Any questions from the last webinar?

Partners in 4-H Project Work
- 4-H Member
- Parents
- Project Leader

All Partners Work Together
- 4-H project work occurs
- Learning by doing takes place
- Mastering specific skills
- Everyone has fun while developing Life Skills

Your Presenters
- Diane MacK, 4-H Youth Development Specialist
- Karen Blakeslee, Extension Associate, Food Science, Rapid Response Center
- Dr. Gary Gerhard, Professor and Extension Specialist, 4-H Youth Development

This pilot project is funded by a Kansas 4-H Foundation Grow 4-H Initiative.
Your Role as a 4-H Project Leader

- To guide and support 4-H members with project work
- To lead learning experiences structured around a special interest
- To create opportunities which promote positive youth development

Experiential Learning Model
How we teach in 4-H

This process engages children in the activity, encouraging them to think more, explore, question, make decisions and apply what they have learned

Ages & Stages of Youth Development

Create age appropriate learning experiences
Curriculum designed by age

Why 4-H Record Keeping?

Teaches practical skills for the future
See progress as they grow and learn

Responsibilities of Project Leaders

- Establish a regular schedule of group project experiences where members may gather to work together on their project
- Vary the activities that occur at project meetings
- Include a field trip

Responsibilities of Project Leaders

- Allocate time to update project sheets, answer questions, have members report on progress made and help them think about what comes next
- Maintain contact with parents
Responsibilities of Project Leaders

- Discuss the concept of "project completion"
- Allocate time for members to bring their projects to a meeting for review and evaluation
- Celebrate their accomplishments

In order to guide and support 4-H members with project work YOU must have a plan and start now

Drying and Freezing Foods

- Convenient
- Lightweight
- Uses minimal space
- No refrigeration needed
- Prevents growth of microorganisms
- Slows enzyme activity
- Long shelf life

Drying Equipment

- Dry in dehydrator, oven, sun
  - Sun drying difficult in Kansas, too humid
- Optimum drying temperature is 140°F
- Need air circulation

Types of Dried Foods

- Leather
  - Fruit Leather
  - Vegetable Leather
- No visible moisture
- Dry but pliable
Types of Dried Foods

- Fruit
  - Pretreat to prevent browning
    - Ascorbic acid
    - Sulfites
    - Fruit juice
    - Honey
  - Slice thin and even
  - Peeled fruit dries best

- Vegetables
  - Keep pieces uniform for even drying
  - Steam or water blanch
  - Brittle or crisp

- Herbs
  - Dry in microwave or paper bag with holes
  - Food dehydrator

- Jerky
  - Must be heated to 160 F
    - Heat in marinade prior to drying
    - Heat in 275 F oven for 10 minutes after drying
    - Strips should be ¼-inch thick or less
  - [www.uga.edu/nchfp/how/dry/jerky.html](http://www.uga.edu/nchfp/how/dry/jerky.html)

Helpful Hints

- Dry strong smelling foods separately.
- Don’t mix foods with different flavors or drying times.
- To prevent food from sticking to trays, use vegetable oil, vegetable spray, or cheesecloth.
- Don’t overlap pieces

- Artificial heat - watch food toward the end of time to prevent scorching (temperature of food will rise as moisture leaves the food).
- Don’t overload trays. The larger the load, the longer the drying time, the more nutrients lost.
- Rotate racks, turn foods periodically.
What Makes a Good Dehydrator?

- Double wall construction
  - Metal or plastic
- Enclosed heating elements
- Enclosed thermostat from 85 to 160°F
- Fan or blower
- Four to ten open mesh, sturdy, plastic trays for easy washing

What Makes a Good Dehydrator?

- UL seal of approval
- One-year guarantee
- Convenient service
- Dial for regulating temperature
- Timer to shut off
- Vertical or horizontal

Drying Foods

- Food dehydrators are simply a method of preserving food. It offers:
  - Low energy costs compared to canning or freezing.
  - Food can be regulated in terms of oranges, tomatoes, etc.
  - Dried fruits and vegetables are not disturbed, dried and processed, and stored under refrigeration. A dehydrator can be used:
    - To maintain the food's appearance
    - In combination with the food

Drying Fruits

- Freezing foods can be called natural, not the best. The fruit becomes more concentrated by eating before dehydrating because the water has been removed. The concentrated fruit can be made into a variety of foods such as marmalade, jams, etc.

