

Alaska Agriculture in the Classroom

For Pre-K (Ages 3-5)

Lesson Goal

The goal of this lesson is to teach Pre-K students how to recognize sheep, goats, and llamas, how to care for them, and understand that their products provide nutrients for personal health.

Student Objective

The student will be able to understand how sheep, goats, and llamas are raised, how to care for them, participate in a group activity, recognize images of them and their family



members, participate in making food products, and make healthy food choices.

Activities

- **Story Time:** Agriculture in Alaska, Children's Books
- **Exploring:** Sheep, Llamas, and Dairy Goats
- **Creating:** Woolly Sheep, Ziplock Felting, and Barnyard Buddies
- **On the Go:** Goat Yoga
- **MyPlate:** Making Healthy Food Choices, Goat Cheese Please, and Homemade Yogurt

Vocabulary

Wool, fiber, shepherd, Billy goat, nanny goat, kid, lamb, cria, roving, carding, dye, felting, and grazing.

Rubric

Alaska Early Learning Guideline Domains	Student Target	Facilitating Activities
1 – Physical Well-Being, Health, and Motor Development	The student participates in a physical activity, involving coordination and movement. The student recognizes and participates in making and eating nutritious foods.	<ul style="list-style-type: none"> • Goat Yoga and Rama-Llama-Ding-Dong • Making Healthy Food Choices and Goat Cheese Please
2 – Social and Emotional Development	The student participates in a group activity, displays cooperative teamwork to accomplish a group goal, and recognizes individual contributions.	<ul style="list-style-type: none"> • Rama-Llama-Ding-Dong
3 – Approaches to Learning	The student sustains attention on a multi-task project with specified requirements.	<ul style="list-style-type: none"> • Sheep, Woolly Sheep, Ziplock Felting, and Barnyard Buddies
4 – Cognition and General Knowledge	The student communicates comprehension by recognizing the images of animals and is able to show understanding of how to care for them. The student is able to choose healthy foods.	<ul style="list-style-type: none"> • Barnyard Buddies • Making Healthy Food Choices
5 – Communication, Language, and Literacy	The student listens with attentiveness and curiosity. The student mimics sounds and actions.	<ul style="list-style-type: none"> • Agriculture in Alaska and Children's Books Stories • LLamas and Rama-Llama-Ding-Dong

Story Time!

Agriculture in Alaska

Cashmere Goats

At Willow Hill Farm north of Fairbanks, Sandy Garbowski raises cashmere goats, turkeys and chickens. Garbowski grew up in California and started raising goats when she got to college. “I always liked animals,” she said. “I wanted to raise fiber animals because I don’t like to milk.”

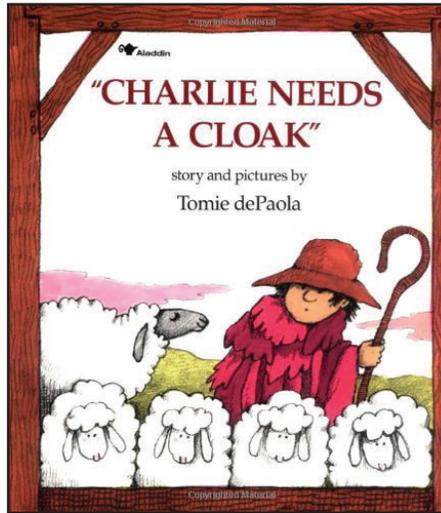
Any goat can grow cashmere, but true cashmere goats have been bred to produce the soft, downy fiber in greater amounts. After combing the fiber, Garbowski sends it to a mill to be processed into raw fiber and yarn.

All the goats are named and will come when called. They handle the Alaska winters quite well, enjoying an insulated “club house” in the barn when it gets extremely cold.

“I just like animals,” Garbowski said. “I like the chores. I like looking out my kitchen window and seeing the herd of animals.”

One drawback is buying hay for winter feed because it is so expensive. In the summer, the animals can eat off the land. Another challenge is fencing. “Goats always want to be on the other side,” Garbowski said.

She separates the bucks and does this time of year to better control a spring arrival of kids. Her goal is for them to be



born in late April or May. “In greenup, the moms get better nutrition, and it’s more fun to play with them when it’s sunny and green,” she said.

“I love the animals so much; they’re my reason for getting up in the morning.” She cautioned that goats are herd animals, so she doesn’t advise having a single goat as a pet.

Nancy Tarnai



Sandy Garbowski and her goats.

Children’s Books

Materials

- The book Charlie Needs a Cloak by Tomie dePaola

1. Read the book Charlie Needs a Cloak and then ask the students, “What is wool and what animal produces wool?” Once they identify that sheep and other animals produce wool ask, “What is wool used for?”

2. If possible, point out any clothing, socks, or coats in the room that are made of wool. You may also provide a sample

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4. If possible, point out any clothing, socks, or coats in the room that are made of wool. You may also provide a sample of wool for the students to see and touch.

