice. It should start foaming really well as you stir it!
7. To keep the reaction going alternatively add more baking soda, colouring, dish soap and the reserved lemon juice to the reaction. Squeezing the lemon to release the juices also enhances the reaction.

Discussion:

- What causes the eruption to happen?

Lemon juice contains citric acid which when mixed with baking soda (sodium bicarbonate) reacts to form carbon dioxide and sodium citrate, which causes the liquid to fizz and bubble. Citric acid is a common food additive used in soft drinks as a preservative and flavouring.

Open-Ended Inquiry Questions:

- Try taking this activity to the next level! Use different combinations of ingredients and compare the level of eruption. Your task is to figure out how much to use to get the right kind of eruption. In this way, you are practicing repeat trials and documenting everything. You will need a volcano-type container, food colouring and dish soap
    - Baking soda and vinegar
    - Baking soda and ketchup

Senior Members *only*)

- 50-100 ml of 30% hydrogen peroxide (H_2O_2) solution and saturated potassium iodide (KI) solution.
- **NOTE**: Wear disposable gloves and safety glasses. Oxygen is evolved in this reaction, so do not perform this demonstration near an open flame. Also, the reaction is exothermic, producing a fair amount of heat, so do not lean over the graduated cylinder when the solutions are mixed. Leave your gloves on following the demonstration to aid with cleanup. The solution and foam may be rinsed down the drain with water.

Activity #4 - Sun S'mores (90 minutes)

Objective:

- To follow simple instructions to build a box solar oven and to learn about sunlight as a source of energy.

Materials:

- Cardboard box with attached lid. Lid should have flaps so that the box can be closed tightly. Box should be at least 3 inches deep and big enough to set a pie tin inside.
- Aluminum foil
- Clear plastic wrap
- Glue stick
- Tape (transparent tape, duct tape, masking tape, or whatever you have)
- Stick (about 30 cm) to prop open reflector flap
- Ruler or straight-edge
- Box cutter or X-acto knife (with adult help)

Instructions:

Part I- Make the solar oven

1. Using the straight edge as a guide, cut a three-sided flap out of the top of the box, leaving at least a 1-inch border around the three sides (with adult assistance).
2. Cover the bottom (inside) of the flap with aluminum foil, spreading a coat of glue from the glue stick onto the cardboard first and making the foil as smooth as possible.
3. Line the inside of the box with aluminum foil, again gluing it down and making it as smooth as possible.

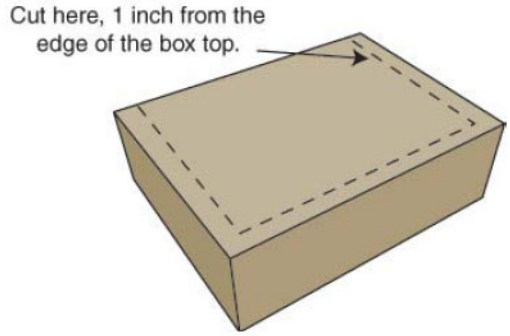

Image Credit: *http://climatekids.nasa.gov/smores/*

4. Tape two layers of plastic wrap across the opening you cut in the lid—one layer on the top and one layer on the bottom side of the lid.
    - Test the stick you will use to prop the lid up. You may have to use tape or figure another way to make the stick stay put.

Part II- Make the S'mores

NOTE: Start cooking at the beginning of the meeting to ensure there is enough time. The time of day is also critical- this activity will have to be done when you have full sun.

Materials:

- Graham crackers
- Large marshmallows
- Plain chocolate bars (thin)
- Aluminum pie pan
- Napkins

Instructions:

1. Break graham crackers in half to make squares. Place four squares in the pie pan. Place a marshmallow on each.
2. **Note:** Unlike most recipes, these s'mores have the marshmallow UNDER the chocolate. That's because, in the solar oven, it takes the marshmallow longer to melt than the chocolate.
3. Place the pan in the preheated solar oven.
4. Close the oven lid (the part with the plastic wrap on it) tightly, and prop up the flap to reflect the sunlight into the box.
5. Depending on how hot the day is, and how directly the sunlight shines on the oven, the marshmallows will take 30 to 60 minutes to get squishy when you poke them.
6. Then, open the oven lid and place a piece of chocolate (about half the size of the graham cracker square) on top of each marshmallow. Place another graham cracker square on top of the chocolate and press down gently to squash the marshmallow.
7. Close the lid of the solar oven and let the Sun heat it up for a few minutes more, just to melt the chocolate a bit.

Discussion:

- What is the basic principle that is powering the solar cooker?
- Does the colour of the surface matter in terms of how hot it can get?

Most solar cookers work on basic principles: sunlight is converted to heat energy that is retained for cooking. Sunlight is the "fuel." A solar cooker needs an outdoor spot that is sunny for several hours and protected from strong wind, and where food will be safe. Solar cookers don't work at night or on cloudy days. Dark surfaces get very hot in sunlight, but light surfaces don't. Food cooks best in dark, shallow, thin metal pots with dark, tight-fitting lids to hold in heat and moisture. One or more shiny surfaces reflect extra sunlight onto the pot, increasing its heat potential.

- When sunlight enters the box through the glass top, the light waves strike the bottom, making it scorching hot. Dark colours are better at absorbing heat, that's why the inside is black. The molecules that make up the box get excited and generate more heat. The box traps the heat, and the oven gets hotter and hotter. The effect is the same as what goes on in a standard oven: The food cooks.

- Some people think solar cooking can help poorer countries around the world, but there are challenges- what do you think are the drawbacks of solar cooking?
    - Solar cooking is really only possible for countries that have a dry, sunny climate for at least half the year. Areas of India, Brazil, Kenya and Ethiopia are some of the ideal locations for this cooking method.
    - The bigger problem is that even in places like India, the sun isn't always shining. Solar cookers won't work at all in nighttime or on cloudy days.

Open-Ended Inquiry Questions:

Experiment S'more with these variables:

- Test with and without a reflector.
- Try different types of heat-absorbing materials for the oven shelf/heat sink.
- Try different types of insulation between the inner and outer boxes.
- Why is it necessary to paint the shelf black and to use black cooking pots? See for yourself! Try black vs. shiny shelf and cooking pots.
- Try re-orienting the oven towards the sun once or twice an hour, vs. leaving the oven stationary.

FUN FACT!

Cool (or should we say "hot") Facts about Solar Energy

Though the sun is 90 million miles (149.6 million km) from the earth, it takes less than 10 minutes for light to travel from that much of distance. If we add the amount of solar energy that is absorbed by the Earth's atmosphere, land and oceans every year, we end up with approximately 3,850,000 EJ (exajoules) or 2.7 million earthquakes!

Source: Conserve Energy Future http://www.conserve-energy-future.com/various-solar-energy-facts.php and Energy Informative http://energyinformative.org/solar-energy-facts/

Activity #5 - Bake a Chemistry Cake (60-90 minutes) *

* Length of time depends if the cakes can be baked simultaneously or one at a time.

Objective:

- To witness how heat creates a chemical reaction and changes things; and to experiment how different ingredients can change the final product.

Materials:

- Small bowl
- Several sheets of aluminum foil
- Pie pan

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Activity Option 2:

Supporting Materials

- Some people think solar cooking can help poorer countries around the world, but there are challenges- what do you think are the drawbacks of solar cooking?
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    - The bigger problem is that even in places like India, the sun isn't always shining. Solar cookers won't work at all in nighttime or on cloudy days.

Open-Ended Inquiry Questions:

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- Test with and without a reflector.
- Try different types of heat-absorbing materials for the oven shelf/heat sink.
- Try different types of insulation between the inner and outer boxes.
- Why is it necessary to paint the shelf black and to use black cooking pots? See for yourself! Try black vs. shiny shelf and cooking pots.
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Activity #5 - Bake a Chemistry Cake (60-90 minutes) *

* Length of time depends if the cakes can be baked simultaneously or one at a time.

Objective:

- To witness how heat creates a chemical reaction and changes things; and to experiment how different ingredients can change the final product.

Materials:

- Small bowl
- Several sheets of aluminum foil
- Pie pan

- Cooking oil
- Measuring spoons
- Cup or mug
- Index card

Ingredients for one cake

(You'll need to measure and mix this set of ingredients four times to complete all four experiments—with the exceptions that are noted below.)

- 6 tablespoons (90mL) flour
- 3 tablespoons (45mL) sugar
- pinch of salt
- 2 or 3 pinches of baking powder
- 2 tablespoons (30mL) milk
- 2 tablespoons (30mL) cooking oil
- ¼ teaspoon (1mL) vanilla
- Butter knife
- ⅓ of an egg (Break egg into a cup; beat until mixed, then use approximately one third of it. Save the rest for 2 of the other cakes.)

Instructions:

1. Wrap several sheets of aluminum foil around the outside of the small bowl to form a mold.
2. Remove your foil "pan" and put it in the pie pan for support.
3. Help the club member coat the inside of the foil "pan" with the cooking oil, or cooking spray so the cake doesn't stick.
4. Preheat the oven to 350 degrees.
5. Mix all of the dry ingredients together.
6. Now, add the wet ingredients (as stated in the ingredient list, only use one third of the egg; save the rest for the other cakes).
7. Stir the wet and dry ingredients until they're smooth and all the same colour.
8. Pour batter into the "pan."
9. Bake in the oven for 15 minutes.
10. After 15 minutes, remove the cake from the oven, set aside, and let cool for tasting later (yum!).

11. Label the first cake #1 on an index card. Make sure to label each cake with its number so it's easy to identify them once they're all baked. Then, go on to bake three more cakes, but with the following differences:

    a. Leave the oil out of one. Label the cake "#2 NO OIL"

    b. Leave the egg out of another. Label the cake "#3 NO EGG"

    c. Leave the baking powder out of the third. Label the cake "#4 NO BAKING POWDER"

Discussion:

Cut each cake in half to examine them.

- Do the cakes look different?
- Do they taste different?
- What did the chemical change and use of heat do to cakes #1–4?

A few things can happen when you bake a cake. Some chemical reactions to keep in mind while doing this tasty experiment are:

- Heat helps baking powder produce tiny bubbles of gas, which makes the cake light and fluffy;
- Heat causes protein from the egg to change and make the cake firm; and
- Oil keeps the heat from drying out the cake.

The cake dough isn't really a cake, but when it's heated in the oven, a chemical reaction occurs and new bonds are formed. How does heat change things? It creates chemical reactions. When it comes to heat and baking, there are two types of chemical reactions to consider; one is "exothermic," a reaction that produces heat, and the other is "endothermic," a reaction that takes heat in. As you bake a cake, you are producing an endothermic chemical reaction that changes batter into a fluffy, delicious treat!

Open-Ended Inquiry Questions:

- What variables would you change if you did this experiment again?
- What if you changed the oven temperature?
- What if you changed the ingredient amounts?

Optional: Consider turning the results of the Bake a Chemistry Cake activity into a judging activity! Judge cakes #1 to #4 against each other. While the cakes are baking, members can create and review a scorecard for judging the cakes.

4-H Ontario
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Activity Option 5:

Supporting Materials

A RECORD OF OUR EXPERIMENT

NOTE: Multiple copies of these Record Sheets will be required for this project.

EXPERIMENT

We want to find out:

_____

_____

_____

HYPOTHESIS

*In science, a **hypothesis** is an idea or explanation that you test through an experiment.*

We think this will happen:

_____

_____

CONSTANTS ("Controlled Variables")

It is important for your experiment to be a fair test. You can change only one factor (variable) and keep all other factors/conditions the same.

To make our test fair, we are keeping these things the same:

_____

_____

VARIABLES

*An experiment starts and finishes with the factors that change during the experiment. These are the **variables**. You will purposely change one of the variables at one time.*

We are only changing:

_____

_____

We will measure: (identify the units you will use to measure)

_____

_____

RESULTS

Now is the time to analyze the data (information) you collected from your experiment and make a conclusion.

We found out that:

_____

_____

_____

We think this is because:

_____

_____

_____

REPEATED TRIALS

You may want to change a variable and repeat the test to see if the results are different.

NOTE: if you have time, it's a good idea to repeat your experiment in exactly the same way (don't change any variables) more than once to be sure your first results are correct.

Trial	Changed Variable(s)	Results
#2		
#3		

COMMUNICATE YOUR RESULTS

Share what you learned.

OBSERVATION SHEET

NOTE: Multiple copies of this sheet will be required for this project.
This observation sheet can be edited to suit the individual activity.

Timeline	Variables/Constants	My Observations
1st observation Date: Time:		
2nd observation Date: Time:		
3rd observation Date: Time:		
4th observation Date: Time:		
5th observation Date: Time:		

4-H Ontario
Online Explore 4-H Project

Activity Option 9:

Supporting Materials

Horse Conformation Word Scramble

Name: _____

Date: _____

chest	hindquarters	shoulder	length	hooves	croup
heartgirth	balance	definition	pastern	throatlatch	gaskin
withers	muscling				

1. ohsveo _ _ _ v _ s
2. trnspae _ _ s _ e _ _
3. nisakg _ _ s _ _ n
4. lrdeusho s h _ _ _ _ _ _
5. tches c _ _ _ _
6. gerrahhtti _ e a _ _ _ _ _ t _
7. purco _ _ _ _ p
8. werhist _ _ t h _ _ _
9. hltaorahctt _ _ r _ _ _ _ a _ c _
10. druerqstahni _ _ _ _ q u _ r _ _ _ _
11. nefiodinti d e _ i _ _ _ _ _ _
12. siumlgcn m _ _ _ _ _ _ g
13. gnhelt l e _ _ _ _
14. blacean _ _ l a _ _ _

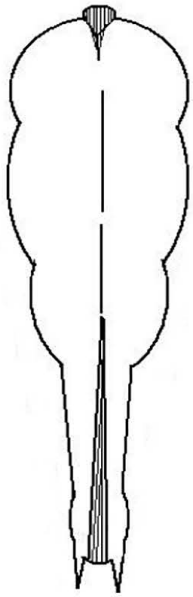
Activity #3 - Parts of the Horse Wordsearch

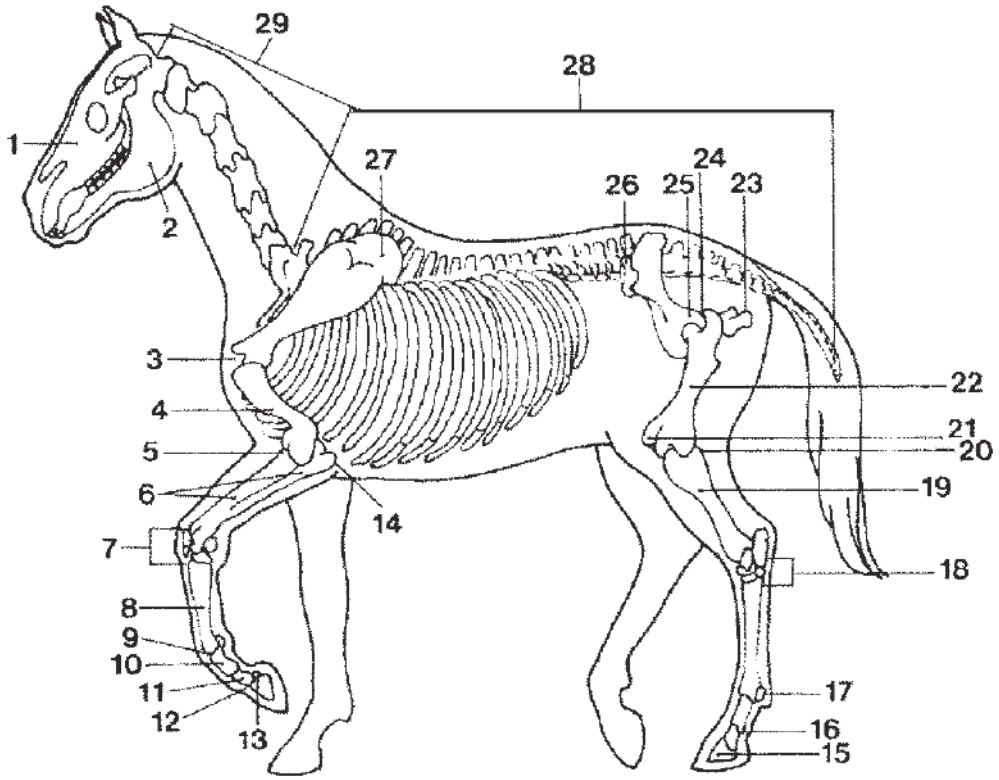
s l u f h n t h r o a t l a t c h w c i
n t f x e e e b f p f k t r q c l r k e
u z i h i t b h a h c n l m u x e v u s
v g e f t f l s o a u c b b v s s d a y
z m l l l k t o b o s h w e t p u o r c
c w o n o e r x c d f e s o h f b o b d
w i n s r j k y e k b e c n b r f a u w
n t o n s r e h t i w k e k e l q l e m
e s s l z k p d b q w n i p v h e g i l
j q t p e h o c k k k z j z l v h c o l
v p r x w r e y b c t x l l u u a i i p
n h i g s p r z t u g w v p k t s k q o
t h l n q q p a w x c m j b n q y e q i
l l o p x n i d b e u u q k a b i o l z
y q m a m o h b b j n y h a l t z p x w
s t u k o n y i r i k p k f f k m y i d
f z r y p n u v k b n q v q c i o b h v
j g c k t a b s d g e m t q m u z z l e
a c s f y c a i f m e d r c f t q y q r
n q y e c g y d n o e y v a t n h o i y

arm
back
barrel
cannon
cheek
crest
croup
elbow
fetlock
flank
gaskin
hock
hoof
knee
loin
muzzle
nostril
pastern
poll
stifle
throatlatch
withers

Activity #2 - Sight of a Horse

Fill in the diagram outlining the horse's areas of vision and blind spots.



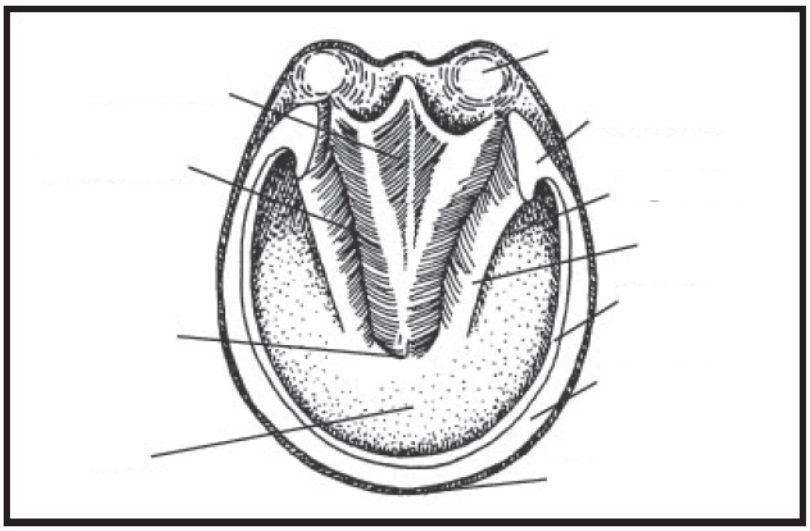


1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____

Activity #2 - The Hoof

Using the following clues, label the parts of the hoof:

1. The back of the foot that hits the ground first as the horse travels _____.
2. The soft, elastic, triangular shaped tissue in the middle of the hoof that helps to circulate blood back up the leg of the horse _____.
3. The thickened raised portion of the wall near the frog _____.
4. The connection between the sole and the wall – at the laminae _____.
5. The protective tissue that covers the bottom of the hoof and is easily bruised _____.
6. The horny growth on the outside of the hoof that supports weight _____.
7. The waxy outer covering of the hoof wall _____.
8. The narrow band at the hairline from which the hoof wall grows _____.



Word Bank

Bar, heel, frog, periople, sole, wall, white line, coronary band

4-H Ontario
Online Explore 4-H Project

Activity Option 10:

Supporting Materials

Composition

The compositional goal of photography is to NOT place the subject dead center in the frame.

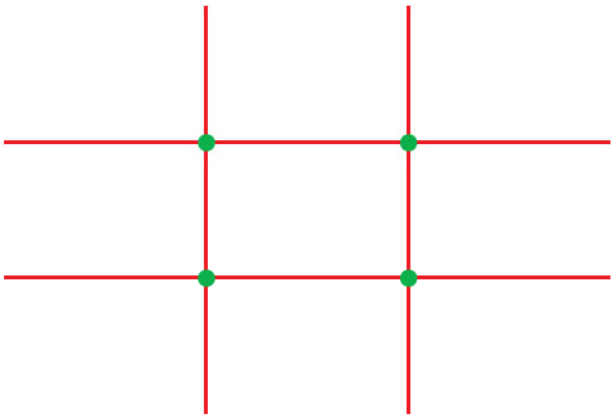
However, as with most rules there are always exceptions. If you are trying to emphasize symmetry for example, you might take a picture of someone's face and have the center point of the image even with the center of their face, making for a very well composed photo that is balanced on both sides.

The Rule of Thirds:

One of the most valuable rules you will learn is the "Rule of Thirds".

Imagine the frame has lines that form a tic-tac-toe board, dividing the frame into thirds from top to bottom and from left to right.