Drying Herbs

- Herbs can be dried whole or in small pieces. They can be stored in airtight containers. The following is a list of common herbs that can be dried:
  - Basil
  - Thyme
  - Rosemary

Freezing Foods

- Easy, convenient, takes little time
- Slows microorganism growth
  - Will not kill or eliminate microorganisms!
- Slows chemical changes
- Quality may be lower or undesirable when thawed

University of Georgia
Chemical Changes

- Enzymes cause color, flavor, and nutrient changes
- Vegetables should be blanched
  - Destroys microorganisms
  - Removes air and shrinks product
- Fruits need browning prevention
  - Fruit Fresh, lemon juice, ascorbic acid
  - Prevents Vitamin C loss
- Products containing fat can become rancid
  - Wrap tightly to remove air

Texture Changes

- Ice crystals break cell walls
  - Results in softer texture
  - Use partially thawed
- Freeze as quickly as possible
- Keep freezer as cold as possible
- Don’t overload the freezer
- Freezer burn
  - Not reversible

Buying a Freezer

- What size?
  - General Rule - Allow 6 cubic feet of freezer space per person in family.
    - (3 cubic feet per person may be adequate if other methods of food preservation are used).
  - Standard Freezer Capacity:
    - 35 pounds of frozen food per cubic foot of usable space

Freezing Containers

- Moisture-vapor resistant
- Leak proof
- Withstand freezing temperatures
- Resist grease, oil, water
- Prevents off-flavors or off-odors
- Easy to seal and label
- Won’t crack or become brittle

Types of Packaging

- Rigid – glass or plastic
  - Safe for freezer
  - Wide mouth
  - Tight fitting lid
- Flexible bags or wrapping
  - Aluminum foil
  - Plastic bags
  - Freezer paper
**Packing Fruits**

- Syrup pack
- Sugar pack
- Dry or unsweetened pack
- Pectin Syrup
- Water or Unsweetened juice pack

**Sugar Substitutes**

- May be used in the pectin syrup, juice or water packs.
- Or could be added just before serving.
- These do not help with color retention or texture, like sugar does.
- Use amounts on product labels or to taste.

**Prevent Darkening**

- 1 tsp (3000 mg) ascorbic acid to one gallon of cool water
- Commercial ascorbic acid mixture
- Heating the fruit
- The following do not work as well:
  - Citric acid solution
  - Lemon juice
  - Sugar syrup
  - Salt/vinegar solution

**Packing Vegetables**

- Blanch properly for each vegetable
  - Water
  - Steam
  - Microwave
- Dry pack or Tray pack

**Thawing Frozen Foods**

- Thawing Methods
  - Refrigerator
  - Microwave
  - As part of cooking process
- Accidental Thawing
  - Check for ice crystals
  - Temperature 40 F or below
- When in doubt, throw it out!

**Other Foods**

- Convenience Foods
  - Oregon State University
- Foods That Don’t Freeze Well
  - [www.uga.edu/nchfp/how/freeze/dont_freeze_foods.html](http://www.uga.edu/nchfp/how/freeze/dont_freeze_foods.html)
- Youth Learning Net
  - [http://www.four‐h.purdue.edu/foods/Bite%205%20Food%20preservation.htm](http://www.four‐h.purdue.edu/foods/Bite%205%20Food%20preservation.htm)
Oops! My Freezer is Off!

- If power will be off, set freezer controls on -10°F to -20°F immediately.
- Do NOT open the door.
- Foods stay frozen longer if freezer is full, well-insulated and in cool area.
  - Full freezer - keeps 2 to 4 days.
  - Half-full freezer - 24 hours.

Refreezing Thawed Foods

- Texture will not be as good.
- General Rule:
  - Refreeze if freezer temperature is still 40°F or below OR if ice crystals are still present in the food.

Thank you so much for participating in this pilot program.
Gary Gerhard will be sending a link for the final evaluation soon!