5. Explain to the students that a shepherd is a person who cares for sheep and other wool-bearing animals. Tell the class that they are going to look at a book about a shepherd named Charlie.



Exploring

Sheep

Materials

- Images of sheep family members
- Samples of raw wool and of clothing made of wool

1. Show images of sheep family members and discuss: Sheep are grazing animals. A male sheep is called a ram. A female sheep is called an ewe, pronounced “you.” A baby sheep is called a lamb. Lambs are born in the spring. Ewes often have twin lambs; occasionally, they will have triplets. If the mother cannot give her lambs enough milk, a shepherd may raise the lamb on a bottle. When sheep are bottle-fed, they become tame.

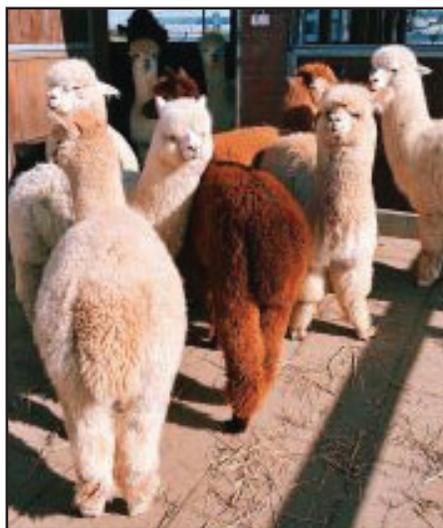
2. Discuss how it’s very important to shear sheep before their lambs are born. It can be difficult for the new lambs to drink milk with a lot of wool in the way.

3. Sheep shearing is like giving the sheep a haircut by a professional shearer. It takes a whole year for a sheep to grow a heavy fleece. A sheep’s fleece weighs about eight pounds. When the sheep is sheared, the shearer tries to keep the fleece in one piece. He holds the sheep in a special way so that neither the sheep nor the shearer gets hurt. Giving the sheep a ‘hair cut’ allows the sheep to be cooler in the summer months and keeps pests from living in the thick wool. After the sheep is



sheared, the wool is washed, carded, dyed, spun into yarn, and woven into fabric. Wool can also be felted, a process of matting fibers together, to make products such as hats, slippers, and ornaments.

4. Show examples of clothing that are made of wool, felted wool, and samples of raw wool for students to see and touch.



Llamas

Materials

- Images of llama family members

1. Discuss that Llamas are members of the camel (Camelid) family. Llamas are among the world’s oldest domestic animals and are used for pack animals, to carry things, in many parts of the world..

1. A baby llama is called a “cria,” and weighs 20-35 lbs at birth. Llamas are used as working animals, for meat and wool, hides for shelter, guarding livestock, manure pellets for fuel, recreation, and physical therapy, and as pets.

2. Llamas are sure-footed and agile and can carry an average of 80 lbs. Llama wool is warm, luxurious, grease-free, and lightweight. Llama wool can be solid, spotted, or marked in a wide variety of patterns and colors in white, black, gray, beige, brown, red, and roan Llamas eat hay, grasses, and grain and chew their cud.

Llama Talk: Llamas are sociable animals and they like to be with other llamas. They are independent but also shy, gentle, and curious. Llamas communicate by humming and using ear, body, and tail postures. Demonstrate and discuss llama communication postures and noises and relate them to human communication, if possible. Ask the students to mimic the posture or noises and then take turns making their own body posture or noise for the whole class to try.



Dairy Goats

Materials

- Goat coloring page
- Crayons
- Handheld mirror.

1. Goats are part of the cattle family. They need good fences, because they are curious, agile, intelligent, and good at getting out.

2. Female goats are called nannies and males are called billies. A female dairy goat is called a doe; a male is a buck, and young goats are called kids. Mama goats often have 1-3 kids at once. Goats can live for 8-12 years. A group of goats is called a herd.

3. Goats are ruminants—cud-chewing animals and like to graze in grass pastures, but also eat brush and other plants.

4. Goat milk is used to drink and to make cheese, butter, ice cream, yogurt, candy, soap and baby formula, for human babies, who may be allergic to cow's milk.

5. Goat meat is a good source of protein and is lower in fat and calories than chicken, beef, pork or lamb. We use goat hair to make clothing, such as mohair and cashmere. Both male and female goats can have beards.

6. Goats have eyes on the sides of their heads, allowing them to see more without turning their heads from side to side. Discuss that human eyeballs have round pupils and are on the front of the head, so humans have to turn their heads to see fully to the sides.



Ask the students to try seeing to the side, without turning their head.

7. Goats have excellent night vision and like to browse (eat) at night. The color of a goat's eye varies, from yellow to brown and sometimes blue. The pupil in a goat's eye is rectangular-shaped, instead of round like most animals.