There will be four spots on the frame where the lines intersect. These are the "sweet spots". When the focal point is placed on or near one these spots your photo will have more impact and be more visually appealing to the eye. Once you learn, practice, and understand the rule of thirds, go ahead and break the rules! Experiment!



Framing Your Subject:

A great way to add depth and impact to your photos is framing your subject with an object in the photo. Taking a photo through an archway, or using an open window to frame your subject is a great way to enhance your images.

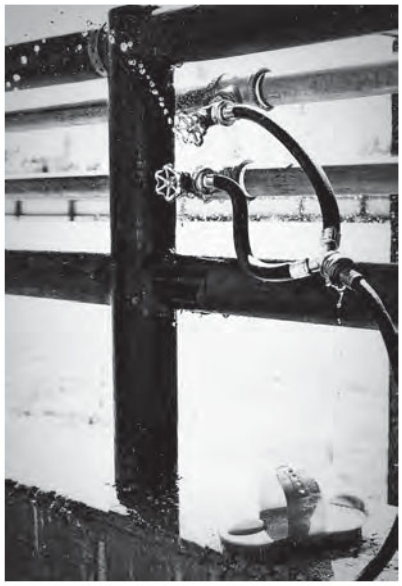
This will take practice and a creative eye, but the results are well worth the effort.

Leading Lines:

By using leading lines you bring the viewer into the photograph. Strong lines like roads, bridges, rows of trees, buildings, walking trails, and fences will add depth to your images. Placing the leading lines using the rule of thirds, will draw the eye into the picture.

Portrait and Landscape:

Portrait shots emphasize height and relative size. Landscape suggest wideness. Consider both views when planning a shot. You will challenge your thinking, and lead to some great pictures.



Suggesting Movement in Photography

Panning:

Using the "Sports/Action" mode, follow the moving subject with your camera keeping the subject in the center of the frame. Press the shutter release halfway down to keep the subject in focus while you pan. This will create a background that is moving but the subject appears to be standing still.

If you have the ability to take multiple frames per second use it! You will probably have to do this several times to get it down pat, but when you do, you will be very pleased with the results!

Suggesting Movement:

Using a slow shutter speed when taking pictures of flowing water will make the water appear to be flowing, while everything else in the photo is in focus. Using a fast shutter speed will freeze the water, giving you fine drops frozen in mid air!

You will need to use a tripod, or hold your camera very steady, for a long expoure shot to turn out. Don't give up!

Intentionally Blurring the Action:

When you can anticipate a moving subject in a particular spot, set up with your camera on a tripod and focus on the background. As the subject passes in front of the camera, squeeze the shutter button, this will keep the focus on the background and make the subject appear to be moving. Examples include, a runner crossing the finish line or a bull and rider exploding out of the stall at a rodeo.

4-H Ontario
Online Explore 4-H Project

Activity Option 11:

Supporting Materials

Twig Chair

General Craft
Nature Craft
Christmas Craft

Intermediate Level

Time: 2 hours

Twig Chair

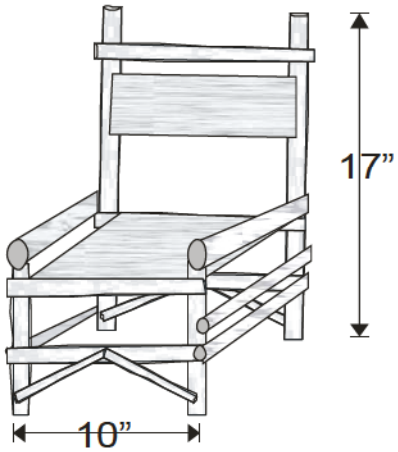
Supplies:
(white birch was used for chair in picture)
Back
- 2 twigs approximately 17” in length and 1 ½” in diameter for back legs
- 3 twigs approximately 10” in length and 1” in diameter
- 2 twigs approximately 6” in length and ½” in diameter

Front
- 2 twigs approximately 10” in length and 1 ½” in diameter (these are front legs and should correspond in diameter and wood type to the back legs
- 1 twig approximately 11” in length and 1” in diameter
- 2 twigs approximately 7” in length and ½” in diameter

Side arms
- 2 twigs approximately 11” in length and 1 ½” in diameter (this is an approximate; smaller or larger may be used depending on effect desired)
- 4 twigs approximately 9.5” in length and 3/4” in diameter

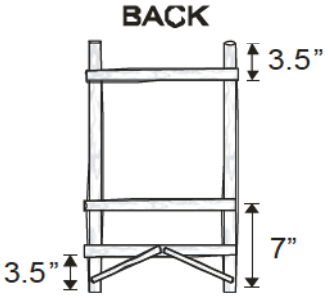
Back and Seat of Chair
- Chair in photo uses a wood shingle for seat and back. If using a wood shingle wait until the chair is complete, then measure the seat and back area and cut shingle to fit.
- More twigs may be used instead for the seat and back.

Equipment:
- Handsaw
- Hammer
- 1 ½” and 2” nails
- Drill (Optional)
- Garden loppers (long handled garden shears)
- Tape measure



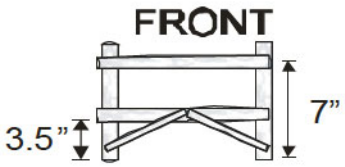
Directions:

Back Assembly
The two longest twigs are used for the legs. Lay them out parallel to each other on the work surface. Nail the first 10” twig to the back legs approximately 3.5” from the top. Nail the second 10” twig to the back legs approximately 7” from the bottom. Nail the third 10” twig to the back legs approximately 3.5” from the bottom. To brace the back, take one 6” twig and place it diagonally from the centre of the bottom brace and the bottom of the leg. Nail in place. Repeat with the second brace. (See diagram)



Front Assembly

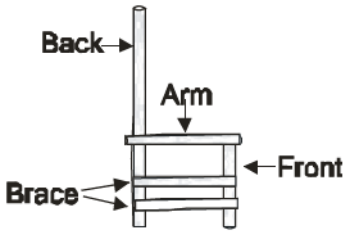
The two longest pieces are used for the legs. Lay them out parallel to each other on the work surface. Nail the first 10" twig to the front legs approximately 7" from the bottom. The middle twig on the back and the top twig on the front should be at exactly the same height to make the chair seat level. This is the seat support. Nail the second 10" twig to the front legs approximately 3.5" from the bottom.

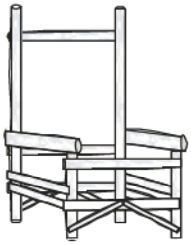


To brace the front, take one 6" twig and place it diagonally from the centre of the bottom brace and the bottom of the leg. Nail in place. Repeat with the second brace. (See diagram)

Side Assembly

The two largest pieces are used for the arms. Nail the arm piece to the top of the front and to the outside of the back leg. Nail the first brace approximately 7" from the bottom. Nail the second brace approximately 3.5" from the bottom. Repeat assembly with the second side.





Back and Seat Assembly

Finish the back and seat of chair using a wood shingle or more twigs cut to size and nailed in place.

You could also use canvas, upholstery fabric, or webbing cut to size and stapled in place.

Tips and Tricks:

When using twigs that are 1" or less in diameter, pre-drilling the holes keeps smaller twigs from splitting.

Comments:

This chair can be used indoors or outdoors year round. Use your imagination!

Twig Plant Stand

General Craft
Nature Craft
Christmas Craft

Intermediate Level

Time: 2 hours

Twig Plant Stand

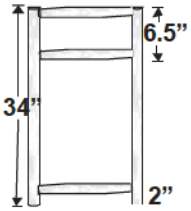
Supplies:

- 4 twigs ¾ to 1 inch in diameter and approximately 34 inches long each for legs
- 16 twigs ¾ to 1 inch in diameter and approximately 14 inches long each for sides, supports and bottom
- Twigs, smaller in diameter for side bracing and decorative edging

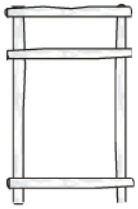
Equipment:

- Handsaw
- Hammer
- 1 ½" and 2" nails
- Drill
- Garden loppers (long handled garden shears)

Directions:



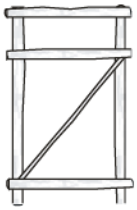
Cut 4 legs approximately 34" in length. Cut 6 of the shorter pieces to 10". Side assembly: Take two long pieces (legs) and place them parallel on the work surface. Nail the first of the 6 smaller pieces between the legs at the very top edge. Take a second piece and nail it 6.5 inches below the top edge, nailing it between the legs. You can change the depth of the box by increasing or decreasing this 6.5 dimension. Nail the third piece 2" from the bottom to form the leg support.
Repeat this procedure for the second side using the same measurements.



To create front and back:
Cut 6 of the smaller twigs to 12" in length. ***Nail these pieces on top of the leg pieces corresponding to the sidepieces. These pieces will correspond with the other sidepieces, i.e. at the very top, at the 6.5" mark and 2" from the bottom.***

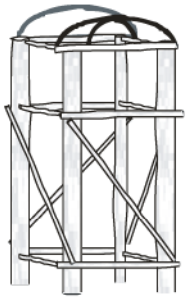
Planter shelf:
Cut 2 or more twigs to 10". Place them between the rails at the 6.5" mark (bottom of the planter shelf) and nail them in place. (These twigs are in between the front and back, in the same manner as the side rails. More twigs can be added if you choose.

Planter side braces:



Use twigs smaller in diameter to make the diagonal brace for each side. Place the twig on the diagonal from top to bottom and measure the length needed. Cut to size. Nail in place.

You can decorate all of the sides or just the front of the planter with pliable twigs such as grapevine or willow. Grapevine is what is used in the picture.



Tips and Tricks:
When using twigs that are 1" or less in diameter, pre-drilling the holes keeps smaller twigs from splitting.

Comments:
This planter can be used year round, in the summer with baskets and flowers and in winter with evergreens and candles.

4-H Ontario
Online Explore 4-H Project

Activity Option 14:

Supporting Materials

2. Picture Perfect Word Search

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

Find the following hidden words:

- photograph
- colour
- composition
- aperture
- viewfinder
- lens
- flash
- reflector
- shutter
- batteries
- tripod
- lighting
- camera
- portraits
- megapixel
- digital
- landscape
- exposure
- blurry
- grainy

Inukshuk

General Craft
Nature Craft
Christmas Craft

Beginner Level

Approximate Time: 1 hour

Inukshuk

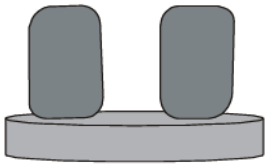
Supplies:

- 3 fat rocks for legs and head
- 3-5 flat rocks for body, arms and shoulders
- Large flat rock for base

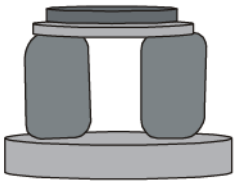
Equipment:

- Glue gun, glue sticks

Directions:

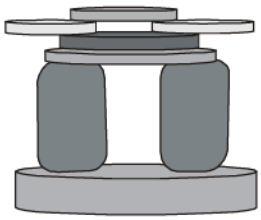


Place the two largest and fattest rocks on the flat rock base. The top edge of the stones should be at about the same distance apart as the length of the largest flat stone that you have.

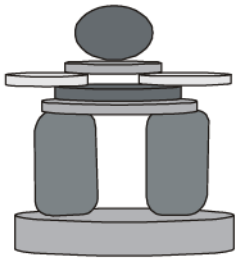


Balance a large flat stone on top of the leg stones. Move it around so it is balanced. Place the next flat stone on top. Move it around until the whole thing is secure.

Choose two smaller flat stones for the arms. Balance them on the body of your Inukshuk. Make sure the arms hang over the body, but are well balanced.



Place a smaller flat stone on top of the "arms" to make the shoulders. (You may find it easier to have someone hold the arms in place, while you balance the shoulders).



Choose a small round stone to be the head. Carefully place this on top of the shoulder stones. If you are doing this as a garden project, make sure all the stones are solidly placed one upon the other to avoid them falling. If you are making this Inukshuk as a piece of art, use the glue gun to glue the stones solidly in place.

Comments:

It is a good idea if you are making this as a piece of art, to place all your stones, and then dissemble the piece, and reassemble setting the stones in place with the hot glue.

This would make a good garden project using larger stones. Place your leg stones securely in the ground and balance the rest of the stones carefully. You may need to use smaller stones as wedges to fill in the spaces and make your Inukshuk solid.

The background section of this manual has an infosheet on the history of the Inukshuk.
This is a good project for an introductory meeting.

Glue guns are hot – treat them with respect.

Light Bulb Santa

Christmas Craft **Beginner Level**

Time: 1 1/2 hours **Cost: Inexpensive**

Light Bulb Santa

Supplies:

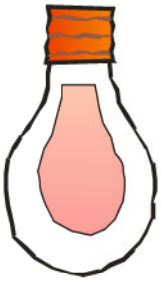
- 1 burnt out light bulb
- 1 white pompom, 2 cm
- Cord to make hanger, 20 cm
- Scrap of fun fur, 10-12 cm
- 1 button for nose
- craft paints – white, red, flesh, blue, black
- textured snow, quilt batting or cotton wool

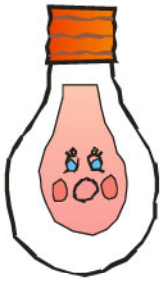
Equipment:

- white glue
- artist paintbrushes
- vinegar
- egg carton (optional)

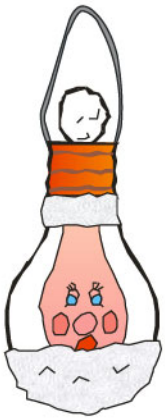
Directions:

1. Clean light bulb thoroughly with a mixture of 1 part vinegar, 2 parts water. Let dry.
2. Paint glass part of light bulb white. Let dry.
3. With "flesh" colour, paint a "U" shape on the light bulb for the face.





4. Paint on eyes. Paint on rosy cheeks.
5. Paint button separately using flesh colour; paint the tip of the "nose" with rosy colour.
6. When dry, put some glue on the light bulb for the nose. Let dry until tacky, then place nose button on the light bulb.
7. Put beard on using imitation textured snow, or spread some white glue on the light bulb, let dry until tacky and attach quilt batting or cotton balls.
8. Paint on a small red mouth.
9. Glue pompom on top of light bulb, and hanger as shown in diagram.
10. Glue on fur where glass and metal join.



Tips and Tricks:

Use a hair dryer to speed up drying time.
Place the light bulb in the egg carton to let glue dry, or to hold the light bulb steady.

Caution:

Light bulbs can break – handle with care!

Comments: These make great Christmas gifts or bazaar items!

Seed Art Information

This is your opportunity to showcase your creative side using seeds, grains and other field crop materials! Here are some basic steps for you to create your masterpiece!

1. Select a backing for your seed art and cut it to 10cmx10cm (hard cardboard, foam core or plywood works really well for this)
2. Create your design and glue it to the backing – let your creativity shine!
3. Select the seeds, grains and other field crop materials that you would like to use to create your design. Remember to gather enough so that the original paper can no longer be seen. If you want to, you can dye your materials using food colouring before putting them on the board to get more variation of colour.
4. Glue the materials onto the board.
5. Celebrate your success! Take a photo so you can submit it with your other project work!

DID YOU KNOW?

The Royal Agricultural Winter Fair has a competition for this type of display for 4-H participants? Check out the information from the 2019 competition below!

Royal Agricultural Winter Fair's 2019 4-H Field Crops Competition - Artistic Display Information

Rules: The artistic display will depict a topic related to "**Agriculture**" using seeds, grains and field crop materials. Displays are to be mounted with a raised border to protect the display.

Size: NOT TO EXCEED 15"x15" (37cm x 37cm) by 1.5" (4cm) deep or exhibit will be disqualified.

- The materials used do not have to be produced by the exhibitor; they may be procured from local producers. Creativity with the topic is encouraged!
- Please note entries from previous years will not be accepted in the current year.
- If the exhibitor is using the 4-H logo, please ensure it is the Canadian or Ontario 4-H Logo. If using a logo in your artistic display, the only logos permitted are the 4-H & RAWF logos.
- The seed, grain or plant materials may be coloured prior to application to the display board base. NO PAINTING, COLOURING OR TINTING OF THE MATERIALS ONCE THEY ARE ATTACHED TO THE DISPLAY BOARD.
- A border is required to protect the entry from damage due to handling.
- Names must be written on the **back** of display board.

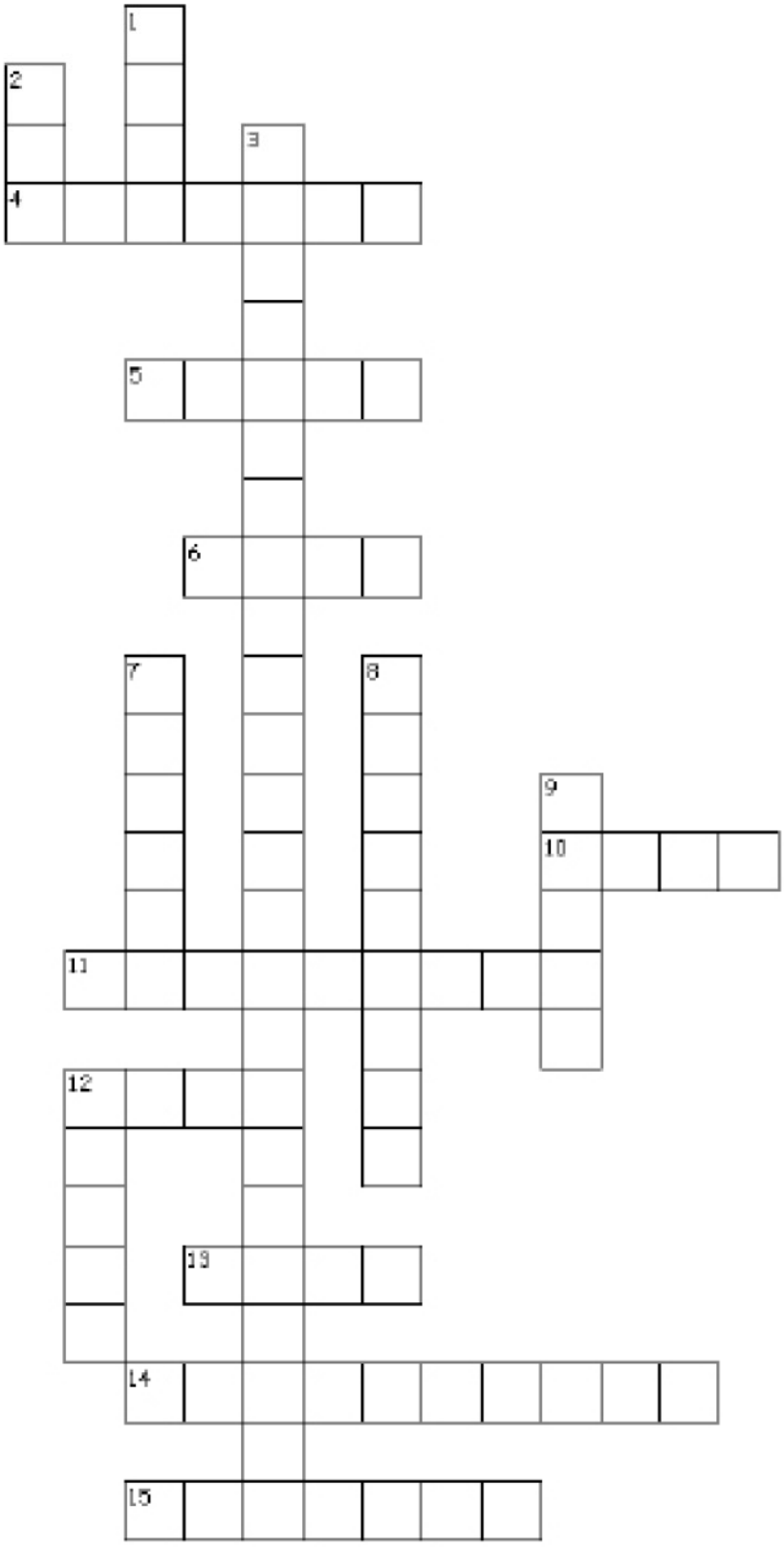
*Keep your eye out on www.royalfair.org for details about the 2020 competition as they become available.

4-H Ontario
Online Explore 4-H Project

Activity Option 15:

Supporting Materials

Body Parts Crossword



Across

4. acts like a human ankle in walking
5. correct size, shape and spacing help avoid injury and make milking easier
6. correct structure helps ease of calving
10. supports the leg and acts like a shoe
11. its attachment should be high and wide
12. a kind of "fly-swatter"
13. contains the spine
14. space for heart and lungs
15. sharp area above the shoulders

Down

1. form the barrel to hold the lungs and other organs
2. joint controlling rear legs
3. should form a deep crease in the rear udder
7. the wider this is, the more she can eat
8. front part of the udder
9. bone between the hip and pin
12. this part of the leg is thin on a "milky" cow

Liquid Manure System Safety

Match 'Em Up – Draw lines to match the corresponding items in the left column to those on the right

1. manure gas	A. enter a liquid manure system without wearing a self contained breathing apparatus
2. never	B. produces manure gas, carbon dioxide and methane
3. liquid manure systems	C. clear, colourless gas which may smell like rotten eggs
4. decomposing animal manure	D. dangerous because of gases produced

True or False

Indicate if each statement is true or false.