8. Hand out the Eyes on the Side of my Head! coloring page and crayons. Point out the eyeballs on the side of the goat's head and the square pupils.

9. While they are coloring their goats, assist individual students with looking in the mirror and to examine their own pupils in relation to the goat's pupils.

Creating

Woolly Sheep

Materials

- Empty thread spools
- Googly eyes
- Colored chenille stems
- Liquid glue or glue gun
- Samples of wool (carded if possible)

1. Give each student 1 thread spool, 2 googly eyes, and 3 chenille stems.
2. Demonstrate how to twist two pipe cleaners together in the middle and thread them through the spool, so that even parts hang out on either end and bend them to make legs.
3. Demonstrate how to thread the third pipe cleaner through the spool, so that a short piece hangs out on one end and a longer piece hangs out on the other end. And then to bend the short piece up to form the tail and the long piece to form the head.
4. Demonstrate how to cover the spool on all sides with glue and apply the wool to the glue.
5. Lastly, demonstrate how to place a drop of glue on the back of each googly eye and place it on the sheep's head.



Ziplock Felting

Materials

- 8-inch square pieces of felting wool
- 8-inch square pieces of Tulle
- Small pieces of various colors of dyed wool
- 1-quart size Ziplock bag
- Soapy water
- Flat wide trays or cookie sheets
- Old bath towels

1. Precut rectangular, flat pieces of wool small enough to fit inside the Ziplock bags. Place rectangular pieces of tulle on the top and bottom of the wool. This will help speed up the felting process.
2. Hand out a piece of the wool and tulle to each student. Demonstrate how to create a design by layering dyed wool on top of the rectangular piece.
3. When finished designing, assist the student's with placing the wool and tulle inside the bag and then pour enough soapy water into it to completely saturate the wool.
4. Have an adult lay the bag flat onto a towel or into a sink and then squeeze the excess water out of the bag, by pressing from the bottom of the bag to the top.



5. Seal the bag and ask the student to work the wool by poking and pounding with their hands on the outside of the bag until the wool becomes firm and felt-like.
6. After the wool has felted, have an adult remove it from the bag, discard the tulle, and gently rinse it in water, alternating between hot and cold.
7. Assist the students with rolling the felt in a towel to squeeze out any excess water and then lay flat on trays to dry.



Barnyard Buddies

Materials

- Large paper plates
- Barn and animal coloring pages
- Fasteners
- Glue
- Scissors
- Crayons

1. Have students color the animals and the barn, and then cut them out on the outlines. Ask the students to write their name on the barn.

2. Help the students cut out the section on the top plate or have them pre-cut.

3. Have students glue the barn above the cut out section on the top plate.

4. Have students glue their animals around the edge of the bottom plate, so the feet of the animals touch the outer edge of the plate.

5. Place both plates on top of each other, with the barn plate on top. Help the students punch a hole in the center of both plates or have them pre-punched. Attach the plates together by placing a fastener through the punched hole.

6. The top plate can be colored further to represent a barnyard.

7. Show the students how to turn the bottom through to see each animal in the barnyard.

8. Ask students to mimic the animal sounds as they go through them on the wheel.



On the Go!

Goat Yoga

1. Ask the students to sit on the floor in a circle. Use the breathing exercise, Bumblebee Breath to help them relax. Ask them to slowly inhale for a count of 3. On the exhale they will 'buzz' like a bee. Repeat 3-5 times. Ask them to notice the sensations that they feel as they make this sound.

2. Use traditional poses but swap out the names to fit with the animal theme while using sounds that the animals make to encourage engagement.

3. Demonstrate and explain the following poses, asking the students to mimic them:

- **Snail**—curling up small and still.
- **Cat**—arch back with hands on the floor and 'hiss'.
- **Cow**—swing arms like tails and 'moo.'
- **Puppy**—stretch out arms and legs and 'yawn,' like a puppy waking up.
- **Dog**—walk with your dog and 'bark.'
- **Sheep**—fluff up fur and 'baa.'
- **Goat**—bob head up and down, then stretch up on tippy toes.
- **Llama**—stretch out neck and look straight up.
- **Flamingo**—find graceful balance on one foot.
- **Frog**—crouch low to the ground and 'gribbit.'
- **Butterfly**—gently flap your wings up and down.



Yoga Sharing

Going around in a circle, have each student share his or her favorite animal and create a pose that looks like the animal. Have the whole class try the pose.



MyPlate

Making Healthy Food Choices

Materials

- MyPlate Poster
- MyPlate Place Mats, laminated for reuse
- Laminated pictures of food choices from each group, multiples of the same types of food

1. Laminate the pictures of food to a colored piece of construction paper that matches its food group. Sort the food choices into 5 bins, each representing the 5 food groups.

2. Hand out the MyPlate place mats and let students choose one laminated picture from each bin. Limit them to one choice from each food group.