_____ 1. See your doctor immediately if your respiratory tract is irritated after exposure to manure gas.

_____ 2. Hydrogen sulphide is not dangerous.

_____ 3. Remove all animals and people from the building during pumping and agitation of liquid manure.

_____ 4. It's okay to let your manure pit fill completely

_____ 5. Manure gas is just as dangerous in spreader tanks as in liquid pits

_____ 6. In some municipalities, bylaws state that you must fence around your liquid manure pits

_____ 7. You should wear a self-contained breathing apparatus if you must enter a liquid manure pit or a spreader tank.

Activity: Milk Nutrient Comparison

Purpose: To compare the nutrients in milk to those in soft drinks.

Age Group: All members

Time Allotted: 10 minutes

Preparation & Equipment: Collect empty pop and milk containers. The more different products you give for analysis, the longer the activity will take (i.e. soft drink, 2% milk, skim milk, chocolate milk, etc.).

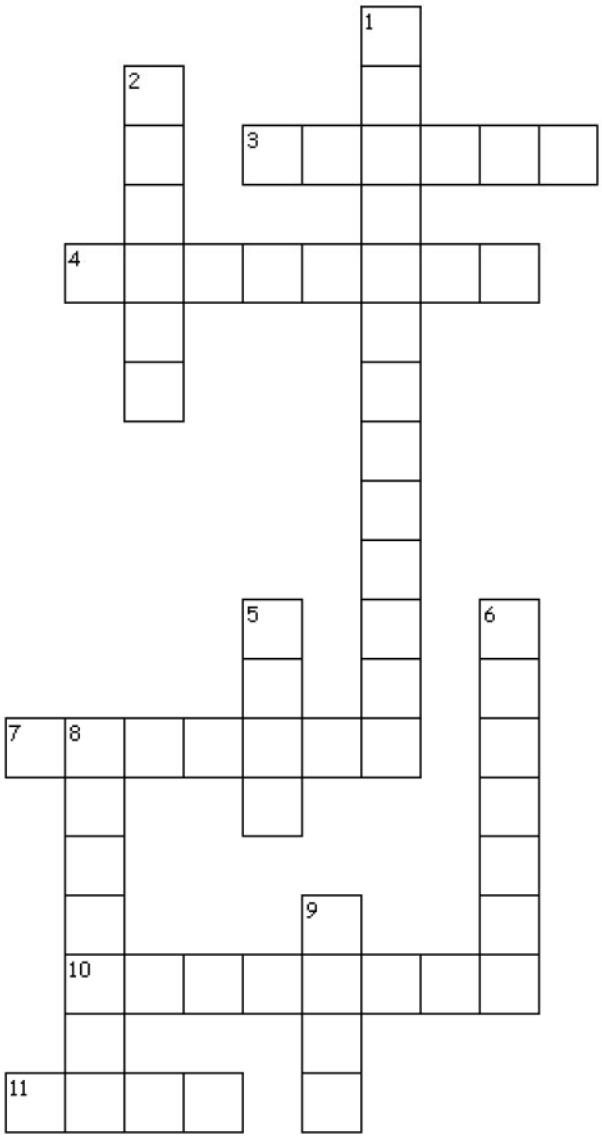
Instructions:

- Members should compare the nutrients in milk with those in soft drinks, creating charts similar to the one below:

Nutrients	Milk	Pop
Calories	_____	_____
Protein	_____	_____
Carbohydrates	_____	_____
Fat	_____	_____
Sodium	_____	_____

Debrief: Which beverage is more nutritious? Which do members prefer to drink? Did the members look at serving sizes? If both beverages had the same serving size, how would they compare?

Milking Time Magic Crossword



Across
3. should always be clean and in good condition, sometimes called a liner
4. where milk is stored on the farm
7. phase of the pulsation cycle where the inflation collapses around the t
10. the hormone responsible for milk let down
11. phase of the pulsation cycle when the inflation is open and in vacuum

Down
1. is the number of pulsation cycles in one minute
2. space from which most of the air is removed
5. duct system includes this cistern and the udder cistern
6. washing, drying and massaging the udder before milking causes this
8. tiny milk holding sacs in the udder
9. number of functioning well balanced quarters a cow should have

Safe Animal Handling Quiz

1) Which animal causes the most livestock related injuries requiring hospitalization?
   a) bull
   b) cow
   c) goat
   d) horse
   e) sheep

2) Which has the best hearing?
   a) a human
   b) an animal

3) The "flight zone" is:
   a) the farthest a scared animal will run before stopping
   b) the shortest distance between the handler and animal before the animal will move away
   c) the longest distance between the handler and animal before the animal will move away
   d) smaller in large pens

4) What is the best type of footwear when working around animals?
   a) running shoes
   b) rubber boots
   c) leather boots
   d) boots reinforced with a steel toe

5) Which does not happen to animals when they become scared?
   a) their heart rate increases
   b) their rate of breathing increases
   c) their eyesight becomes clearer
   d) adrenaline starts pumping

6) To prevent animal related injuries a person needs to have all but one of these:
   a) common sense
   b) knowledge of animal behaviours
   c) training and experience
   d) a strong electric prod

7) The "point of balance" is:
   a) the middle of the animal
   b) the imaginary line that determines if an animal moves forwards or backwards
   c) usually around the rear of the animal
   d) the height an animal can rear before falling over

8) What are the odds of surviving an attack by a bull?
   a) 1 in 10
   b) 1 in 25
   c) 1 in 20
   d) 1 in 0

9) Which are warning signs to look for when working around livestock?
a) pawing
   b) bared teeth
   c) pinned ears
   d) snorting
   e) raised back hair
   f) all of the above

10) Animals have short memories so they don't remember how they have been treated in the past.
   a) True
   b) False

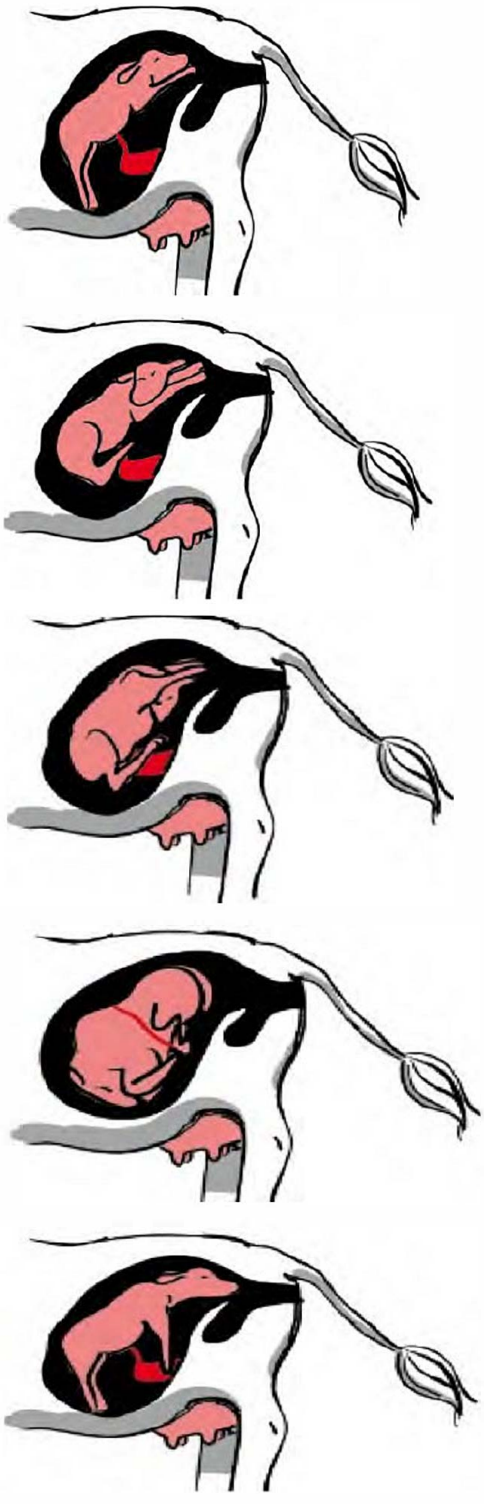
4-H Ontario
Online Explore 4-H Project

Activity Option 19:

Supporting Materials

ACTIVITY #1
CALVING ABNORMALITIES

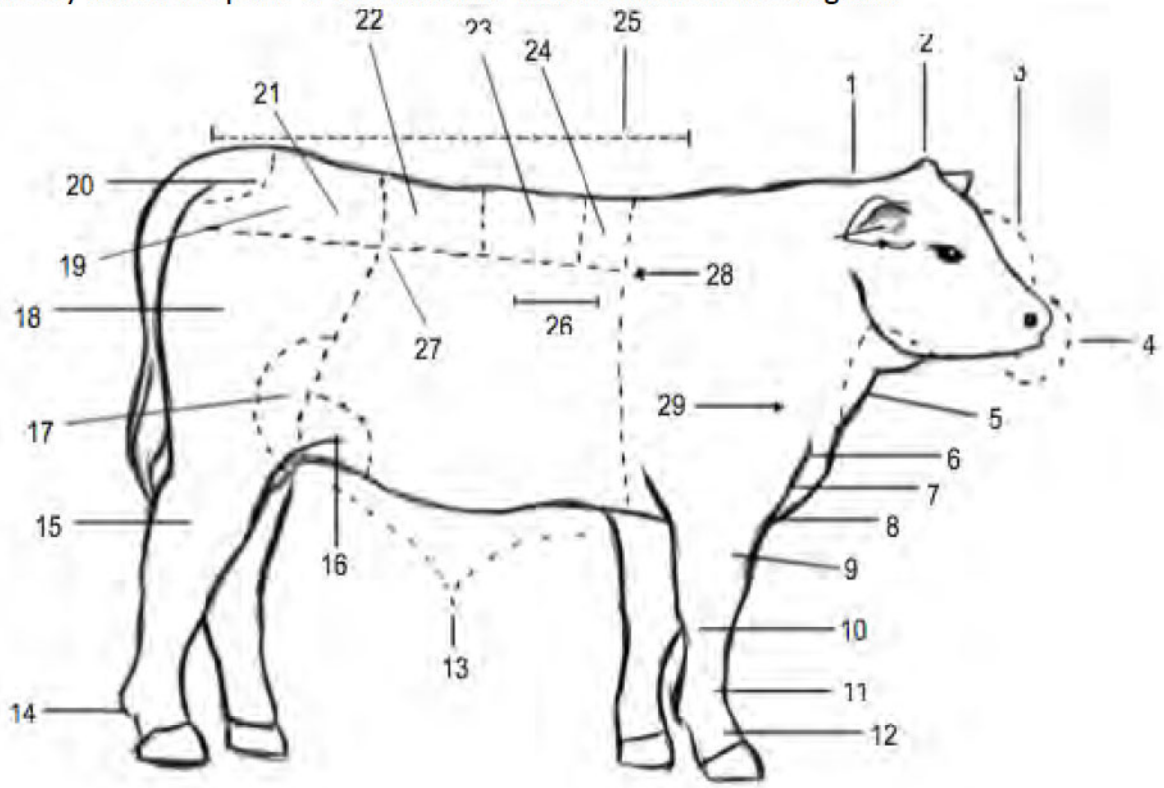
Instructions: Circle and name the abnormal presentations. Write what the implications of these abnormalities are.



Credit: 4-H Alberta

ACTIVITY #1 WORKSHEET
EXTERNAL ANATOMY OF BEEF CATTLE

Correctly match the parts of the animal to their location on the diagram.

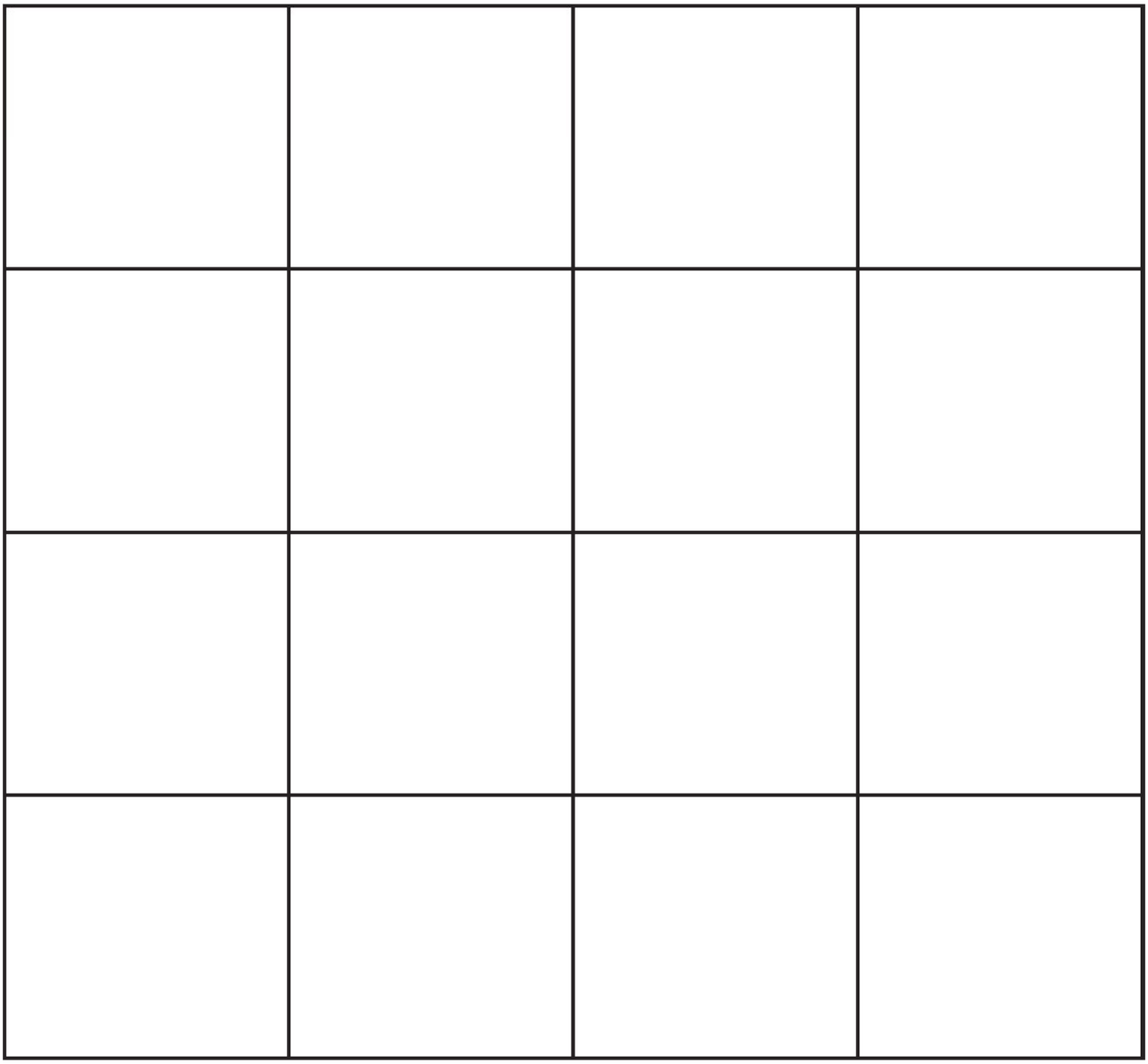


_____Poll	_____Chest Floor	_____Dew Claw
_____Tail Head	_____Ribs	_____Topline
_____Pin Bone	_____Underline	_____Brisket
_____Crest	_____Point of the Shoulder	_____Pastern
_____Quarter	_____Crop	_____Ear
_____Shoulder	_____Back	_____Stifle Region
_____Shank	_____Dewlap	_____Muzzle
_____Knee	_____Flank	_____Loin
_____Heart Girth	_____Hooks	_____Rump
_____Hock	_____Forearm	_____Face

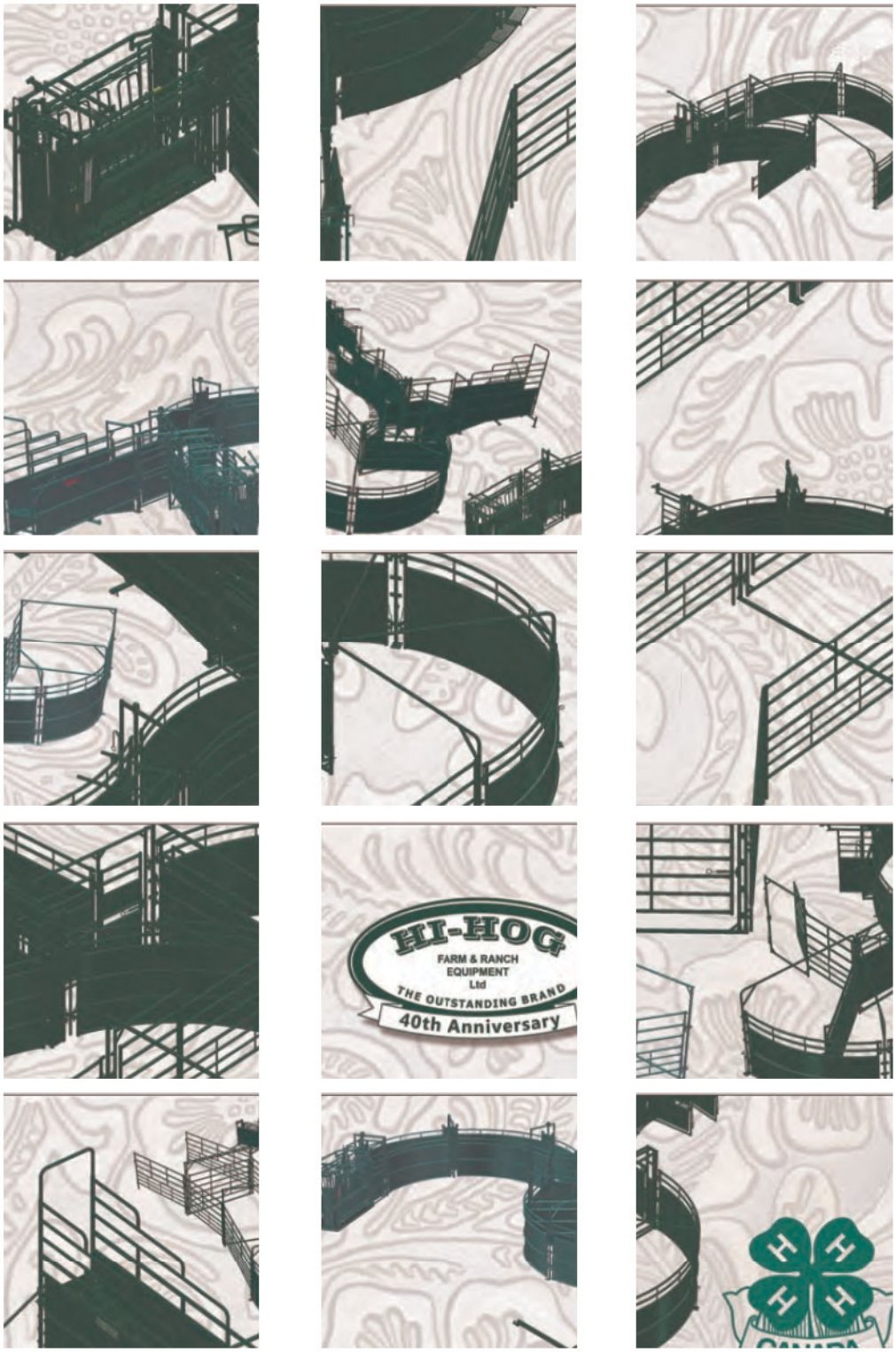
Credit: 4-H Alberta

ACTIVITY #1 WORKSHEET – PAGE #1
HANDLING SYSTEM DESIGN

Instructions: Cut out the puzzle pieces and place them accordingly for a complete image of various cattle handling systems.