3. Demonstrate how to place their choice on their place mat in the correct space, using the colored construction paper and the image of the food.

4. Discuss how making food choices that fill in each food group area for meals will help them grow healthy.

Food Samples: Use small samples of real food, one for each food group. Hand out the same food sample to the students and demonstrate how to place it on its space on the place mat.

Allow the students to eat the sample and then repeat with other food samples from other food groups, if available.

Strawberry & Goat Cheese Crostinis

Materials

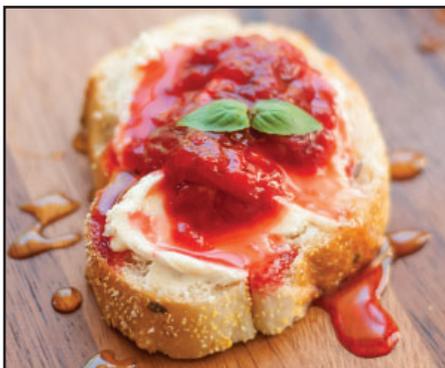
- Oven or toaster oven
- Microwave
- Microwavable bowl, glass works well
- Fork for whisking
- Small paper plates

Ingredients

- 4 oz goat cheese (honey or regular)
- 8 large frozen ripe strawberries, or other frozen berries
- Sweetener (sugar, honey, agave, or Stevia)
- Honey in a squeeze bottle
- Pinch of salt
- Baguette, sliced

1. Microwave the strawberries for 2 minutes. Using a heat mitten, remove the bowl from the microwave and place it on a protective heat pad. Add sugar or honey and a pinch of salt. Whisk with a fork until it thickens, about 2-3 minutes.

2. Add the goat cheese to a food processor or blender and whip for a few minutes, until fluffy and spreadable.



3. Pre-heat your oven to 350°F. Once your oven is ready, toast your crostini until slightly crispy and golden.

4. Spread each toast slice with whipped goat cheese, a small squirt of honey, and a spoonful of strawberry sauce on top.

5. Serve on small paper plates with napkins, making sure its not hot to the touch.

Frozen Yogurt Granola Cups

Materials

- Microwave
- Microwavable bowl, glass works well
- Mixing bowl
- Wooden spoon
- Cupcake pans
- Cupcake liners, to match size of pans

Ingredients

- 4 Tbsp peanut butter
- 4 Tbsp honey
- 2 cups granola
- 2.5 cups greek yogurt, dairy or goat, any flavor
- Fresh or frozen fruit

1. Place the peanut butter and honey into to the bowl and microwave for 30 seconds, just until melted, do not overheat.

2. Place the granola into the mixing bowl, add the melted peanut butter and honey, and mix well.

3. Spoon the granola mix into large or small, lined muffin pans. Using the end of the wooden spoon, press it into the bottom of the cup.



4. Spoon the yogurt into the cups, filling them 2/3 full and then top with fresh fruit.

5. Cover the pans with aluminum foil and place into a freezer for 2 hours, until frozen.

6. Allow the cups to thaw for a few minutes before eating. Demonstrate how to remove the cupcake liner or have an adult remove it before serving.

Paper Cup Popsickles:

Use small paper cups instead of cupcake liners. Place the paper cups into a baking pan, with tall sides to help hold them upright and fill the cups as instructed. When the yogurt is slightly thickened in the freezer, stick a wooden popsickle stick into the middle of each cup. When serving, demonstrate how to pull the paper cup off of the popsickle or have an adult remove it before serving.

References

The activities in this lesson have been, in part, adapted from the following references:

Rubric

- Alaska Early Learning Guidelines—<https://www.alaskaelg.org/goals-by-domain/>

Agriculture in Alaska

- Cashmere Goats, by Nancy Tarnai, UAF School of Natural Resources and Extension—<https://news.uaf.edu/uaf-retiree-raises-cashmere-goats/>

Children’s Books

- Charlie Needs a Cloak: by Tomie dePaola
- Baa, Ram, Ewe Sheep Tales, National Agriculture in the Classroom—<https://agclassroom.org/matrix/lesson/133/>

Sheep

- Baa, Ram, Ewe Sheep Tales, National Agriculture in the Classroom—<https://agclassroom.org/matrix/lesson/133/>

Dairy Goats

- Goats, Oklahoma Agriculture in the Classroom—https://ok.agclassroom.org/lessons/topic_goats/

Llamas

- Agricultural Facts: LLamas, Oklahoma Agriculture in the Classroom—https://ok.agclassroom.org/resources_facts/agfacts_llamas/

Woolly Sheep

- Baa, Ram, Ewe Sheep Tales, National Agriculture in the Classroom—<https://agclassroom.org/matrix/lesson/133/>

Ziplock Felting

- Baa, Ram, Ewe Sheep Tales, National Agriculture in the Classroom—<https://agclassroom.org/matrix/lesson/133/>