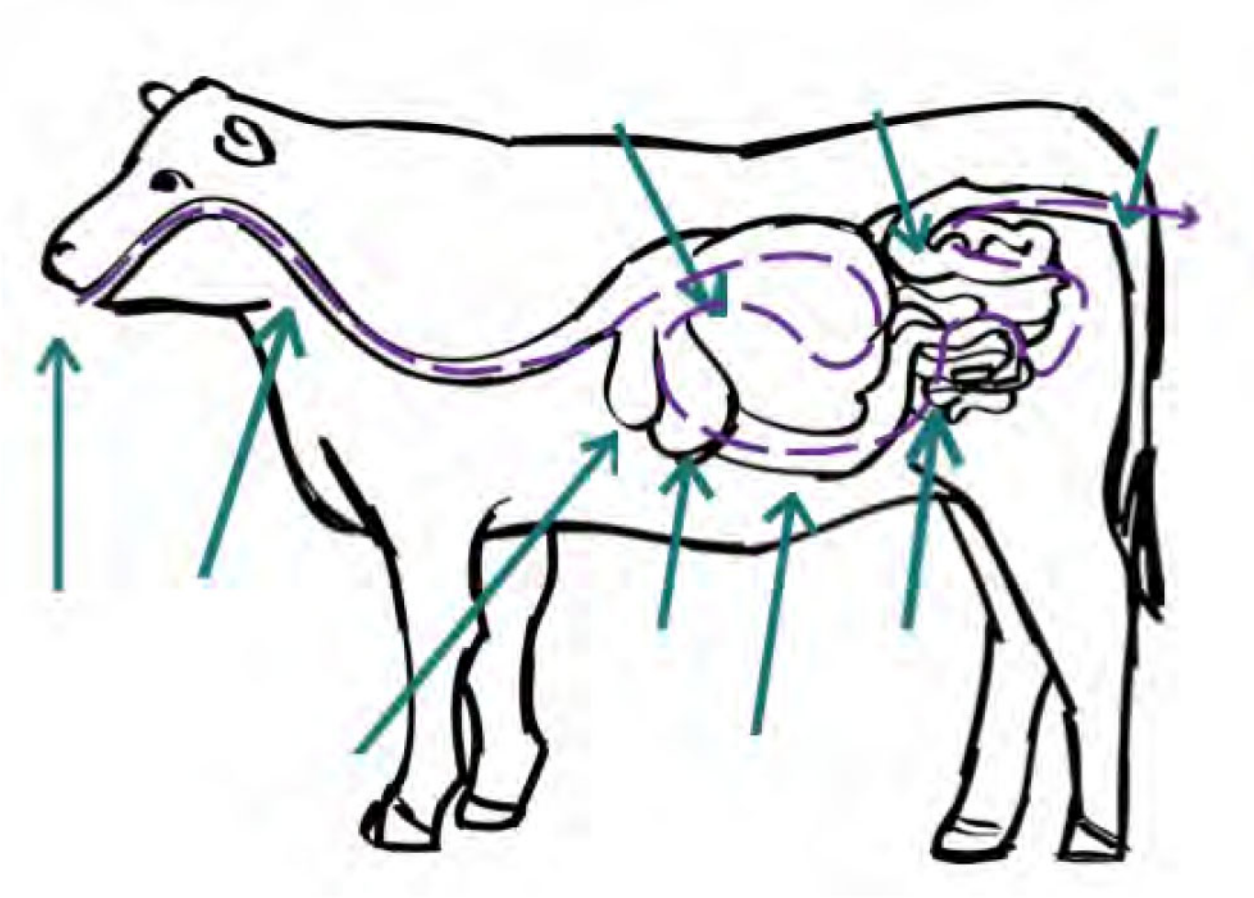
ACTIVITY #1 WORKSHEET – PAGE #2
HANDLING SYSTEM DESIGN



Credit: 4-H Alberta

ACTIVITY #1 WORKSHEET
MATURE BEEF ANIMAL'S DIGESTIVE TRACT

Correctly identify the animal's digestive tract.

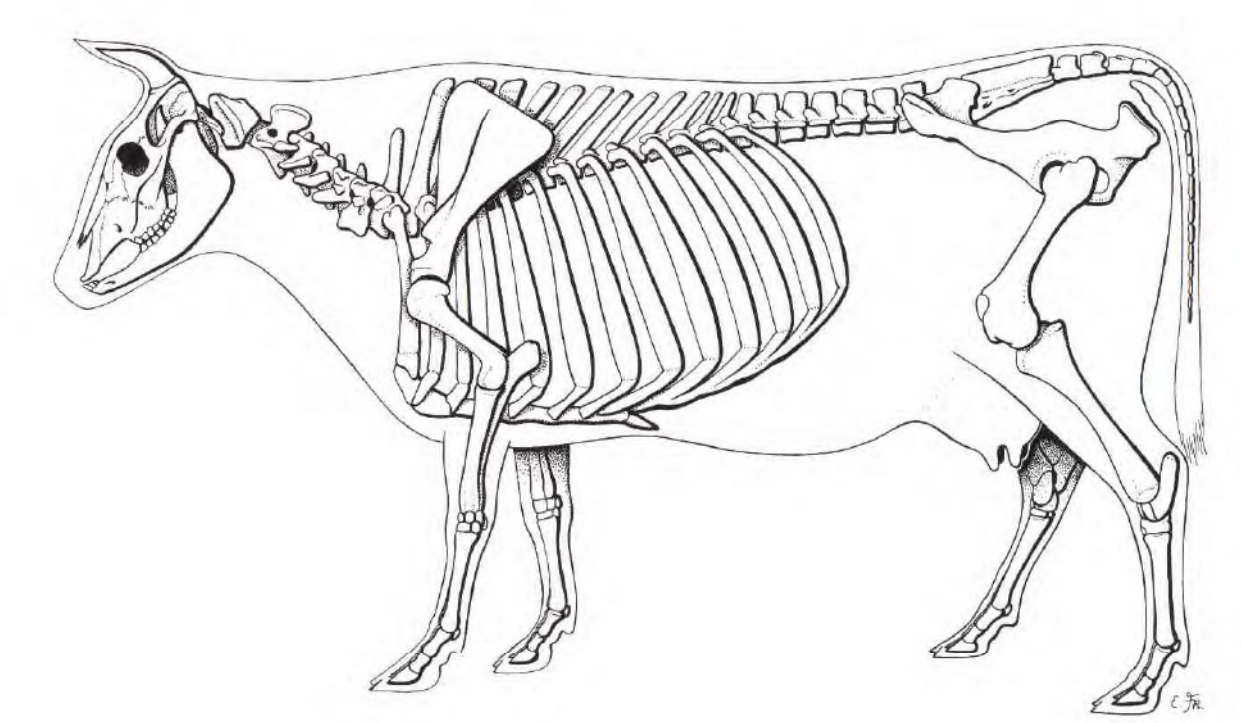


Rumen	Mouth	Reticulum	Small Intestine
Large Intestine	Anus	Omasum	Abomasum
Esophagus			

Credit: 4-H Alberta

ACTIVITY #3 WORKSHEET
SKELETAL SYSTEM OF BEEF CATTLE

Correctly label the bones on the beef animal.



Cannon
Carpus
Cervical Vertebrae
Coccygeal Vertebrae
Femur
Fibula
Humerus
Lumbar Vertebrae
Mandible
Metacarpus
Patella
Pelvis
Phalanges
Radius
Ribs
Sacral Vertebrae
Scapula
Skull
Sternum
Tarsus
Thoracic Vertebrae
Tibia
Ulna

4-H Ontario
Online Explore 4-H Project

Activity Option 20:

Supporting Materials

ACTIVITY #2
A STOMACH AT WORK

DO	Time: 30 minutes Materials Needed: – Bread – Re-sealable plastic sandwich bag – Cola – Hay (ground corn can also be used) – Paper towels Instructions: – Place half a slice of bread in a re-sealable plastic sandwich bag. The bag acts like a stomach - a muscle that contains and squeezes the food. – Fill the bag with 75mL (1/3 cup) of cola. The liquid acts like the digestive juices in the stomach. The digestive juices are stomach acid and enzymes that react chemically with the food in the stomach. Observe what starts to happen to the bread. – Ensure that the plastic bag is tightly sealed. Wrap a piece of paper towel around the bag (the model stomach). – Gently squeeze the paper towel covered plastic bag for two minutes. This will act as the muscles for the model stomachs. Be sure to keep the paper towel wrapped around the bag and be gentle when squeezing the bag. – Remove the paper towel and, without opening the bag, observe what has happened to the contents. – Repeat this activity using hay or grain instead of bread. Observe the difference in how the 'food' broke down in the bag.
REFLECT	Learning Outcomes: To allow members to witness and experience first-hand what the digestive process looks like in the stomach.
APPLY	Processing Prompts: – Think about how your own pets and/or livestock digest their food. Are they monogastric or ruminant animals? – Was it easy or hard to get the hay to start to break down? – Does the type of feed make a difference for the length of time required for food to start to break down?

4-H Ontario
Online Explore 4-H Project

Activity Option 21:

Supporting Materials

JUDGING CHECKLIST CHART

Characteristic		Ideal appearance in market animal	Ideal appearance in breeding animal
Feet and Legs	☐ Legs straight, square and placed wide apart. ☐ No swellings, cracks or lesions in the legs or hooves.		
General Appearance	☐ Appears healthy and alert. ☐ Blended, smooth body. ☐ Widest in the stifle. ☐ Bull thick and massive. ☐ Female refined with udder development. ☐ Evidence of lots of muscle; little waste in the neck and brisket.		
Breed Character	☐ Exhibits characteristics according to breed standards.		
Fertility / Reproductive	☐ Bull – Rugged, massive with a high headset, crest development, superior muscling, large straight scrotum, compact sheath. ☐ Female – Refined and smooth, pins slightly below hooks, width between pins, shows capacity and depth, udder development.		
Condition	☐ Adequate conditioning for intended purpose of animal.		
Structure	☐ Long over the top, long straight legs. ☐ Lots of capacity and depth, large, wide hind. ☐ Moves straight and with ease.		

Credit: https://www.gov.mb.ca/agriculture/rural-communities/4h/pubs/judge-beef-factsheet.pdf

4-H Ontario
Online Explore 4-H Project

Activity Option 24:

Supporting Materials

ACTIVITY #2 - ENTREPRENEURIAL SELF-ASSESSMENT SURVEY

This survey is for your personal information. Please answer each question as honestly as possible.

Strongly (5) Agree (4) Somewhat (3) Agree (2) Strongly Disagree (1)

_____ 1. I am willing to work 50 hours or more per week regularly.
_____ 2. I am willing to accept both financial and career risks when necessary.
_____ 3. I would like to take full responsibility for the successes and failures of my business.
_____ 4. I would experience more financial success by operating my own business.
_____ 5. I feel a great deal of pride when I complete a project successfully.
_____ 6. I have a high energy level that can be maintained over a long period of time.
_____ 7. I enjoy controlling my own work assignments and making all decisions that affect my work.
_____ 8. I have a strong desire to achieve positive results even when it requires a lot of additional effort.
_____ 9. I can function in ambiguous situations.
_____ 10. One or both of my parents are/were entrepreneurs.
_____ 11. I believe that my abilities and skills are greater than those of most of my peers.
_____ 12. People trust me and consider me to be honest and reliable.
_____ 13. I always try to complete every project I start, regardless of obstacles and difficulties.
_____ 14. I am willing to do something even when other people laugh or belittle me for doing it.
_____ 15. I can make decisions quickly.

Score Assessment Evaluation

57-75 You have outstanding potential to become an entrepreneur.
38-56 You have satisfactory potential to become an entrepreneur.
21-37 You could work towards entrepreneurship by focusing on strength development.
15-20 You might explore other career options in addition to entrepreneurship.

Adapted from the Women's Initiative for Self-Employment: http://nebraskatickettowork.org/sites/ttw.unl.edu/files/self-assessment

ACTIVITY #2 - HOW MUCH MONEY CAN BE EARNED?

AGES 9-13

Lunch Time Puzzler

The school cafeteria is making members think before they buy a lunch item. The prices are all written in code!

Code: A = 1 B = 2 C = 3 and so forth until you get to Z = 26

To figure out what each snack item costs, you must first find out what number goes with each letter in the word. Then, add the numbers that "spell" each word to get the price.

For example:

C H I P S

3¢ + 8¢ + 9¢ + 16¢ + 19¢ = 55¢

JUICE

___ + ___ + ___ + ___ + ___ = ___

CHEESE

___ + ___ + ___ + ___ + ___ + ___ = ___

CRACKERS

___ + ___ + ___ + ___ + ___ + ___ + ___ + ___= ___

GRANOLA

___ + ___ + ___ + ___ + ___ + ___ + ___ = ___

CARROTS

___ + ___ + ___ + ___ + ___ + ___ + ___ = ____

ACTIVITY #2 - HOW MUCH MONEY CAN BE EARNED?

AGES 14-17+

Using the worksheet below, calculate how much money can be earned over time.
Original Deposit = $100

	Starting Balance	Interest Rate per year	Interest Earned	Balance at the end of the year
First Year	$100	4%	$4.00	$104.00
Second Year	$104.00	4%	$4.16	$108.16
Third Year				
Fourth Year				
Fifth Year				

If you change the starting deposit in the table to $25, how much money will you have at the end of 5 years at 4% interest?

	Starting Balance	Interest Rate per year	Interest Earned	Balance at the end of the year
First Year	$25	4%		
Second Year				
Third Year				
Fourth Year				
Fifth Year				

References

https://www.wikihow.life/Use-a-Debit-Card
https://www.familyeducation.com/life/money-youth/teaching-basic-money-concepts-youth
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ACTIVITY #3: NEEDS and WANTS WORKSHEET

Tell members that to determine the difference between a want and a need, it is good to ask yourself some questions. Write the following list of items and their prices on a piece of paper or board. The goal is to decide if each item is a want or a need. Explain that sometimes wants and needs are differentiated by what prompts the purchase. For example, if your shoes are worn out, then sneakers are a need. If you're just tired of your old sneakers, then that's a want. Challenge members to justify their responses. Then have the group vote on whether each item is a want or a need.

Items to consider:

ITEM	PRICE	W or N
• sneakers	_____	_____
• manicure	_____	_____
• music lesson	_____	_____
• chocolate bar	_____	_____
• video game	_____	_____
• school lunch	_____	_____
• headphones	_____	_____
• cell phone	_____	_____
• pair of jeans	_____	_____

Some additional discussion questions:

- How long will I use this item? _____
- How often will I use this item? _____
- Is the item worth the money that I will spend? _____
- Is the item a good deal? _____
- One year from now, will I still have this item? _____
- One year from now, will I be happy that I bought this item or will I wish that I still had the money that I spent? _____
- Do I already have another item that serves the same purpose? _____

ACTIVITY #4 - WHAT IS YOUR CREDIT CARD IQ?

Credit cards are handy pieces of plastic. Just swipe them through a slot in a machine – or enter your credit card number online or by phone. The item you want to purchase is yours! But that's the big picture. How much do you know about the details? Test your credit card IQ by answering 7 simple questions.

True or False

1. Credit cards are accepted as cash by stores.
True False

2. Most credit cards have a credit limit.
True False

3. If I pay my credit card in full by the due date, I will not owe any interest.
True False

4. There's no penalty if I pay my balance after the due date.
True False

5. If I pay the minimum monthly payment, then I won't owe any interest.
True False

6. Credit card companies charge merchants a percentage of the price of anything purchased with a credit card.
True False

7. My credit report contains information on bills I have not paid.
True False

ACTIVITY #1: WHAT IS YOUR MONEY PERSONALITY? WORKSHEET

Work with a partner or group to identify the money personalities below. Ask each other the questions, discuss your answers together, and fill in the blanks on your own worksheet with one of the symbols in the box to the right. Next, put an X beside behaviours that describe your spending habits. Does this help you determine your current Money Personality? Finally, make a list of behaviours you want to change to have a better balance between spending and saving.

4 Personality Traits

"FS" = Free Spirit. Spends money without any thought as to where it is coming from or where it is going.

"MS" = Money Star. Likes expensive items that are the hottest, must have items.

"MH" = Money Hoarder. Saves all his or her money and does not spend it even on items or services that would be a good investment in meeting a future goal.

"MW" = Money Wise. Tracks spending and savings with a careful balance of these activities. Knows where their money goes and has a handle on what they want to accomplish financially, what things cost and when to buy items.

1. These shoppers prefer the newest models and top label brands regardless of price.

Money Personality Code_____ Your personality _____

2. These people love a bargain but often purchase large quantities of sale items without considering if they need or want that much.

Money Personality Code_____Your personality _____

3. These people spend money to be recognized, to feel hip or classy, and to look good to others whether they can afford it or not.

Money Personality Code_____ Your personality _____

4.This money personality has no idea how much they earn or spend.

Money Personality Code_____ Your personality _____

5.These people know what they earn and spend, and minimize expenses.

Money Personality Code_____ Your personality _____

6. These people believe more money is always coming. They focus on a short-term spending instead of long-term benefits of saving.

Money Personality Code_____ Your personality _____

7. These people wait to buy something until they can afford it.

Money Personality Code_____ Your personality _____

8. These people believe that the things they have impress others.

Money Personality Code_____ Your personality _____

9. These people buy things of low quality thinking they are saving money, but spend more to repair or replace the low-quality items.

Money Personality Code_____ Your personality _____

10. These people tend to bounce checks, exceed their ATM limit, never have money, or borrow money and forget to pay it back.

Money Personality Code_____ Your personality _____

11. These people save for the future, but also enjoy the present by budgeting for a movie or having dinner with friends.

Money Personality Code_____ Your personality _____

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Activity Option 25:

Supporting Materials

ACTIVITY #3 - MAKING A BUDGET

Budget Samples

Scenario 1

Nate is a junior in high school. He works 15 hours a week at the mall, and his net income after taxes is $600 a month. He lives with his parents, so he doesn't have rent, utility or food expenses. His older brother owns a car and lets him borrow it to drive to work for $50 each month; otherwise Nate takes the bus. He really wants to buy a car, so he puts any leftover money toward savings. Nate also pays for his cell phone and personal expenses, such as going to the movies, buying video games and purchasing gifts.

Below is Nate's estimated budget and what he actually spent in one month's time. Analyze Nate's spending to determine why he is not on track to save for that new car, and what changes he can make to get on track.

Net Income: $600/month

Fixed Expenses	**Budget Goals**	**Actual Budget**
Savings for a Car	$100	$0
Cell Phone	$75	$100
Car Payment to His Brother	$50	$100
Variable Expenses		
Public Transportation	$50	$60
Entertainment	$50	$65
Personal Shopping	$50	$175
Occasional Spending (gifts, repairs, etc.)	$25	$100
Total	**$400**	**$600**

Scenario 2

Maria just graduated from college and accepted her first job as a social media manager for a real estate company. She can't believe that her monthly net income will be $3,000. She just moved into a one-bedroom apartment, so she is responsible for rent, utilities, food and other household expenses. She is paying off a student loan and she wants to save as much money as she can to buy a house someday. She owns a car and enjoys going out with friends on the weekend.

Below is Maria's estimated budget and what she actually spent in one month's time. Analyze her spending to see why she is not on track to meet her goal and to determine what she can do to get back on track.

Net Income: $3000/month

Fixed Expenses	**Budget Goals**	**Actual Budget**
Savings for House	$450	$150
Rent	$600	$600
Car Payment	$350	$350
Car Insurance	$150	$150
Internet/Cable TV	$110	$110
Cell Phone	$75	$105
Student Loan	$300	$300
Variable Expenses		
Gas	$100	$175
Food	$250	$300
Entertainment	$100	$250
Personal Shopping	$75	$300
Utilities	$200	$275
Occasional Spending (gifts, repairs, etc.)	$150	$250
Total	**$2,910**	**$3,315**

Scenario 3

Jamal is a senior in high school and works 30 hours per week at a neighborhood coffee shop. His net income after taxes is $1,500 and he is saving up for college. He owns a car and makes payments toward it each month, but he lives with his parents so he saves on rent, utilities and food costs. He occasionally goes out with friends and buys things for himself, but he tries to hold back on these things so he can save more for college next year.

Below is Jamal's estimated budget and what he actually spent in one month's time. Analyze his spending to see why he is not on track to meet his goal and determine what he can do to get back on track.

Net Income: $1500/month

Fixed Expenses	**Budget Goals**	**Actual Budget**
College Savings	$870	$820
Car Payment	$125	$125
Car Insurance	$95	$95
Cell Phone	$85	$85
Variable Expenses		
Gas	$100	$105
Entertainment	$50	$75
Personal Shopping	$50	$95
Occasional Spending (gifts, repairs, etc.)	$100	$100
Total	**$1,475**	**$1,500**

You just accepted your first job and you'll be earning a gross income of $30,000/year. You live on your own and are responsible for all expenses, including rent, car, insurance, cell phone, utilities, entertainment, food, savings and miscellaneous expenses. You have to pay 25% of your gross income in taxes.

Calculate Your Take Home Pay:
With a gross income of $30,000 and a 25% tax deduction, what is your monthly net income? (Remember this is what you get after taxes.) Use this number to start your budget.

Categorize Expenses:
Determine if your expenses are fixed or variable, and write them in the appropriate sections of the table below. Remember your expenses include: rent, car, car insurance, cell phone, utilities, entertainment, food, savings and occasional expenses.

Name: _____
Net Income: _____

Fixed Expenses	**Cost**
_____	$_____
_____	$_____
_____	$_____
_____	$_____
Variable Expenses	
_____	$_____
_____	$_____
_____	$_____
_____	$_____
_____	$_____
Total	**$**_____

Divide Your Expenses:
Determine the cost for each category and record the prices in your budget. Use the following percentages to divide your monthly net pay:

Rent: 30% of net pay
Utilities: 10% of net pay
Car Insurance: 5% of net pay
Cell Phone: 5% of net pay
Occasional Spending: 10% of net pay
Savings: 10% of net pay

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Activity Option 29:

Supporting Materials

WHAT DOES PERSONAL FITNESS MEAN TO YOU?

1. Why do you think physical activity is so important?

2. What are some of your strengths and limitations around fitness?

3. What is your current fitness level? Are you happy with this level?

4. What areas of physical activity do you like or dislike? (Ex. Sports, weight-lifting, etc.)

5. How can a personalized fitness program benefit you?

6. What are your goals and how do you plan on accomplishing them?

7. What does personal fitness mean to you?

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Activity Option 31:

Supporting Materials

Caring for My Animal

This is a self-assessment tool. Check the things that you are already doing to care for your dog. What are you doing well? What would you like to improve?

I'm already doing well	I want to improve	Care
		Provide adequate housing.
		Feed my dog daily and on a regular schedule.
		Feed a balanced diet.
		Provide access to good quality water at all times.
		Control internal and external parasites.
		Any invasive procedures are performed when dogs are as young as possible.
		Train dog to lead or be handled at a young age.
		Have a planned health program to prevent disease.
		Observe dog daily and get treatment if needed.
		Aware of the signs that my dog is in pain or is suffering.
		Keep feed and treatment records.
		Be aware of dog's comfort (physical and mental) at all times.
		Take the time to understand the behavioral needs (e.g. companionship) of my dog.

ACTIVITY #1

DOG FOOD DIARY

DO	Time: 30 minutes Materials Needed: • chart or diary • pencil/pen • dog food For members with cell phones or other hand-held devices, there are various applications available to help monitor a dog's diet (search for dog nutrition calendar). Instructions: • Ask members to monitor and measure their dog's eating habits between meetings, including any number of the following: How much food the dog receives Their dog's behaviour when they're being fed What time the dog is fed How long it takes the dog to eat Treats given Water intake • As a group, you may decide on other things to monitor such as exercise levels
REFLECT	Learning Outcomes: To allow members to use their observation and recording skills to monitor and understand their dog's nutrition. To allow members to identify patterns and possibly better understand some of their dog's behavioural traits.
APPLY	Processing Prompts: • Does your dog have a healthy diet? • Should you make any adjustments to help improve your dog's health? • Does food affect your dog's behaviour?

Signs of Health in My Dog

Ears

Eyes

Coat Condition

Tail

Nose

Stool

Temperature

Behavior

- Energy
- Appetite
- Interest
- Temperament

Signs of Sickness in My Dog

Coat Condition

Ears

Eyes

Tail

Nose

Stool

Temperature

Behavior

- Energy
- Appetite
- Interest
- Temperament

HOW WELL DO YOU KNOW YOUR DOG?

Name of Dog _____ Date of Birth _____

Gender (neutered or spayed?) _____

Purebred or Crossbred _____ Breed _____

Colour of Coat: _____

Coat Type: _____ Eye Colour: _____

Special Markings: _____

Date of purchase/adoption? _____

Where and who did you get your dog from? _____

Name, address and phone number of your dog's veterinarian:

_____

Include a photo of your dog here. Include the dog's name and any other information not listed above.

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Activity Option 33:

Supporting Materials

Breeding True or False

Here are 15 statements related to rabbit reproduction.
Beside each statement write true or false.

1. Rabbits have a regular heat cycle, every 31 days

2. Some signs that can indicate a doe may be willing to breed including: restlessness, rubbing her chin on the cage or equipment, or slightly swollen and purplish coloured vulva (female sex organ).

3. Decreased light will result in reduced conception rates in rabbits.

4. Male rabbits reproduce more successfully during hot weather (33˚C and above).

5. When you breed rabbits the doe should always be taken to the buck's cage.

6. The gestation period (pregnancy) of a rabbit is approximately 42 days.

7. A totally safe and accurate way to tell if your doe is pregnant is test breeding.

8. If the doe is pregnant you may be able to feel the embryos by palpating her abdomen after 12-14 days.

9. The doe should be left in the bucks cage for 72 hours for breeding.

10. A nest box should be placed in the doe's cage about 25 days after the doe was mated.

11. The doe will pull her fur from her dewlap, chest, and belly and along her sides just before she is to give birth.

12. If a doe kills and eats her babies it means she was malnourished during the pregnancy.

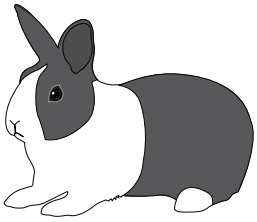
13. Mother rabbits may only go in the nest box once or twice a day to feed the kits.

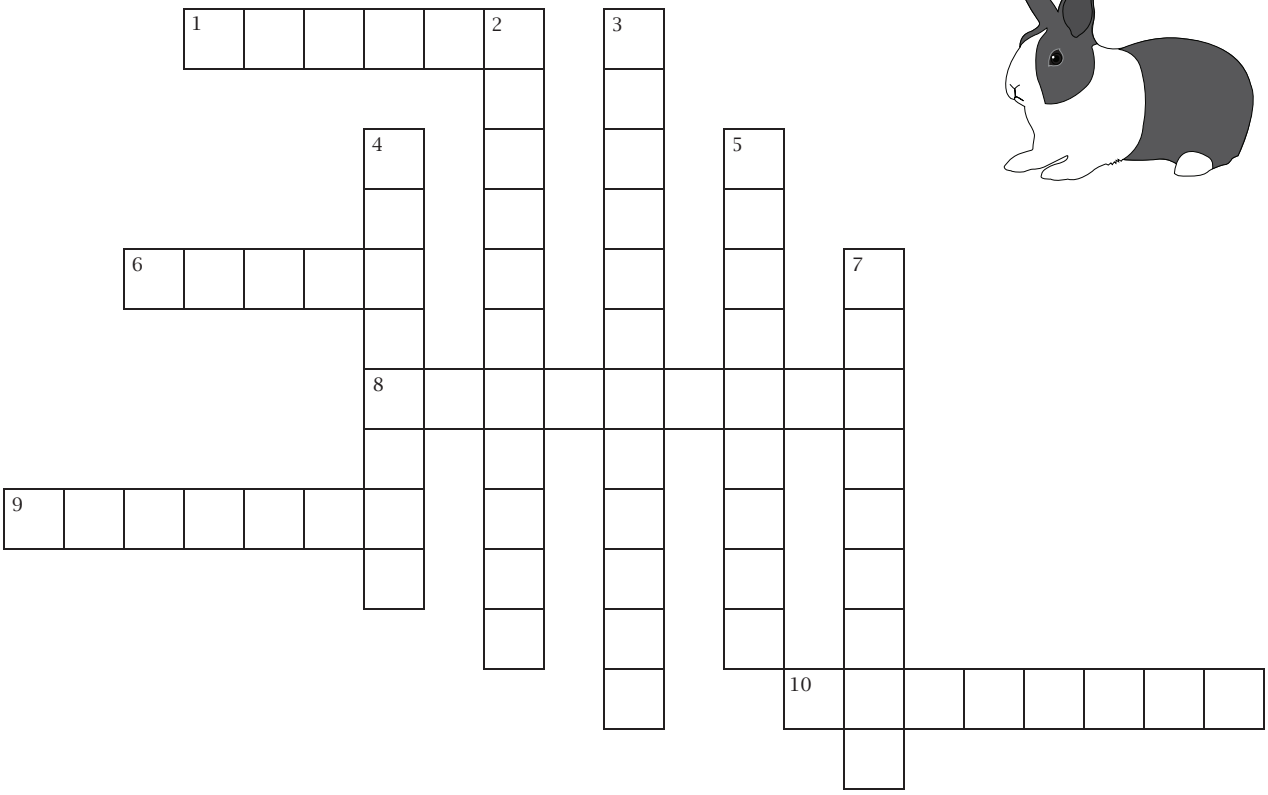
14. Baby rabbits are born with their eyes open.

15. Baby rabbits can be weaned as early as 2 weeks.

Do You Speak Rabbit?

Use the clues below to complete the crossword puzzle using common rabbit terminology.





ACROSS

1. *A code punched in the ear as a permanent method of identification*
6. *A race or special class of domestic rabbits*
8. *The period of time that a doe carries young in its uterus*
9. *A term meaning insufficient markings for the breed*
10. *The process of giving birth to kits*

DOWN

2. *A breeding program involving the mating of unrelated rabbits of the same breed*
3. *The after-portion or posterior section of the body, made up of loins, hips, hind legs, and rump*
4. *A written chart showing the ancestry of a rabbit*
5. *A rabbit-raising enterprise or a place where domestic rabbits are kept*
7. *The physical state of a rabbit in reference to health, cleanliness, texture and molt of fur, and grooming*

Feed Trivia

1. What one nutrient makes up more than 2/3 of our body material?

2. What is the name given to animals that only eat vegetation?

3. What is the name given to animals that eat only meat?

4. What nutrient is mainly responsible for cell growth in animals?

5. Animals require food for what three purposes?

6. What does the term nutrient apply to?

7. What four minerals are important to livestock development?

8. What does a proper diet help the body do?

9. What are some good sources of carbohydrates?

10. What three main groups can feeds be divided into?

11. Can rabbits be over fed?

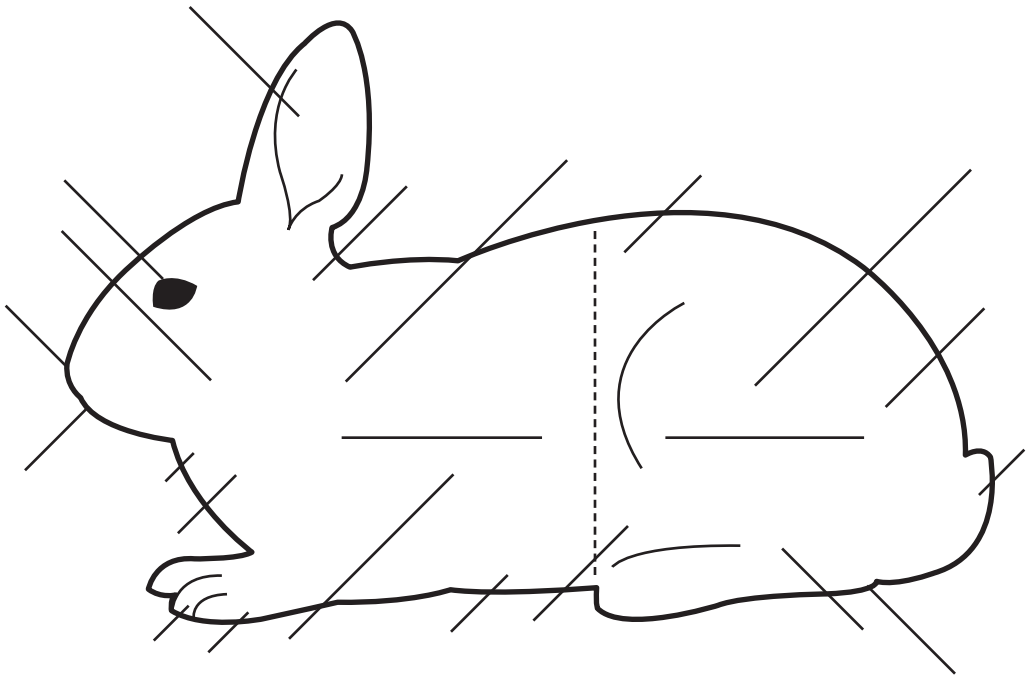
12. To be healthy rabbits need what three things?

*** Thanks to 4-H Nova Scotia for this Activity**

Parts of the Rabbit

Place the following terms in the correct places on the rabbit diagram below.

- *Neck*
- *Hock*
- *Ear*
- *Shoulder*
- *Loin*
- *Hip*
- *Belly*
- *Forequarter*
- *Mouth*
- *Flank*
- *Hindquarter*
- *Rump*
- *Tail*
- *Leg*
- *Rib*
- *Foot*
- *Toes*
- *Chest*
- *Eye*
- *Dewlap*
- *Nose*
- *Cheek*



Rabbit Facilities Scramble

Unscramble each of the words below. All the words are things to consider when preparing and caring for rabbit facilities and equipment.

Copy the letters in the numbered cells to other cells with the same number below to reveal a secret message about your rabbit's home.

GACE

14

TEWAR TEBTOL

7

NIATATSONI

6 20 5

CUHHT

15 8

SNTE XOB

16 12 2

FODO HIDS

1

HOWS CEGA

21 13 17 4

TEETAMRUPER

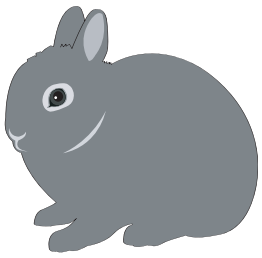
3 10 19 18

NAVTINTEOLI

11

EMNURA

9



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

Symptom Match Up

Draw lines to match the symptoms to the disease

Diseases		Symptoms
Ear Mites		*Nasal discharge, sneezing, coughing, water eyes, rubs nose with front feet.*
Snuffles (Pasteurellosis)		*The rabbit turns its head to one side and has a loss of balance.*
Mastitis		*Shakes head and flops ears. Scaly crust starting at base of inner ear.*
Sore Hocks		*Loss of hair is usually in circumscribed patches, often starts on head but may involve other parts of the body.*
Ringworm		*Bruised areas under surface of the rabbits hocks. Oftem becomes infected or abscessed.*
Wry Neck		*Excessisve discharge from the eye and matted fur under the eye. Rubs its eyes with its front feet.*
Weepy Eye		*Mammary glands become hot, reddened and swollen – later may appear blue in colour.*

Who Am I ?

There are many common breeds of rabbits. Using the 10 breeds listed below answer the "Who Am I?" Put the correct breed in the space under the description.

- ***Florida White***
- ***Californian***
- ***Satin***
- ***Belgian Hare***
- ***Holland Lop***
- ***English Angora***
- ***Jersey Wooly***
- ***Mini Rex***
- ***Netherland Dwarf***
- ***English Lop***

1. I am known for my extremely long ears.

2. I am a commercial rabbit but I am smaller than many of the other commercial breeds.

3. I am the smallest of the lops.

4. I have a unique fur coat that feels like velvet.

5. I am one of the smallest rabbits.

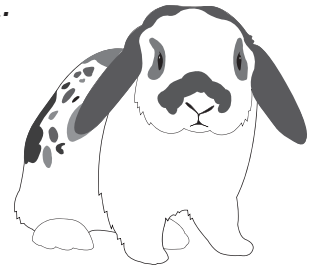
6. My fur is brilliant in color compared to normal furred rabbits.

7. I have heavy bangs, side trimmings and heavily tasseled ears.

8. I am a small rabbit and my short compact body covered in dense wool.

9. My name is deceiving, I am, really just a breed of domestic rabbit.

10. I have pink eyes, and dark points on my ears, feet and tail.



Word Search

Answer the eight fill in the blank questions below.
Then find your answers in the word search.

QUESTIONS:

1. *Never lift a rabbit using its _____ or front legs.*
2. *It is important to learn how to _____ your rabbit over so you can trim its toenails and check its teeth.*
3. *It is important to be _____ with rabbit training.*
4. *_____ and _____ are as important to the exhibitor as to the animal.*
5. *Be polite and _____ to the judge and others at all times.*
6. *Don't _____ your animal in the show ring.*
7. *Always _____ the rabbit correctly on the show mat.*
8. *When doing and overall health check, __ and _____ points to the judge.*

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

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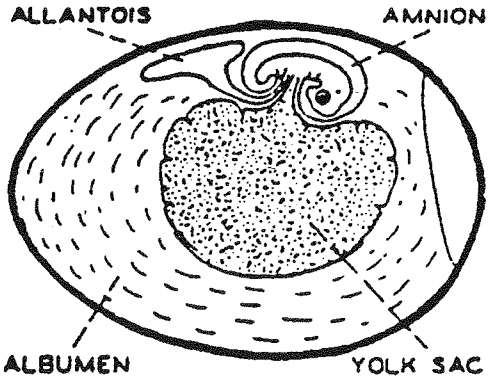
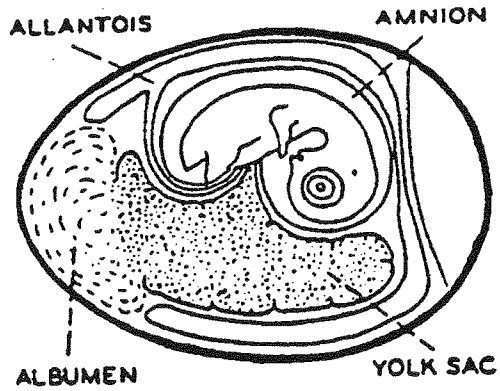
Activity Option 34:

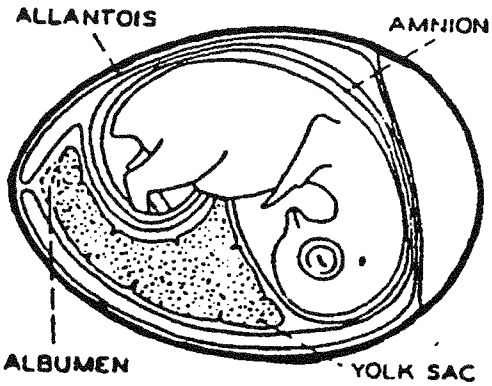
Supporting Materials



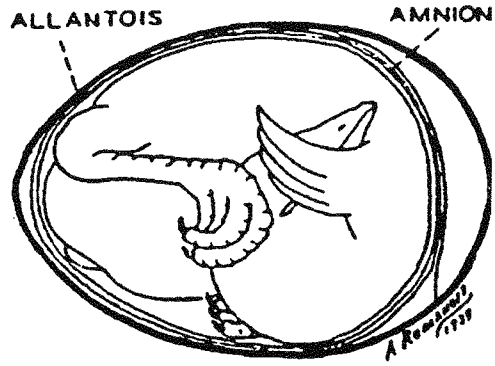
5 DAYS



10 DAYS



15 DAYS



20 DAYS

CANDLING EGGS

Eggs for table use are candled to see the condition of the air cell, the yolk, albumen, blood spots or meat spots. Candling is done in a dark room with the egg held in front of a strong light that lets you see the inside of the egg.

Candling is also used to see if the eggs are fertilized and, if they are, to check how the embryo is growing.

White eggs should be tested for fertilization on the third day. Brown eggs should be checked on the fifth or sixth day because it is difficult to see the embryo clearly before this.

If an egg has been fertilized, you will be able to see a small, reddish area with blood vessels running away from it. It looks like a huge red spider. This is the embryo floating around inside the egg.

If the embryo dies, the blood vessels break away and form a blood ring. All clear eggs and eggs showing blood rings or streaks should be removed from the incubator.

HOW TO MAKE A SIMPLE CANDLER

You will need:

A large shoebox or something like it
A powerful flashlight
Masking tape
A sharp knife or pair of scissors

1. Cut two holes in the shoebox, one the size of your flashlight head on the side of the box and one about 1 inch in diameter on the bottom of the box about in the middle.
2. Tape the flashlight to the box and you're ready to go.

HATCHING THE EGG

It takes some poultry eggs longer to hatch than others do. For example, a chicken egg spends 21 days in the incubator before it hatches. A turkey or duck egg is there for 28 days, while a goose egg takes 30 to 31 days. A Muscovy egg stays in the incubator the longest. It's there for 35 days before it hatches.

There are two ways to incubate an egg, with a broody hen or in an incubator.

DOING WHAT COMES NATURALLY

When a hen lays eggs that are going to hatch chicks, she becomes broody. You can tell if a hen is broody if she stops laying eggs and always ruffles her feathers and clucks whenever someone comes near.

A broody chicken usually looks after 10 or 12 eggs, which is called a setting.

Once a hen starts incubating her eggs she only leaves the nest for food and water. If you are looking after a broody hen, you should make sure that she gets hard grain along with some grit in her food. She will also need a lot of fresh water, which should be available all the time.

INCUBATORS

Incubators are heated containers that are used to hatch eggs. The temperature inside an incubator should stay at 38°C. A big hatchery can have between 14,000 and 100,000 eggs in incubators and there are even hatcheries that hatch 1 million eggs at a time! Hatcheries that are this size use mechanized incubators but you can hatch eggs just as well in a small incubator.

There are two kinds of incubators used in commercial hatcheries: forced air setters and hatchers.

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Online Explore 4-H Project

Activity Option 36:

Supporting Materials

PHOTOGRAPHY

PERFECT SCORE

IMPACT & STYLE **25**

- Does it catch your attention
- Is it real and natural
- Insight and approach
- Use of imaginative thought
- Clarity/focus

COMPOSITION **50**

- Balance, placement of primary and secondary objects
    - o Is it centred properly?
    - o Is the background overpowering?
- Good rhythm of colour and design
- Creative use of colour
    - o For black and white photography, you should see absolute black, absolute white and a total gray spectrum in between
- Does it tell a story?

PRESENTATION **10**

- Does the size and colour of the mounting or matting (if requested) meet requirements of the fair or event?
- Is the mounting clean and neat with straight lines?
- Is the photograph printed properly?
- No dates on the front of the picture

LIGHTING (colour, hue, and direction from which it is coming) **30**

- Effective use of light as it relates to subject (i.e. used to separate the background from the image)
- Does it provide shape and texture?
- Does lighting create desired effect?