Barnyard Buddies

- Barnyard Buddies, Ag Awareness Program, University of Illinois, Cooperative Extension Service—<https://extension.illinois.edu/global/outreach-and-education-initiatives>

Goat Yoga

- A Sample Yoga Lesson Plan for Kids, Do You Yoga, —<https://www.doyou.com/a-sample-yoga-lesson-plan-for-kids-18149/>

Making Healthy Food Choices

- Grow It, Try It, Like It, U.S. Department of Agriculture—<https://www.fns.usda.gov/tn/grow-it>
- MyPlate Place Mat, U.S. Department of Agriculture—<https://www.myplate.gov/>

Your Resources:

<resources/graphics/myplate-graphics>

Strawberry & Goat Cheese Crostinis

- Whipped Honey Goat Cheese Crostinis, Peas & Crayons—<https://peasandcrayons.com/> (recipe and image)

Frozen Yogurt Granola Cups

- Frozen Yogurt Granola Cups, Tasty—<https://tasty.co/recipe/frozen-yogurt-granola-cups> (recipe and images)

Resources

- Alaska Early Learning Guidelines—<https://www.alaskaelg.org/>
- MyPlate Poster and Place mat—<https://www.myplate.gov/resources/print-materials>
- MyPlate Tools, Graphics, Print Materials, and Videos—<https://www.myplate.gov/resources>
- Alaska Agriculture in the Classroom Lessons—<https://www.fairbankssoilwater.org/akagintheclassroomlessons.htm>
- National Agriculture in the Classroom Lessons—<https://www.agclassroom.org/matrix>

Sheep Family



Ewe and Lambs



Ram

Llama Family



Mother Llama & Cria



Stud, Male Llama

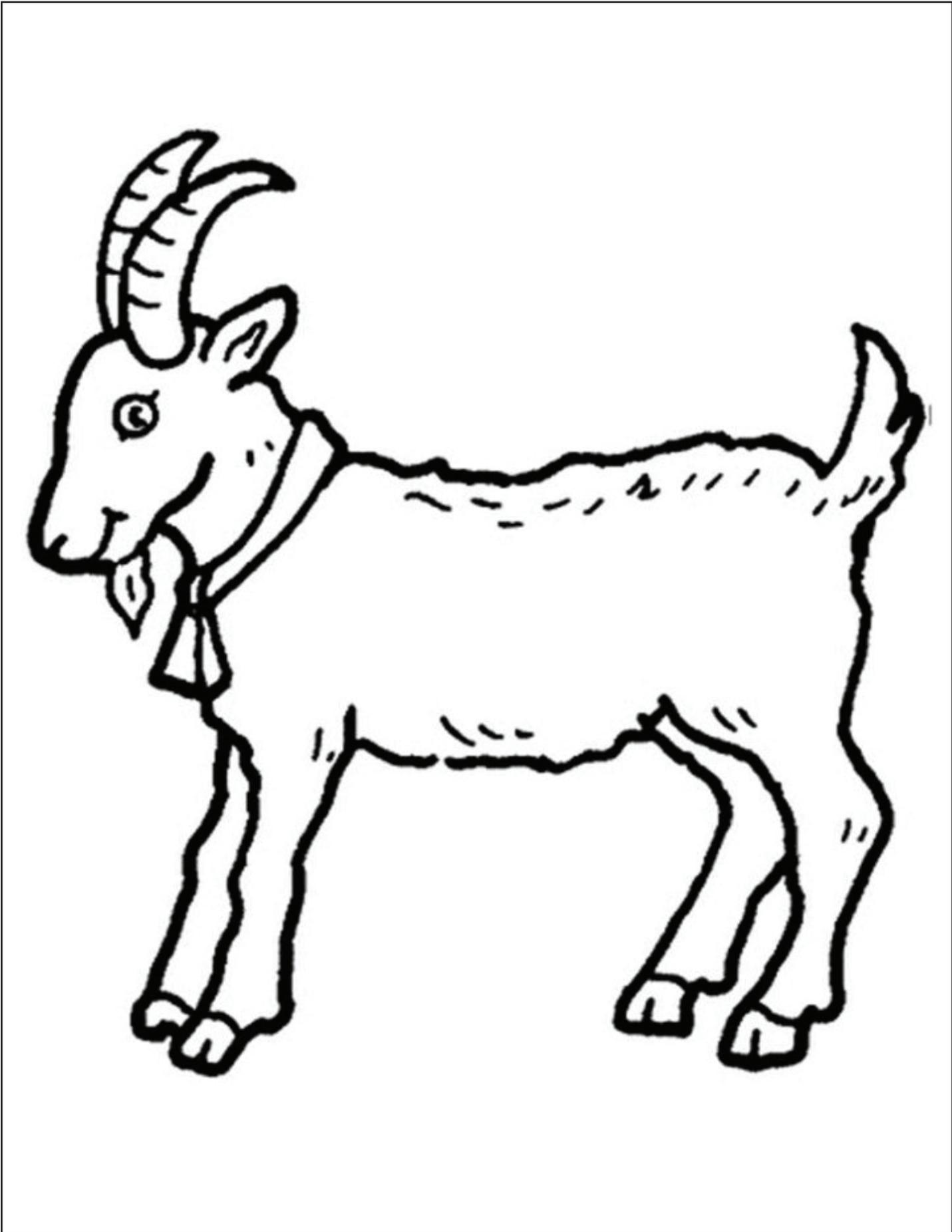
Goat Family



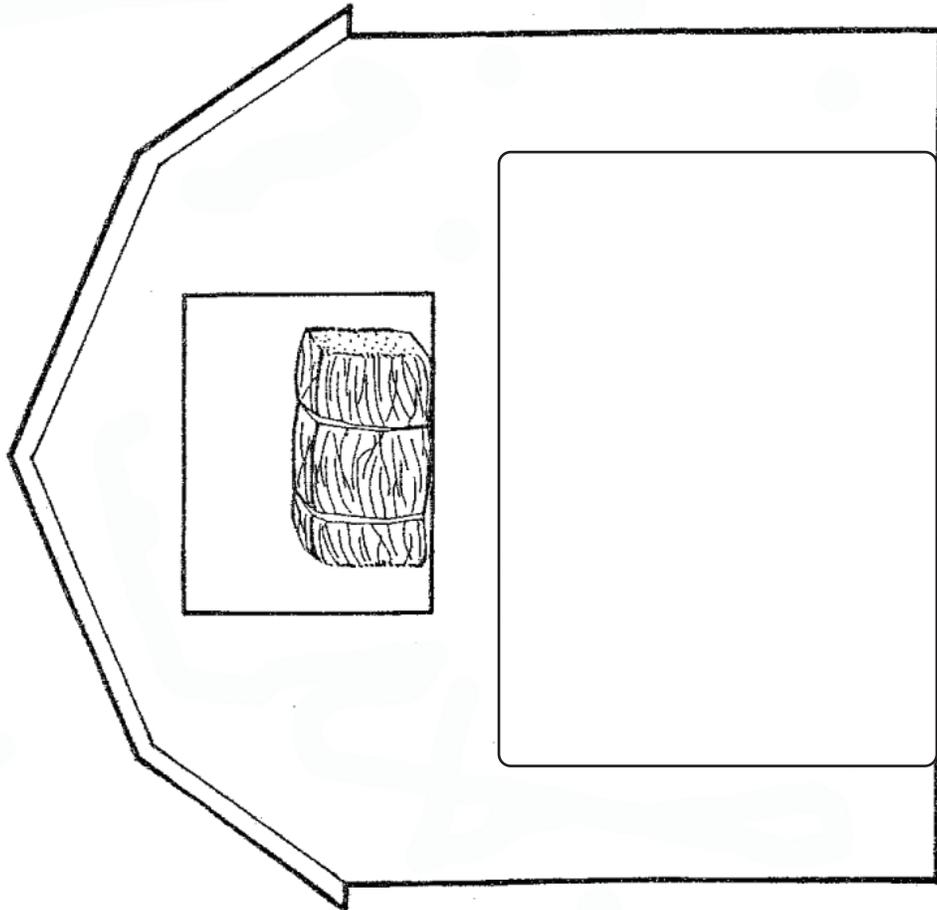
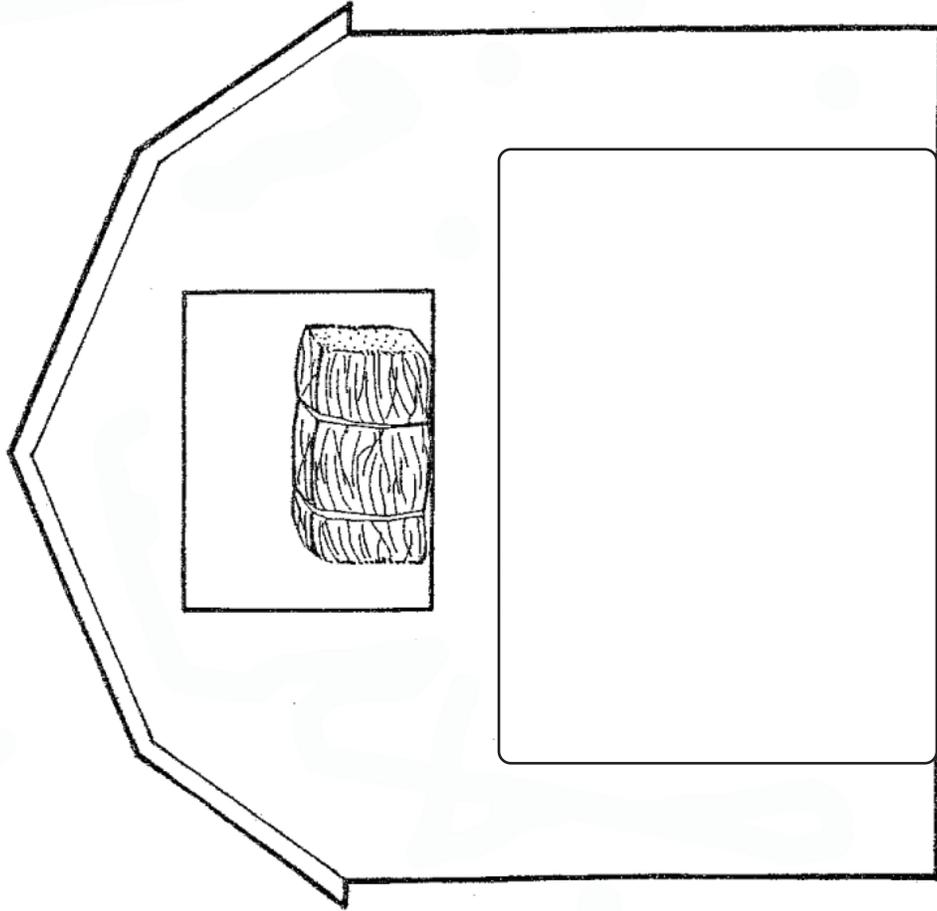
Doe and Kid