4-H Ontario
Online Explore 4-H Project

Activity Option 37:

Supporting Materials

JUDGING FORMAT

Sir/Madam, I place this class of

_____

_____

_____ _____ _____ _____ _____

I place _____ on the top because

_____

_____

_____

I place _____ over _____ because

_____

_____

_____

I place _____ over _____ because

_____

_____

_____

I place _____ over _____ because

_____

_____

_____

For these reasons, I place this class of

_____

_____

_____ _____ _____ _____

4-H Ontario
Online Explore 4-H Project

Activity Option 38:

Supporting Materials

ACTIVITIES

Activity #12 - Bird Silhouettes

Pollinators are attracted to specific colours and may get confused by man-made objects. When there is a pane of glass in front of them, pollinators see through it and often try to fly right through a window to get to what is behind. Putting something up on a window, such as bird silhouettes, gives birds a signal to avoid it.

Items Needed:

- Stiff paper (construction paper, cardstock,etc.)
- Scissors
- Markers/crayons
- Tape

Instructions:

1. Using the templates found in the Record Book, cut out a silhouette using construction paper.
2. Colour and decorate the silhouette.
3. Tape the silhouette to a window at home.

ACTIVITIES

Activity #13 - Birdfeeders

Birds, like all animals, have specific needs to survival. In a city, birds may find water in puddles or in a pond. They may make their home out of a hole in a tree or they may create a nest out of bits of hair or fabric they find in a yard. Having a bird feeder to watch is a great way of bringing different bird species into your backyard. Creating a birdfeeder might also help birds find food during times of the year when finding food is difficult.
The hummingbird does more pollinating than any other bird. But, other birds indirectly also help with the pollination process.

Items Needed:
- Pinecones (one per member)
- Vegetable shortening
- Trays
- Tablecloth
- Cloths for cleaning up
- Yarn or string (approx.. 40cm per member)
- Plastic bags (for transporting feeders)
- Birdseed

Instructions:

1. Trays with shortening and trays of birdseed should be prepared in advance.
2. Tie string onto the pinecone.
3. Roll the pinecone in the shortening. The more shortening on the pinecone, the more seeds will stick to it so try to encourage members to coat their entire pinecone in shortening.
4. Roll the pinecone in the birdseed.
5. Place pinecone feeders in a small plastic bag for transporting home.

When members take the pinecones home and hang them up, ask them to keep a journal of bird sightings.

ACTIVITIES

Activity #10 - Butterfly Planter Boxes

Adult butterflies drink nectar to maintain their water balance and energy supplies. This nutrition contributes to their ability to survive, mate and lay eggs. Occasionally, when adult butterflies overfeed themselves, they squirt out liquid spray from their belly.
In the city, butterflies may find it difficult to find appropriate flowers to feed at. So, providing a planter box (or even better, a butterfly garden) with flowers is a great idea!
Another option is to create a planter box with host plants to learn about metamorphosis and the butterfly lifecycle. Butterflies would be attracted to lay eggs on these plants and then everyone can watch as the caterpillars grow on the plants. Options for host plants include dill, fennel and any milkweed species, just to name a few.
Depending on the size of the planter box (or butterfly garden), host plants and plants for adult butterflies could all be included in one spot.

Items Needed:
- Planter box
- Potting soil
- Plants/flowers
- Water

Instructions:

1. Research to find out which butterflies live in your area.
2. Research or take a trip to a local greenhouse to find out which plants/flowers are best for attracting butterflies. Ask if any pesticides have been used to treat the plants.
3. Plant these plants in the soil in your planter box.
4. Place the planter box in an area that receives at least 5 to 6 hours of sun a day.
5. Water the planter box as necessary.
6. Observe the butterflies from a distance as they visit the flowers in your planter box.

Ask members the following questions:
- Why is it best to have plants available to butterflies for nectar rather than fruit and sugar water? (butterflies will pollinate while gather nectar)
- Were there some flowers that the butterflies preferred to feed at? Were there some flowers that the butterflies never visited?
- What types of butterflies were attracted to the flowers? Draw a picture(s) of the butterflies that were observed.
- Observe the butterfly planter box. What other animals or insects are the flowers attracting? How many of each species?

Have members record their findings in their Record Book.

ACTIVITIES

Activity #11 - Butterfly Puddles

Items Needed:

- Flat Pan (like a pie plate)
- Sand (sandy soil will also work)
- Water

Instructions:

Butterflies cannot drink from ponds or other larger bodies of water and so they must drink from flowers or mud puddles. Mud puddles allow butterflies to take in moisture and necessary nutrients.

Go outside and collect some sand – enough for the pie plate. Fill an old pie plate almost to the rim with sand. Add water – just enough to make a soupy mixture. Stir to make it a puddle. Then, set out the mud puddle in a spot near flowers that attract butterflies.

Each day, check on the butterfly puddle and add water as required. Watch the puddle over several days to see butterflies landing for a drink.

ACTIVITIES

Activity #9 - Hummingbird Feeder

Hummingbirds satisfy their sweet tooth with flower nectar. While it is best for hummingbirds to get their nectar from appropriate flowers and plants, this isn't always a reality, depending on where someone lives. If possible, it is a great idea to plant a flower garden or flower boxes for a balcony for hummingbirds to feed on flowers. But, an alternative option is to make a hummingbird feeder.

To get enough food, a hummingbird has to eat a lot quickly. Hummingbirds feed at a rate of 2 to 13 laps per second.

Items Needed:

• 500mL plastic bottle, empty and cleaned
• Lid with an opening bigger than the bottle opening (a milk jug cap will do for a pop bottle-sized opening but a cap with higher sides will prevent overflow if the temperature or air pressure changes or if the feeder sways in the wind)
• Elastics (or twist ties)
• 6 twist ties or 2 pipe cleaners
• Sugar
• Water

Instructions:

1. Make the nectar by mixing 1 part sugar with 4 parts water. Set aside.
2. Put an elastic band snugly around the upside-down bottle near the top.
3. Bend a pipe cleaner over the top of the bottle and hook it under both sides of the elastic to make a hanger for the feeder.
4. Put an elastic snugly around the bottle in the indentation where the cap would normally go.
5. Cut a pipe cleaner in 3 and twister the 3 ends together.
6. Tape the twisted ends to the centre of the top (the smooth side) of the cap so that the three pipe cleaner 'legs' stick out radially 120 degrees apart.
7. Tuck these pipe cleaner 'legs' under the elastic to hold the nectar-catcher cap under the bottle opening. Twist ties can be use in place of pipe cleaners if you want to keep to recycled material.
8. Fill feeder with nectar 2/3 full.
9. Holding bottle right-side up, tuck pipe cleaner 'legs' under the elastic to hold the nectar-catcher cap under the bottle opening.
10. Hold the cap against the bottle opening, carefully turn the feeder right-side up and hang.
11. Each week, empty the old nectar out of the feeder, clean the feeder with soap and water and refill it.

Ask members the following questions:

- What are some natural sources of nectar?
- What are some flowers that hummingbirds like?

ACTIVITIES

Activity #7 - Milk Carton Newspaper Tubes Bee Nest

Close to a third of our native bees nest in wood, invluding hollow or pithy-stemmed plants. Milk carton bee nests are fun to make and use materials that are easy to find. Visit www.pollinationguelph.ca for additional methods of making bee nests.

Items Needed:

- 2L or 4L milk carton (rinsed)
- 4 sheets of 8 ½" x 11" white paper
- 4 newspaper pages
- Pair of scissors
- Pencils or dowels of varying sizes
- Tape (Scotch or masking tape is best)
- String
- Post/stake
- Paint/markers

**NOTE: hollow or pithy-stemmed twigs can also be used in place of the newspaper tubes. Natural plants stems are recommended as the newspaper can become soggy and moldy.*

Instructions:

1. Following the fold lines at the top of the carton, cut half-way around the carton (e.g. where the "spout" is). This leaves an overhang on the box to help keep out the elements.
2. Paint the outside of the carton using weather-resistant paints. Decorate as desired using paints or permanent markers. (this step is optional).
3. Layer sheets of newspaper and plain paper together, with the long edges together. The white paper keeps the best away from the newspaper ink and the newspaper increases the strength of the tube and decreases the light.
4. Cut the newspaper-white paper layers along the edge of the white paper (i.e. 8 ½" wide segments).
5. Fold this segment in half along the longest length and then in half again. Cut the folds so that you have similarly-sized newspaper-white paper sets, approximately 7cm x 20cm (2 ¾" x 8 ½").

6. Using a pencil or a dowel, roll the pieces into cylinders or tubes. Different sized dowels are recommended as different bees prefer stems of different diameters and lengths (see also #8 below).
7. Tape the edges shut and slide the tube from the dowel. Fold the last 1 to 2.5cm (1/2" x 1") of the tube upwards and tape it to the body of the tube. This closes the end of the tube and prevents light from entering. The female will plug the front entrance with mud after she finishes nesting.
8. Repeat until you have 15 or more tubes. Place the tubes in the carton, packing additional newspaper around the tubes so that the tubes remain horizontal and will not fall out if moved.

Directions Using Twigs/Stems (continue after steps 1 & 2 above)

Any type of dead stems with a hollow or pithy stem can be used for nesting tubes. Example species include goldenrod, Queen Anne's Lace, sumac, teasel, cattails/reeds, elderberry, parsnip, rose and raspberry stems/twigs. One end of the twigs should be closed (e.g. by a knot or stem node) so that the tube has only one opening; the female bee will plug the front entrance with mud after she finishes nesting. Pack the tubes in the box tightly so that the tubes remain horizontal and will not fall out if moved. Tubes should end just before the edge of the box overhang, to protecxt the bees from the elements.

9. The completed nest can be placed on a building, post or in a tree. The nest should be kept level, with the entrance facing east or south-east. Directo subshine in the morning helps warm the bees up in preparation of flight. Ensure that the nest is stable and not going to move in the wind or the bees will nest elsewhere. The actual height does not matter, although 0.6 to 1.8 metres (2 to 6 feet) from the ground is good.

Maintenance:

It is best to put out nests in early spring although it is never too late to put a new one out as females of some species will lay eggs throughout the year. If a female finds a tube suitable, she will lay a series of eggs on a pollen and nectar ball, separated by partitions. As the eggs hatch, the larvae will feed on the provisions and then create cocoons in which they will mature into adults later in the summer or the next spring. It is important to note these bees will only sting if handled roughly (e.g. squeezed) and in the rare cases where this happens, their sting is similar to a mosquito bite.

Activity Source: Pollination Guelph

ACTIVITIES

Activity #30 - Public Debate

There are many threats to pollinators in Canada. While the science is still out on some topics, many of these topics are being debated in the media by those on both sides of the issue.
Divide members into teams of two or three people (ensuring that there will be an even number of teams). In this activity, two teams will face off against each other to debate a controversial topic that has been in the media with one team defending one side of the issue and the other team defending the other side of the issue. Give teams approximately 20 to 30 minutes to research their side of the debate or, assign teams a topic at Meeting #5 so they can research at home.
Topics to choose from include (but are not limited to):
• Habitat Loss – who is to blame? Urban Growth or Agriculture
• Climate change – is this a real phenomenon? Yes or No
• Neonicotinoids – is the threat real? Yes or No
• Decline in the diversity of flowering plants – who is to blame? Humans or Mother Nature
• No Pollinators – can the human race survive without pollinators? Yes or No
• Pollinator Gardens – is planting one garden really going to make a difference? Yes or No

Activity #31 - Seed Balls and Seed Bombing

Seed balls are small clay balls containing compost and wild flower seeds. The seed ball contains all that is needed for germination and first growth. The seed ball (seed bomb) can be either placed or thrown wherever you would like to see native plants growing. Seed balls are meant to be lobbed anywhere you want to grow something but cannot plant and tend to it in the traditional manner, In their clay coats, the seeds are protected from being eaten or blown away until the rain comes. When it rains, the clay softens and the seeds sprout in the balls, where they are nourished and protected until they can root and get a good start in the ground.

Be careful when placing or throwing the seed balls. Never put them in natural areas. The seeds in the seed balls will end up in direct competition with native plants.

Check with your local nursery to find out which plants grow best in your area with only receiving rain as a source of water, which plants are best for local beneficial insects and when is the best time to plant. Some classic choices for feeding insects include mustard, fennel, dill, buckwheat, clover and wildflowers such as coneflower, goldenrod, yarrow, ironweed and sunflower.

How To Make Seed Balls:

Ingredients:

• Seed of your choice, or a mix
• Dried compost of any kind
• Finely ground red clay – you can use potting clay or dig clay out of the ground as long as you dig deep enough so there are no weed seeds in it. If you use potting clay, be sure to use only red clay (other kinds might prevent seed growth). Spread the clay out to dry. Then, grind it up between two bricks to make a powder.

Instructions:

1. Mix one part seeds into three parts compost.
2. Add five parts dry clay to the compost/seed mix and combine thoroughly.
3. Add a little water a bit at a time until the mix becomes dough-like. You don't want it to be soggy.

4. Roll tightly packed little balls about the size of marbles and set them aside to dry in a shady place for a few days.
5. To make the strongest impact, distribute these balls at the rate of about 10 balls per square metre of ground.

Source: Mother Earth Living, http://www.motherearthliving.com/gardening/how-to-make-seed-balls.aspx?PageId=2

Activity #32 - Creating a Pollinator Garden

Local actions by individuals can help to protect pollinators and biodiversity in communities. By creating a pollinator garden, you can help to protect the biodiversity of local pollinators and it will give you the chance to see butterflies, caterpillars, bees, hummingbirds and other friendly and beneficial insects and birds. It will help to contribute to a healthy and sustainable future for generations of pollinators.

When planting for pollinators, try to include a wide range of flower shapes, sizes, structures and colours to benefit as many species and life stages as possible. Native plants are excellent since wild bees will already be adapted to them. Plants that bloom in the spring or fall are particularly important as floral resources are often scarce at these times.

ACTIVITIES

Activity #16 - The Very Hairy Caterpillar

This gardening project

Items Needed (per caterpillar):

- 1000mL (4 cups) potting soil
- 60mL (4 tbsp.) quick-sprouting grass seed (clover works well for pollinators)
- Small yogurt container or paper cup
- Knee-high nylon stocking
- Colourful ponytail holders
- Scissors
- Plastic bag
- Bobby pin
- Goggle eyes
- Pipe cleaner
- Small pom-poms

Instructions:

1. Combine the potting soil and grass seed in a large bowl.
2. Cut the bottom from the a small yogurt container or paper cup for a funnel, then slide a knee-high nylon stocking over it.
3. Pour or spoon 175mL to 250mL (3/4 to 1 cup) of the soil mixture into the stocking. Then, slide a colourful ponytail holder over the end of the stocking to section off the pocket of soil. Repeat this process to make 5 soil filled segments. Tie a knot in the top of the stocking and trim away any excess nylon.
4. Submerge the caterpillar in water for 10 minutes. Then, place it in a plastic bag and let it sit overnight.
5. Remove the bag and loop a semi-straightened bobby pin through the front of the stocking. Then, glue a googly eye onto each end of the pin.
6. For antennae, cut a pipe cleaner in half. Glue a small pom-pom onto one end of each half and stick them in place.
7. Set your caterpillar on a plate by a sunny window or outside and generously water the entire caterpillar every other day. Your caterpillar should sprout hair in about 4 to 5 days.

Source: Communities Together for Children, Thunder Bay, ON

4-H Ontario
Online Explore 4-H Project

Activity Option 39:

Supporting Materials

3. Start a Bird Journal

Time: About 30 minutes to an hour

What you will learn:

Many birdwatchers carry journals with them that they call "field journals," in which they document all the birds they've seen, when and where, and what the birds were doing when they saw them. A field journal can be a valuable tool that will help a lot on your birdwatching journey. You will be able to write down important information and sketches while you're out watching birds, and then bring it back to research online or tell your fellow club members. In your bird journal, you will organize your birding adventures according to date, what birds you saw and heard, and any observations you made about them.

What you need:

A small or medium sized notebook, a pencil or pen, your binoculars, and some birds!

Instructions:

Start by either finding or buying a small or medium-sized notebook. You don't want a big one, something small will do. Find a size that would be comfortable carrying around with you as you birdwatch, maybe even fit in your pocket. If you can find one that is unlined, great, it will give you room to do bird sketches that will be helpful for identifying birds once you get home. You can decorate your bird journal however you'd like. You can paint or colour the cover, or put a big title on it like, "Jessica's Bird Journal" so everyone knows whose it is. Be creative! This is your space to chronicle your birdwatching journey, and you might have it for a long time!

Start by writing about all the birds you have seen to date, and if you haven't seen any, maybe now is the time to get outside and see what you can find! Make careful and neat notes so that you'll be able to transfer them to your record book regularly.

Discussion:

- Why do you think birdwatchers keep regular journals of what they've seen?
- Do you keep a journal of anything else (like your day-to-day life)? Does it help to put your thoughts on paper? Do you ever look back through them and are reminded of a time in your life?
- What are the first birds you've written down in your journal? Where did you see them? What were they doing? Share your discoveries with your club!

4-H Ontario
Online Explore 4-H Project

Activity Option 40:

Supporting Materials

ACTIVITY #2 (MEETING #1)

The 'Do You Know' Scale

Take the following test to determine how much you know about your family. If you answer no to any of the following, use this as a take-home activity to find out the answers by asking parents, grandparents, aunts, uncles or any other family members that might be able to help.

1. Do you know how your parents met?
2. Do you know where your mother grew up?
3. Do you know where your father grew up?
4. Do you know where some of your grandparents grew up?
5. Do you know where some of your grandparents met?
6. Do you know where your parents were married?
7. Do you know what went on when you were being born?
8. Do you know the source of your name?
9. Do you know some things about what happened when your brothers or sisters were being born?
10. Do you know which person in your family you look most like?
11. Do you know which person in the family you act most like?
12. Do you know some of the illnesses and injuries that your parents experienced when they were younger?
13. Do you know some of the lessons that your parents learned from good or bad experiences?
14. Do you know some things that happened to your mom or dad when they were in school?
15. Do you know the national background of your family (such as English, German, Russian, etc)?
16. Do you know some of the jobs that your parents had when they were young?
17. Do you know some awards that your parents received when they were young?
18. Do you know the names of the schools that your mom went to?
19. Do you know the names of the schools that your dad went to?
20. Do you know about a relative whose face "froze" in a grumpy position because he or she did not smile enough?

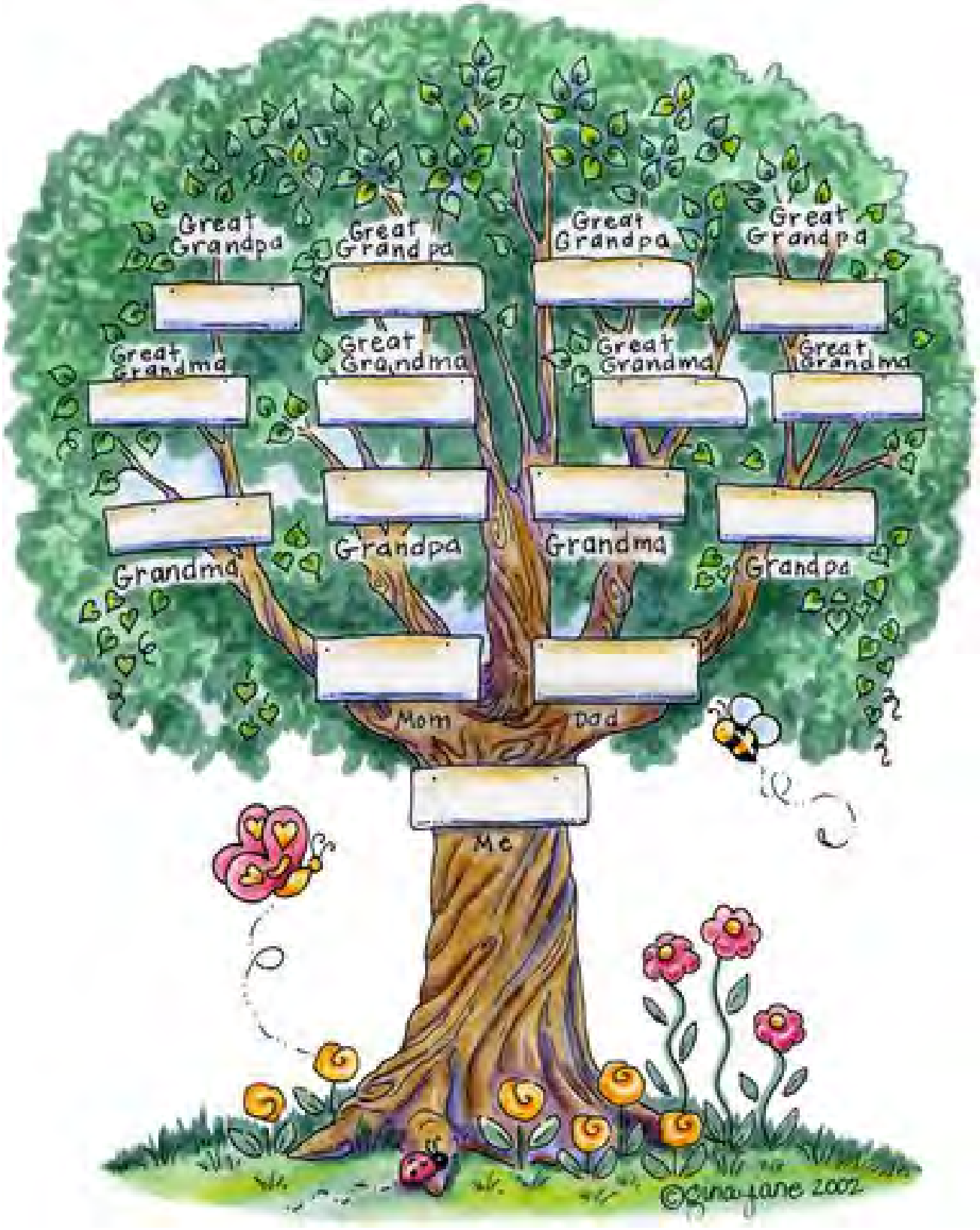
Score: Total number answered "Yes"

** The last question is meant to show that the stories that families tell are not always true, according to the study's co-author, Marshall Duke.