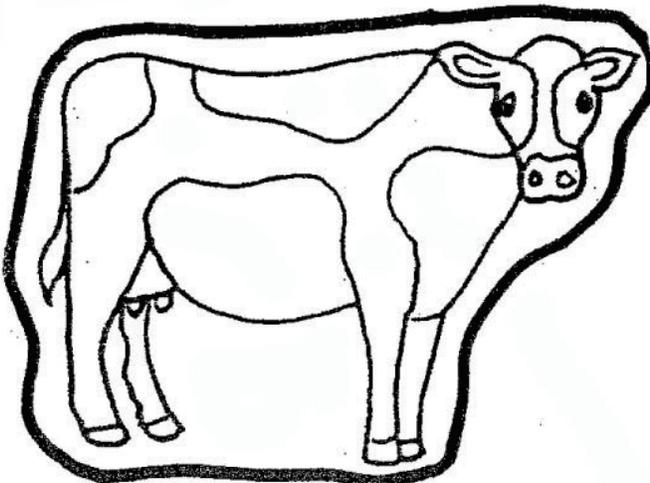
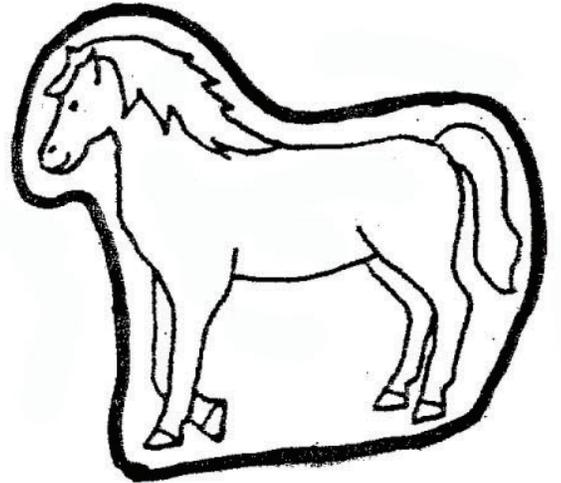
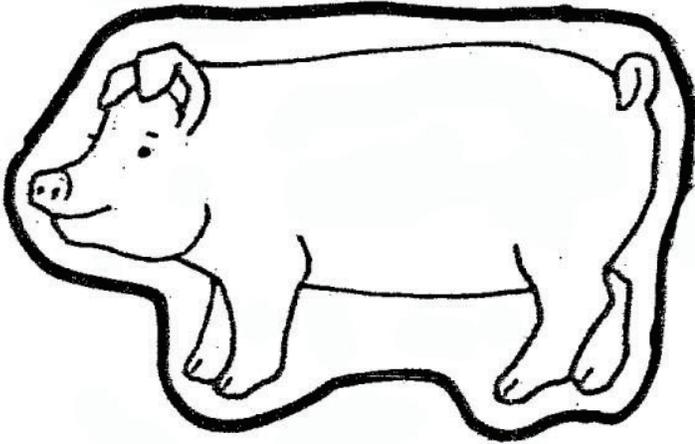
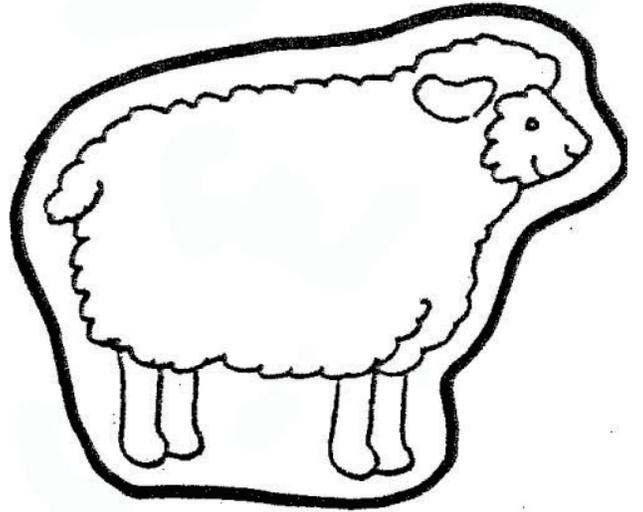
Buck



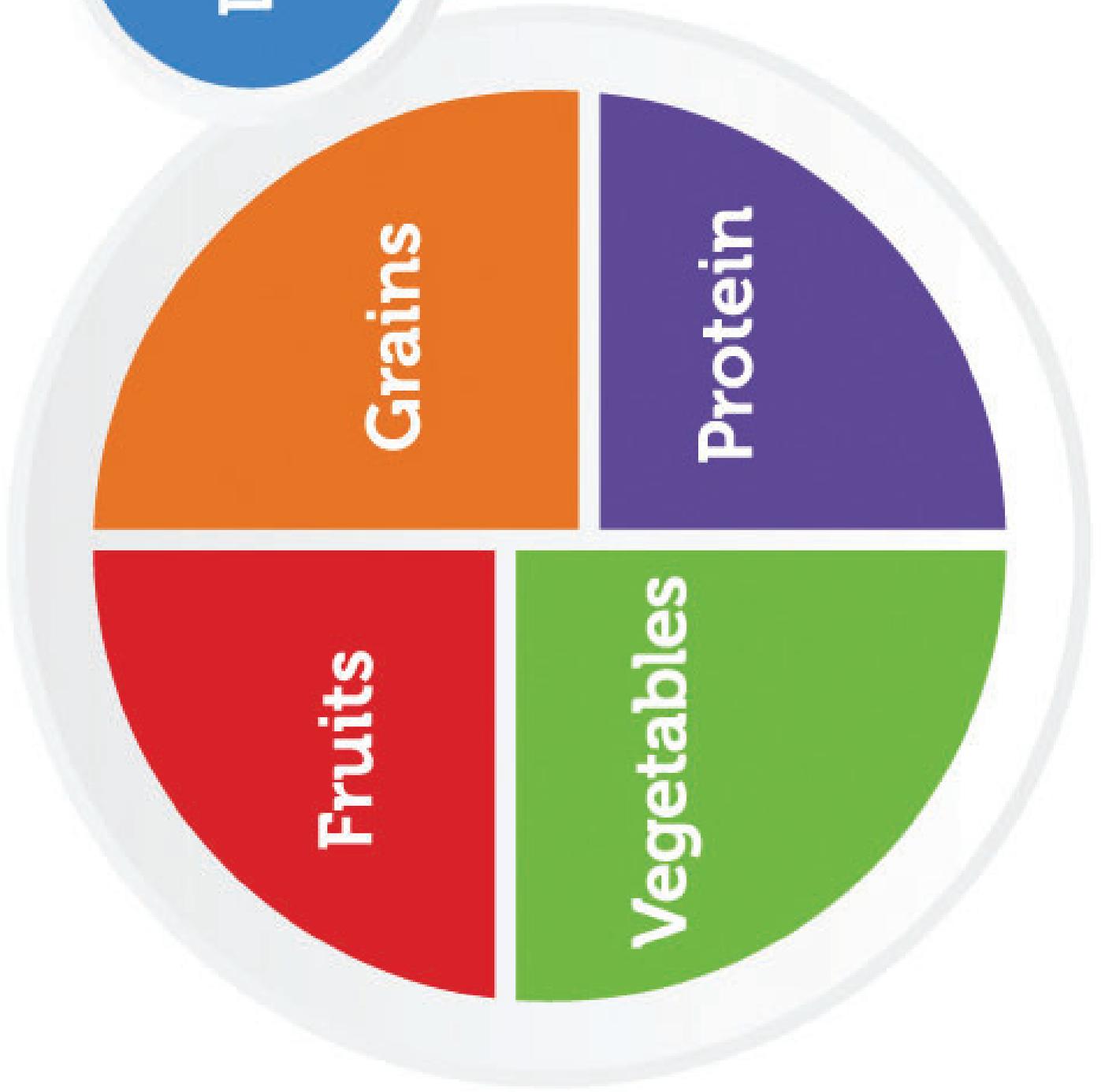
Barnyard Buddies – 1



Barnyard Buddies – 2



MyPlate Place Mat



What's **MyPlate** All About?