Source: Emory University Study titled 'Do You Know? The Stories That Bind Us ' Authors Robyn Fivush and Marshal P. Duke

ACTIVITY #3 (MEETING #1)

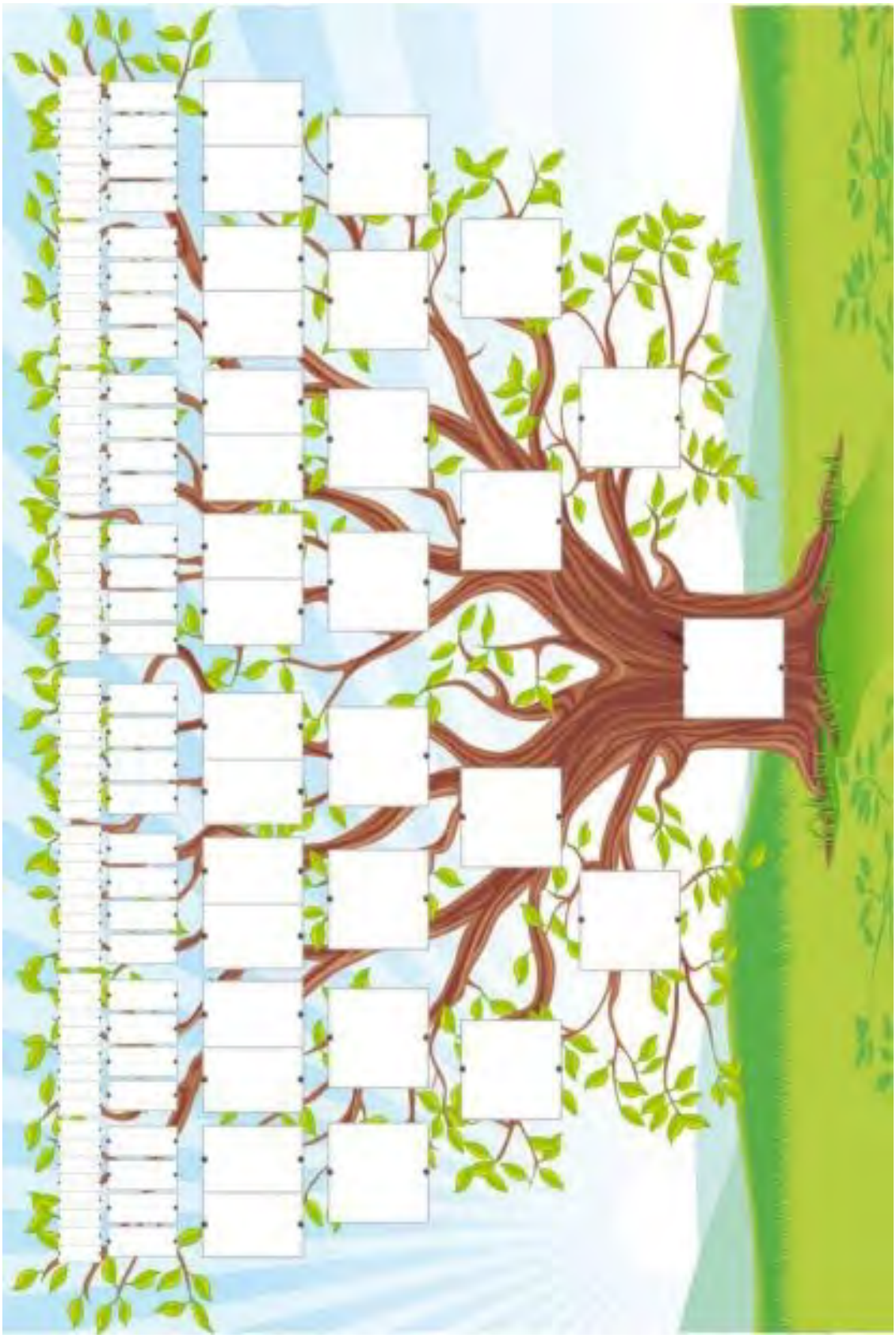
My Family Tree



Source: http://familytreetemplatewall.blogspot.ca/2012/09/family-tree.html

ACTIVITY #3 (MEETING #1)

My Family Tree



Source: http://www.squidoo.com/free-online-family-tree-maker

ACTIVITY #3 (MEETING #1)

Ancestral Chart

ancestry.com

Chart No. _____

No. 1 on this chart is
the same person as No. _____

On Chart No. _____

BORN
PLACE
MARRIED
PLACE
DIED
PLACE

NAME OF SPOUSE

BORN
PLACE
MARRIED
PLACE
DIED
PLACE

BORN
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PLACE

BORN
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PLACE

BORN
PLACE
DIED
PLACE

CONT. ON CHART _____

CONT. ON CHART _____

CONT. ON CHART _____

CONT. ON CHART _____

CONT. ON CHART _____

CONT. ON CHART _____

CONT. ON CHART _____

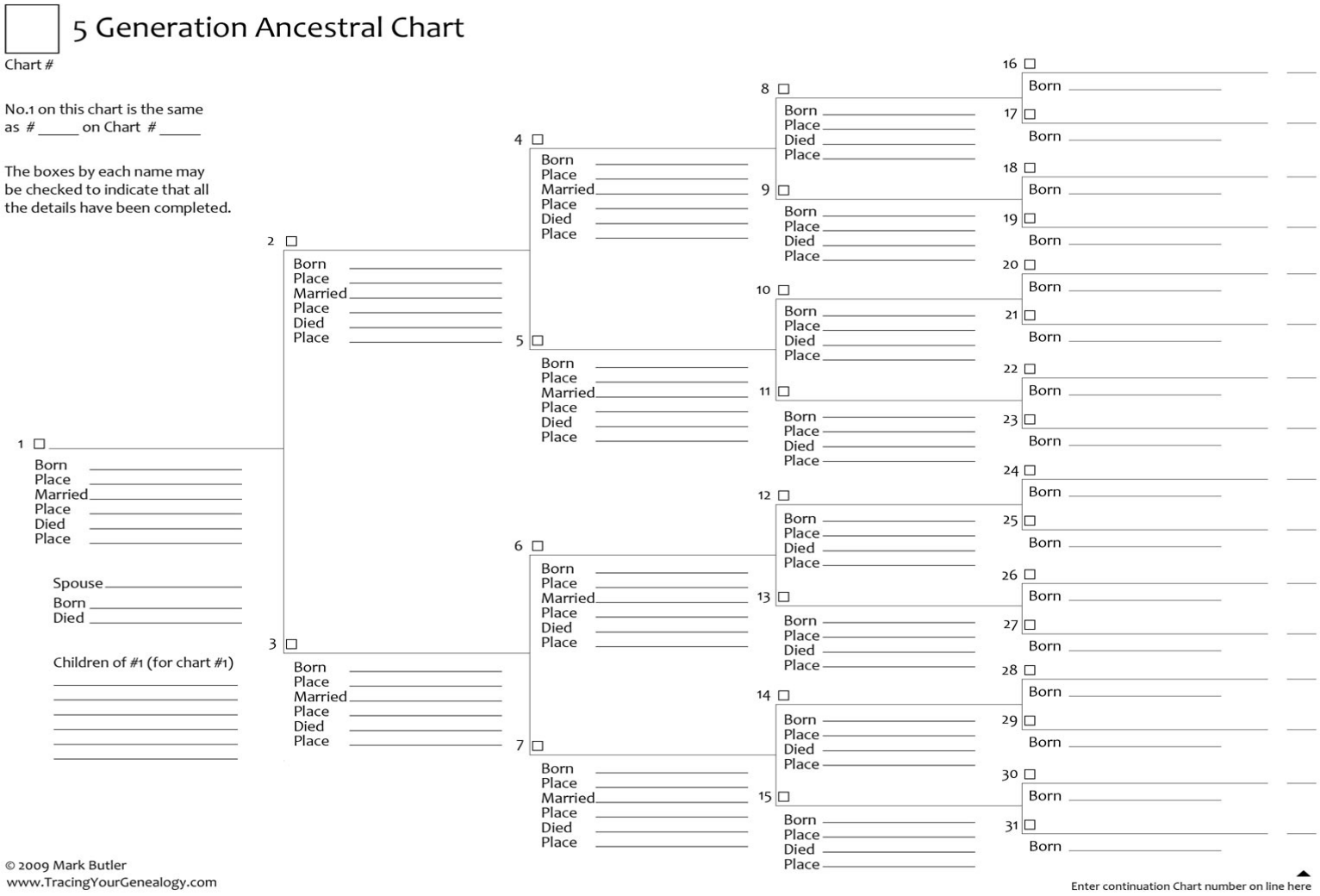
CONT. ON CHART _____

Form # F120

http://www.ancestry.com/save/charts/ancchart.htm

Source: www.ancestory.com

ACTIVITY #3 (MEETING #1)



Source: www.tracingyourgenealogy.com

ACTIVITY #3 (MEETING #1)

http://www.rootsweb.ancestry.com/~canqbogs/

Family Group Record

Courtesy of The Quinte Branch - OGS

Prepared by _____ Relationship _____ Ancestral Chart # _____

Address _____ Date _____ Family Unit # _____

HUSBAND Occupation(s) Religion

	Date (dd/mmm/yyyy)	City / Town / Parish	County	Province / State	Country	
Born						Address
Christened						Church
Married						Church
Died						Cause
Buried						Cemetery
Father		Other Wives:				Date of will
Mother						Probated

WIFE (maiden name)

Born						Address
Christened						Church
Died						Cause
Buried						Cemetery
Father		Other Husbands:				Date of will
Mother						Probated

Direct Line	Sex M/F	Children Given Names	Birth (dd/mmm/yyyy)	Birthplace City	County	Province / State	Country	Date / Place of 1st marriage Name of Spouse	Death Date / Place Cause of Death	Computer ID #
		1								
		2								
		3								
		4								
		5								
		6								
		7								
		8								
		9								
		10								
		11								
		12								

Source: Ontario Genealogical Society www.rootsweb.ancestry.com

4-H Ontario
Online Explore 4-H Project

Activity Option 41:

Supporting Materials

4-H Ontario Veterinary Project

The Digestive System

B) Belching

Purpose: This activity demonstrates that proper belching is a matter of life or death for ruminants.

Required Materials: Balloon, carbonated soda (cola)

Leader:

1) Pour pop into a balloon.
2) Close the balloon carefully and shake it up.
3) Ask the members to explain what happened.
4) Emphasize that this is what would happen to the animal's rumen if the gas was not released.

4-H Ontario Veterinary Project

The Bones Section

A) Hollow Strength

Required Materials: Paper, tape, scissors, paper plates, measuring cups, weights (blocks – small)

Leader:
Provide members with a sheet of paper (8 ½" x 11") and ask them to cut it horizontally into three equal pieces.

Member:

1) roll each sheet into a cylindered (1 inch or 2.5 centimeters in diameter) and fasten it with tape
2) Stand the rolls on their ends, placing a paper plate on top of the bones.
3) Begin to add weights (wooden blocks) to the plate.
4) Count how many blocks the plate can hold before it collapses.
5) Roll 3 more sheets of paper as tightly as they can (no hollow space in center)
6) Stand these "bones" on their ends as before placing the same plate on top of them.
7) Load bricks onto the place until the bones collapse.

Leader
Members should notice that the hollow bones were able to support more weight before collapsing. Explain that the large bones in animals'' bodies (including humans) are hollow bones that are strong and designed to carry a lot of weight. As well, hollow bones are lighter than solid bones, requiring less energy to move them.

4-H Ontario Veterinary Project

The Digestive System

E) Make an Emulsion

Required Materials: eggs, oil, vinegar

Leader:

1) Ask members to explain what would happen if they tried to mix oil and vinegar together (No matter how hard you shake the two, the oil eventually separates into globules and rises to the top.)
2) Explain that this can be prevented by adding a third substance that stops the oil from separating. This substance helps make an emulsion, and is called an emulsifier.

Member:

1) Add ½ cup if vinegar to ½ cup of oil. Shake. What happens?
2) Let the mixture sit for several minutes. What happens?
3) Add an egg to the oil and vinegar. Shake. What happens?
4) Let the mixture sit for several minutes. What happens? (You have just made mayonnaise).

Leader:

1) Explain that bile acts as an emulsifier like the egg did in this recipe. Bile also helps retain the contents of the intestine fluid and prevents the food from fermenting or going bad. Bile also gives feces its colour.

4-H Ontario Veterinary Project

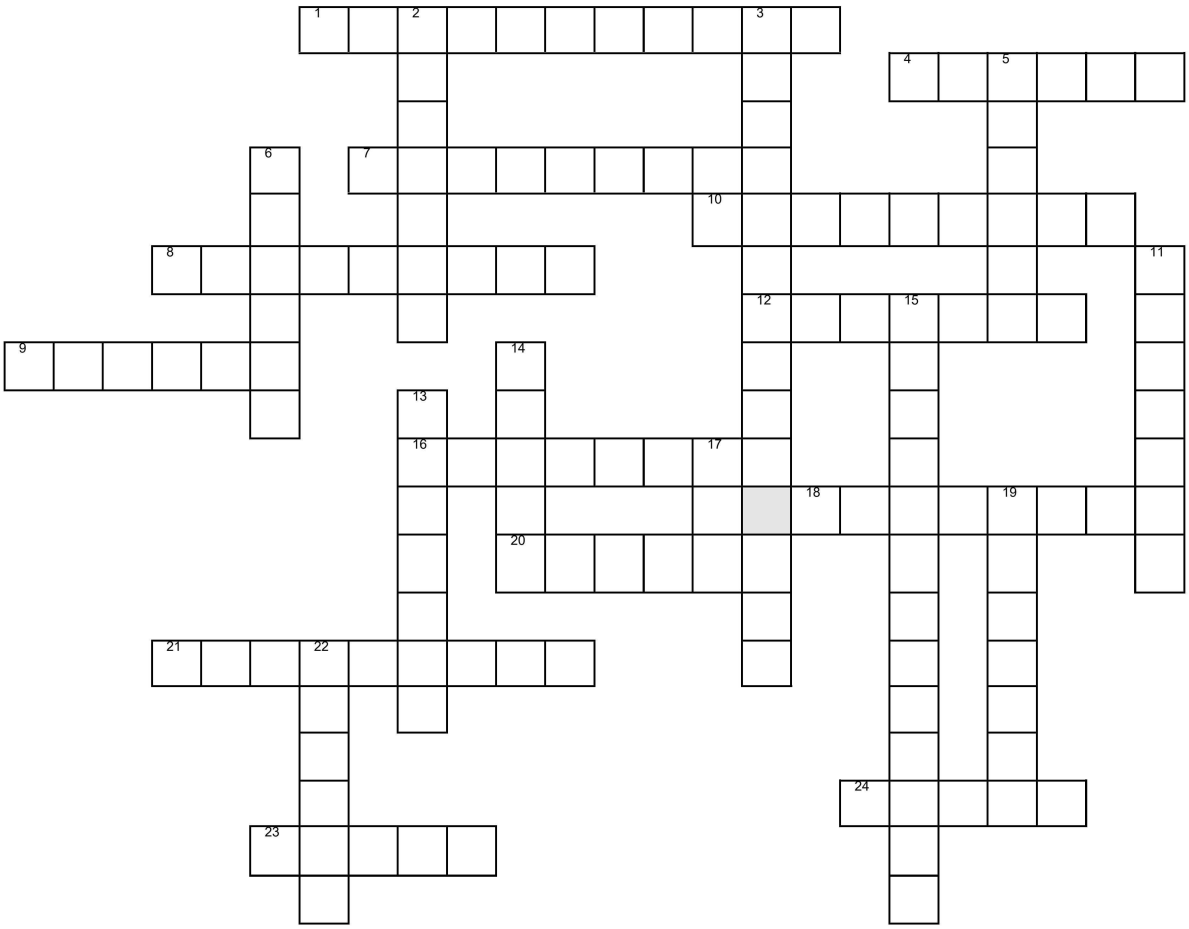
The Digestive System

D) PH IN THE GUT

Required Materials: Flour, Vinegar, unsweetened red grape juice, baking soda, water, drinking glass

Leader:
1) Allow members to make a liquid paste of flour and vinegar. Discuss: Is vinegar acidic or alkaline? Where in the gut is there an acidic environment? This paste is chyme (kie-em).

Member:
1) Add a few drops of unsweetened red grape juice (the juice acts like litmus paper. It is red in an acid mixture but turns green in an alkaline mixture.)
2) Add a few drops of baking soda that have been mixed with water (baking soda is sodium bicarbonate). Where in the digestive system is this found? What reaction do you get? Are the contents of the glass now acidic or alkaline?



ACROSS	DOWN
1. Tiny blood vessels in the lungs.	2. Shared between respiratory and digestive systems.
4. Average respiratory rate in a cow.	3. Protects entrance to larynx.
7. Trachea divides into these structures.	5. Opposite of "13 down".
8. Bones in the nose.	6. Voice production in a bird.
9. Exchanged for "15 down" in the lungs.	11. Only in birds (2 words).
10. Sense of smell.	13. Air in.
12. Flexible tube.	14. _____ cavity - contains hairs and special bones.
16. Two in number.	15. Waste product produced in the body (2 words).
18. _____ cavity.	17. Soft and spongy.
20. Cartilages and muscles.	19. Thin walled sacs in the lung.
21. Muscular wall between chest and abdomen.	22. Thin membranes covering the lungs.
23. Control of breathing.	
24. Tiny hairs on cells which wave back and forth.	

4-H Ontario
Online Explore 4-H Project

Activity Option 42:

Supporting Materials

WHAT IS A VISION?

Vision is a mental picture of the future. An idea of what is possible but has not yet happened, There are at least three types of visions. Each holds a different picture of the future.

1. Probable Future—What we can expect to happen if we continue as we are now
2. Desired Future—What we'd most like to have happen
3. Catastrophic Future—What could happen if things get worse or something really bad occurs.

WHY IS A VISION IMPORTANT?

* It creates our reality
* Vision shows us where we are headed
* It helps us fulfill our desires
* Vision gives us direction
* It helps us make specific choices and decisions
* Vision provides motivation and inspires us to keep going
* It focuses us and gives us meaning/purpose
* Vision moves us towards what we want rather than what we do not want
* It draws us forward and takes us beyond obstacles

TIPS TO DEVELOP VISION

* Decide on what you want your goal to be
* Write down your ideas
* Get a clear picture—What does it look like, sound like, feel like?
* Replay your vision—Visualize or picture it in your mind
* Find examples of others who have had successful visions and learn from them
* Act on your vision—Build on each little success

"Vision without action…..is merely a dream, action without vision just passes the time. Vision with action….can change the world *Joel Barker*

4-H Ontario
Online Explore 4-H Project

Activity Option 44:

Supporting Materials

Activity – Bacteria Transfer Experiment

Supplies:
Cooking oil, cinnamon, water-cold and warm, soap.

In this section there was a lot of talk about SANITATION! What roll do you as the farmer have to play in disease transmission? Let's try this quick experiment and see what results we get.

Three members are needed to demonstrate this experiment.

Procedure:

1. Rub 1 tablespoon of cooking oil all over your hands until they are completely coated. Sprinkle 1 teaspoon of cinnamon on hands and rub it around until it's evenly disturbed. **The cinnamon will act like bacteria. It's all over your hands!**
2. Wash hands as follows, rubbing them briskly for 20 seconds…

   Volunteer #1 washes hands in cold water with no soap.
   Volunteer #2 washes hands in warm water with no soap.
   Volunteer #3 washes hands in warm water with soap.

Have the group observe what is happening to each volunteer's hands. Record the results.

The most effective method of removing the bacteria was
_____

The least effective method of removing the bacteria was
_____

My Conclusions are…
I can remove bacteria from my hands by:
Using_____water, _____and by using _____.

How does this activity demonstrate the need for superior SANITATION when handling livestock?

Why? When might this be especially important?

The most effective way to remove the bacteria was warm water and soap.
The least effective way to remove the bacteria was cold water with no soap.

Conclusion drawn:
The most effective way to control the spread of infectious disease in the barn from animal to animal or animal to person is to be very careful about hygiene. This is especially true when handling sick animals.

4-H Ontario
Online Explore 4-H Project

Activity Option 45:

Supporting Materials

Activity #5

Shake it to make it (10 minutes)

Objectives:
• To learn about and experience how soil is made.

Materials:
• Cans with plastic lids
• 2-3 small, rough-edged rocks per container

Instructions:
1. Collect (or have pre-collected, dependent on time) some small, rough-edged rocks.
2. Put them in a can with a plastic lid and shake them, vigorously! When you get tired, pass it on to your partner to continue shaking. You will need to shake the rocks in the can for at least five minutes.
3. Carefully, open the can and run your finger around the inside of the can. What do you feel? You've just made sand!

Discussion:
• What happened to your rock? Are the edges worn down a bit?
• How long would it take to turn those rocks into sand/soil? (Thousands of years.)

Activity #6

Underwear Soil Test (Day 1- 20 minutes; Day 2- 30 minutes)

Visit the Innovative Farmers Association of Ontario website at:
http://www.ifao.com/soil-health to view a video about this activity.

Objective:
• To measure how many organisms are living in the soil

Materials:
• Clean pair of new 100% cotton underwear (one pair per location)
• Shovel

Preparation:
Prior to starting the experiment, choose differently managed fields and predict how much of the underwear will be gone after the decided period of time. When the period of time has elapsed, dig up the underwear and compare between the different fields.

4-H Ontario
Online Explore 4-H Project

Activity Option 46:

Supporting Materials

Nutrition Activities

Feed Analysis

Materials: Samples of hay, grain or silage taken in advance. Have some testing results from a lab available so members can compare and see the results. Have a nutritionist explain what is meant by the reports.

Feed Evaluation

Have a class of hay, grain or silage for members to judge. Score cards are available from your resource contact.

Explain to members the importance of evaluating feed samples when selecting feed for your flock.

Let's Make a Feed

Materials: Deck of Cards on following page (can be photocopied or written onto cards).

Time: 30 Minutes

You will need one full deck for each 6 members - 6 of each; protein, macro mineral, micro mineral, stored Vitamins, Non Stored Vitamins, water, 12 energy cards and one Super sheep and one dead sheep. The object of the game is to be the first member with 50 points.

A complete feed hand consists of: (this may be posted for members to see)

2 x Energy
1 Protein
1 Macro Mineral
1 Micro Mineral
1 Stored Vitamins
1 Non Stored Vitamins
1 Water

To run this activity:

- Prepare a score sheet
- Select a dealer
- The Dealer shuffles the cards and deals out until all the cards are handed out.(Some members may have an extra card)
- Members sort their cards looking for cards that will make a complete feed. Members will want to trade cards that they don't need and try to get cards they need.
- The dealer will announce "The Pasture Gate is Open"
- Players start trading by holding out the number of cards they with to trade and announcing the number – 'two-two-two' or 'three-three-three'. They must find a member who wants to trade the same number. This continues until someone announces "I've made a feed" . Super sheep is a wildcard that can be used in place of any one of the needed cards.
- The person who made a feed gets 10 points
- If they used super sheep they get 10 additional points
- Who ever holds Dead Sheep loses 10 points
- If someone holds super sheep and did not make a feed they loose 10 points
- Play continues until someone reaches 50 points or you can set a time limit.

Let's Make a Feed! 	Let's Make a Feed! 
Let's Make a Feed! 	Let's Make a Feed! 
Let's Make a 	Let's Make a Feed! 
Let's Make a Feed! 	Let's Make a Feed! 
Let's Make a Feed! 	Let's Make a Feed! 

Energy	Energy
Protein	Macro mineral
Micro Mineral	Stored Vitamins
Non Stored Vitamins	Water
Dead Sheep	Super Sheep

4-H Ontario
Online Explore 4-H Project

Activity Option 47:

Supporting Materials

HAPPY FACE APPLE MUFFINS

Some quick breads and muffins are higher in fat and sugar. Serve these occasionally. These treats are applicious!

Ingredients:

125 mL butter or margarine
175 mL brown sugar
1 egg
175 mL unsweetened applesauce
250 mL all-purpose flour
5 mL baking powder
1 mL baking soda
1 mL salt
5 mL cinnamon
125 mL raisins
250 mL oatmeal (not instant)
1 large red apple such as Idared, Empire or Cortland
a few extra raisins

Yield: 12 muffins

Preparation Time: 20 minutes

Baking Time: 25 minutes

Equipment:
oven
small bowl
mixing bowl
liquid and dry measures
small measures
rubber spatula
wooden spoon
ice cream scoop
paper lined muffin tins
hot pad
pot holder
electric beater

1. **READ** recipe.
2. **ASSEMBLE** all ingredients and equipment.
3. **PREHEAT** oven to 180°C (350°F).
4. **CREAM** butter. Add brown sugar. Beat, using electric beater, until light and fluffy.
5. **BEAT** in egg. Then stir in applesauce.
6. **STIR** together in a separate bowl flour, baking powder, baking soda, salt, cinnamon, raisins and oatmeal.
7. **MAKE** a well in the centre of the dry ingredients. Pour butter mixture into well. Stir using wooden spoon, just until all ingredients are combined.
8. **SCOOP** batter into paper lined muffin tins using ice cream scoop.
9. **MAKE** happy faces using raisins for eyes and nose, and thin unpeeled slices of apple for smiles.
10. **BAKE** for 25 minutes. These muffins keep well and freeze well, too. The applesauce keeps them moist.

PUMPKIN BREAD

Moist and flavourful, this quick bread is a delicious snack or lunch box addition. Baking powder and/or baking soda are the leavening agents used in quick breads. This recipe uses both.

Ingredients:

4	eggs
500 mL	granulated sugar
250 mL	vegetable oil
500 mL	cooked and mashed pumpkin
5 mL	salt
750 mL	all-purpose flour
10 mL	baking powder
10 mL	baking soda
10 mL	cinnamon
125 mL	chopped nuts or sunflower seeds
	shortening

Yield: 2 loaves

Preparation Time: 20 minutes

Baking Time: 1 hour

Equipment:
liquid and dry measures
small measures
rubber spatula
wooden spoon
large mixing bowl
smaller bowl
2 loaf pans
oven
pot holders
cooling rack

1. **READ** recipe.

2. **ASSEMBLE** all ingredients and equipment.

3. **PREHEAT** oven to 180°C (350°F). Grease loaf pans with shortening.

4. **BEAT** eggs in large mixing bowl. Add sugar, oil and pumpkin. Beat well.

5. **MIX** salt, flour, baking powder, baking soda, and cinnamon together in a smaller bowl. Now stir this into the egg mixture.

6. **STIR** well, just until all the ingredients are combined and moistened. Pour into loaf pans.

7. **SPRINKLE** tops of loaves with nuts or sunflower seeds.

8. **BAKE** for 1 hour until sides are gently pulled away from the sides of the pan and when a toothpick put in the centre of the loaf comes out clean.

9. **COOL** on wire racks. When cool, wrap in foil and plastic bag. Quick breads are always better eaten a day or two later.

BETTY'S BREAD PIZZA

The wonderful pizza flavours are created in a new form. A great party food!

Ingredients:

625 mL all-purpose flour
15 mL quick rise yeast (1 pkg.)
15 mL granulated sugar
5 mL salt
250 mL water (first amount)
15 mL olive oil
150 mL tomato sauce
2 mL oregano
2 mL basil
Favourite Pizza Toppings of Choice:
chopped ham
diced green peppers
browned ground beef
sliced mushrooms
250 mL shredded mozzarella cheese
1 egg white
15 mL water (second amount)
shortening

Yield: 6 servings

Rising Time: 30 minutes

Baking Time: 25 minutes

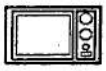
Equipment:
small saucepan or microwave safe bowl
range top or microwave oven
dry and liquid measures
small measures
mixing bowl
thermometer
wooden spoon
rubber spatula
sharp knife
fork
pastry brush
baking sheet
oven
pot holders
wax paper

1. **READ** recipe.

2. **ASSEMBLE** all ingredients and equipment.

3. **MEASURE** 250 mL of the flour and set aside.

4. **COMBINE** remaining flour, yeast, sugar and salt in a large mixing bowl.



5. **HEAT** water (first amount) and olive oil until hot (50-55°C) in a small saucepan on range top or for 2-3 minutes at 100% power in microwave oven. Stir hot liquids into dry ingredients. Stir well.

6. **MIX** in enough reserved flour to make a soft dough that does not stick to the sides of the bowl. Turn dough out onto lightly floured kneading surface.

7. **KNEAD** for 2-3 minutes. Cover dough by turning mixing bowl upside down over dough. Let rest 10 minutes.

8. **GREASE** baking sheet with shortening. Place sheet on a damp cloth on counter.

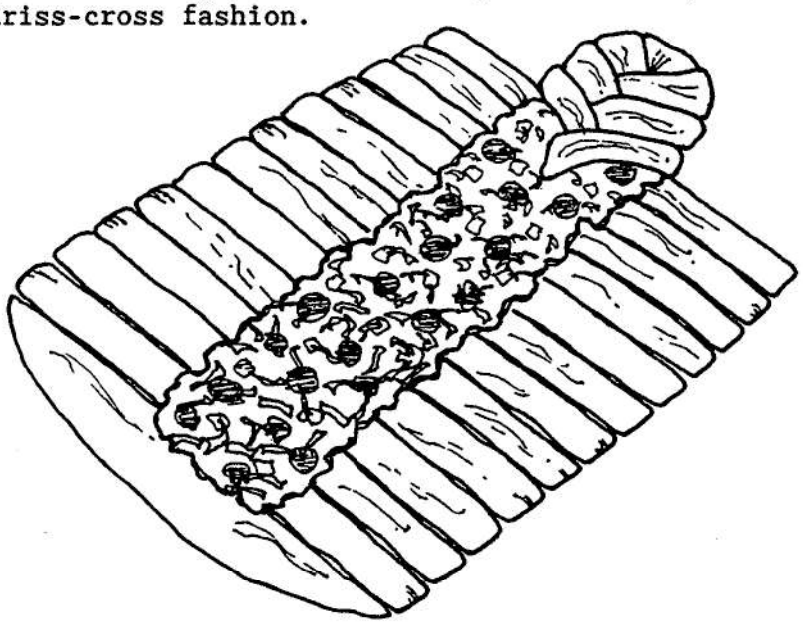
9. **ROLL** or **PAT** dough on baking sheet to a rectangle about 35 x 25 cm.

10. **MARK** dough gently into thirds.

11. **SPREAD** tomato sauce on centre third of dough. Sprinkle on oregano and basil. Top with favourite pizza toppings, finishing with mozzarella cheese.

12. **CUT** 2.5 cm strips along the sides of the filling out to edge of dough.

13. **FOLD** two end pieces of dough in over filling. Fold strips of dough across filling in a criss-cross fashion.



14. **COVER** dough with greased wax paper and place in a warm place to rise. Let rise for 30 minutes.

15. **PREHEAT** oven to 200°C (400°F).

16. **BEAT** egg white and water (second amount). (Store egg yolk, covered with water in refrigerator for later use.) Brush over dough using pastry brush.

17. **BAKE** for 25 minutes. Serve hot. Refrigerate any leftovers. Good reheated.

SWEET ROLL DOUGH

This dough, rich with egg, butter and sugar can be made into an assortment of sweet baked goods as well as scrumptious dinner rolls.

Ingredients:

125 mL warm water (40-45°C)
5 mL sugar
15 mL active dry yeast (1 pkg.)
150 mL milk
50 mL sugar
5 mL salt
50 mL butter
1 egg
925-1000 mL all-purpose flour
shortening

First Rising Time: 1 hour

Second Rising Time: (for dinner rolls) 30-60 minutes

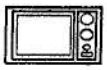
Baking Time: (for dinner rolls) 12-15 minutes

Equipment:
liquid and dry measures
small measure
large mixing bowl
thermometer
fork
knife
electric beater
wooden spoon
cooling racks
wax paper
clean tea towel
pot holders
range top or microwave oven
oven
baking sheet
small saucepan or microwave safe measure

1. **READ** recipe.

2. **ASSEMBLE** all ingredients and equipment.

3. **RINSE** large mixing bowl with hot water. Measure warm water into bowl. Sprinkle 5 mL sugar over water. Then sprinkle in yeast. Let stand 10 minutes.



4. Meanwhile, **HEAT** milk, sugar, salt and butter in small saucepan on range top or in microwave safe bowl in microwave oven at 100% power for 2-3 minutes. Liquids should be warm (40°C). Check with thermometer.

5. **STIR** down yeast. Add milk mixture. Beat egg with fork and stir into liquids. Add 250 mL of flour. Beat for 3 minutes using electric beater until smooth.

6. **STIR** in about 625 mL of remaining flour with wooden spoon. If necessary, add more flour to make a soft dough that leaves sides of bowl. Turn out onto lightly floured kneading surface. Put bowl to soak in cold water.

7. **KNEAD** until smooth and elastic, adding more flour if necessary, about 5 minutes.

8. **WASH** and dry mixing bowl. Grease well. Place dough in greased bowl. Rotate dough to completely grease. Cover with greased wax paper and tea towel. Set in a warm place.

9. **LET RISE** until doubled, about 1 hour.

10. **PUNCH** down. Turn out onto lightly floured kneading surface. Knead lightly. Shape into a ball. Cover with mixing bowl. Let rest 10 minutes.

11. Dough can now be used for Classic Cinnamon Buns or Kolachy (see recipes on next two pages).

12. FOR DINNER ROLLS: SHAPE as desired. Place on baking sheets (greased with shortening). Cover with tea towel. Return to warm place and let rise until doubled (30-60 minutes).

PREHEAT oven to 190°C (375°F). Bake for 12-15 minutes or until golden. Cool on wire racks.

TEDDY BEAR BREAD

Ingredients:

50 mL warm water (45°C)
2 mL sugar
15 mL active dry yeast (1 pkg.)
25 mL sugar
25 mL butter or margarine
10 mL salt
250 mL boiling water
250 mL milk
1500 mL all-purpose flour
1 egg, beaten
6 raisins or currants
shortening

Yield: 2 Teddy Bears

First Rising Time: 1 hour

Second Rising Time: 1 hour

Baking Time: 25 minutes

Equipment:
liquid and dry measures
small measures
rubber spatula
wooden spoon
knife
fork
metal egg flipper
pastry brush
large mixing bowl
2 small bowls
cooling racks
pot holders
2 baking sheets
wax paper
clean tea towel

1. **READ** recipe.

2. **ASSEMBLE** all ingredients and equipment.

3. **MEASURE** warm water into liquid measure. Sprinkle in sugar. Sprinkle yeast over water. Let stand 10 minutes. Then stir briskly with a fork.

4. **MEASURE** sugar, butter and salt into large bowl. Add boiling water and stir to dissolve. Add milk and stir.

5. **STIR** in 750 mL of the flour. Beat until smooth using a wooden spoon. Add yeast when ready.

6. **RESERVE** 25 mL beaten egg for glazing. Beat rest into batter.

7. **STIR** in all but final 125 mL of flour.

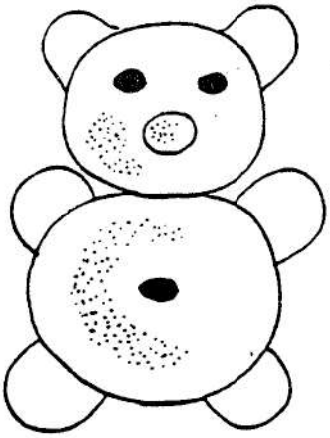
8. **TURN OUT** onto lightly floured kneading surface, scraping bowl clean with rubber spatula. Put bowl to soak in cold water.

9. **KNEAD** dough until smooth and elastic, about 10 minutes. Add flour to prevent sticking.

10. **WASH**, dry and grease mixing bowl. Place dough in bowl. Rotate dough to grease entire surface. Cover with greased wax paper and tea towel. Place in warm place.

11. **LET RISE** until doubled, about 1-1½ hours.

12. **CUT** dough in half, then half again to make 4 quarters. Set 2 quarters aside for bodies. Divide 1 quarter in half for two heads. Divide remaining quarter in two. From each piece cut 4 paws, 2 ears and 1 nose. Cover with tea towel until ready.



13. **GREASE** baking sheets with shortening. Place large balls on centres of each sheet. Add remaining body parts. Press in raisins for eyes and belly button.

14. **COVER** with greased wax paper and tea towels. Set in warm place.

15. **LET RISE** until doubled, about 1 hour.

16. **PREHEAT** oven to 200°C (400°F). Brush beaten egg on bears in 2 thin coats.

17. **BAKE** for 25 minutes. Cool on wire racks.

4-H Ontario
Online Explore 4-H Project

Activity Option 48:

Supporting Materials

Order That!

Parliamentary Procedure is the rules, ethics and practices that are used when hosting meetings. Parliamentary Procedure is a skill that is developed in 4-H Club activities and one that makes 4-H'ers stand out in the workplace. Understanding parliamentary procedure will help you run effective meetings in your 4-H Clubs, your community and in your workplace.

In this activity, you will put the 10 steps of a motion in order. The steps are listed below.

Materials:

- Printed copy of the 10 steps, cut apart
- Cue cards (or pieces of paper)
- Scissors
- Marker/pen

Instructions:

- Print (or write out) the 10 steps of a motion
- Research what each term means and write the definition onto a cue card or piece of paper
- Put the steps in order of how they would be used when making a motion during a meeting
- When you have them in order, place the definition beside the term
- Take a picture of your final order to submit for completion of this activity

Declared	**Amended**
Acknowledged	**Called**
Re-stated	**Seconded**
Stated	**Moved**
Vote	**Discussed**

4-H Ontario
Online Explore 4-H Project

Activity Option 49:

Supporting Materials

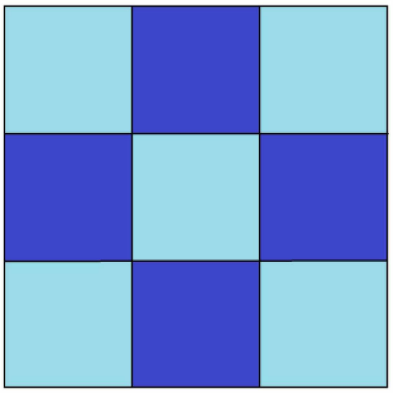
Unit 5: Quilting Projects – Beginner

Nine-Square Pieced Pillow

Approximate finished pillow size: 14”x14”

What you need:

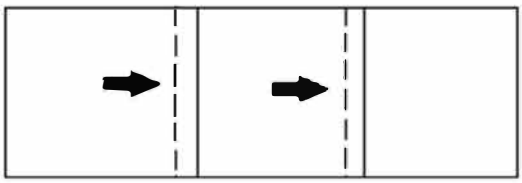
- Fabric A and B – nine 5” squares in two or three colours
- Fabric C – one 15” square
- Polyester filling
- Matching thread
- Sewing machine
- Straight pins
- Seam ripper
- Fabric shears or Rotary cutter
- Embroidery scissors
- Hand sewing needle



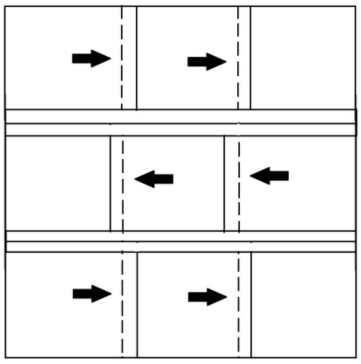
Seam allowance: 5/8” on all sides

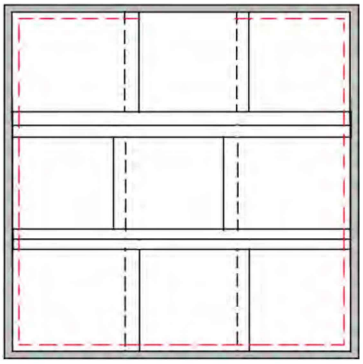
Instructions

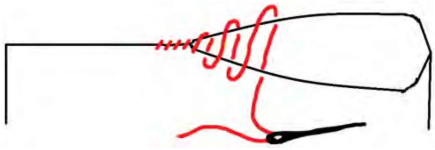
1. Prepare all fabric by washing, drying and ironing.
2. Cut out NINE 5”x5” squares and ONE 15”x15” square. Use a ruler and corner ruler to make sure that squares are perfectly level.
3. Position nine squares into three rows of three squares each until desired layout is achieved.
4. Create the top row by stitching the squares (with right sides together).
5. Press seams to one side.



6. Follow steps 4 and 5 to assemble the middle and bottom rows. Press the seams down in alternating directions.
7. Stitch rows (with right sides together) to complete the patchwork square. Press the two horizontal seams open.
8. With right sides together, sew back square and patchwork front square together, using a pivot turn at each corner. Leave a 3” opening along one side.
9. Flip pillow cover right side out, pushing corners out well. Stuff with polyester filling.
10. Close the opening using a hand needle and a slipstitch.
11. Trim all loose threads, and press.







Note: If you would like to use a pillow form or cover an existing pillow, rather than stuff a cover with filling, begin by measuring your pillow form. Ensure that the pillow is between 12” and 14” square. When you reach step 8, leave an entire side open to slip the pillow in. Close the opening using a hand needle and a slip stitch.