

# Animal By-Products

Rikki Ruiz, Extension Educator

## Goal (learning objective)

Youth will identify products they use in daily life that contain animal by-products.

## Supplies

- Copies of Handouts 1-3 (as a packet, enough for group)
  - Handout 1 - “Sheep By-Products Worksheet”
  - Handout 2 - “Cow By-Products Worksheet”
  - Handout 3 - “Pig By-Products Worksheet”
- Copies of Handouts 4-6 (as a packet, enough for group)
  - Handout 4- “By-Products from Sheep”
  - Handout 5 - “By-Products from Cows”
  - Handout 6 - “By-Products from Pigs”
- Copies of Handouts 7-9 (1 copy for you)
  - Handout 7 - “Sheep By-Products Worksheet Answer Key”
  - Handout 8 - “Cow By-Products Worksheet Answer Key”
  - Handout 9 - “Pig By-Products Worksheet Answer Key”
- Pencils - enough for group

## Pre-lesson preparation

- Make photocopies of the handouts above.
- Read/review the handouts and terminology.

## Lesson directions and outline

Share the following information with the youth:

Livestock by-products are a part of many manufactured items that we use daily. Utilizing by-products enables us to use 99% of every animal. There are animal by-products in toothpaste, baseball equipment, clothing, items in your medicine cabinet, paint brushes and more.

### Conducting the activity (DO)

1. As a warm up, brainstorm with the group by-products that come from sheep, cows and pigs.
2. Have a volunteer distribute to each member a packet of Handouts 1-3.
3. Provide 10-15 minutes for members to work through the packet. Remember, they are working from the worksheet first so be prepared for questions, have them answer it to the best of their ability.
4. Once the group has completed the packet to the best of their ability, distribute the packet of Handouts 4-6.
5. Go through Handouts 1-3, reference your answer key (Handouts 7-9).
6. Ask: Were there any surprises as you worked through the worksheet?
7. Ask: Did anyone get all of the questions right for species that you don't work with?
8. Ask: Are there any similar by-products among the species?

**What did we learn? (REFLECT)**

- Ask: Why are by-products important?
- Ask: Why do we need to be knowledgeable about by-products?
- Ask: Are there any items that you use regularly that you didn't know were a by-product?

**Why is that important? (APPLY)**

- Ask: What are some specific ways consumers would be impacted, if by-products were not available?
- Ask: How might your understanding of by-products impact your decisions as a producer?
- Ask: What are some other settings where by-products are generated and put to good use?

**Resources**

Farm Credit. (2014). Everything But the Baa...*Knowledge Center: Education and Awareness*. Available at: <https://farmcreditknowledgecenter.com/Education-and-Awareness/Teaching-Materials/Educator-Resources-Blog/July-2014/Everything-But-the-Baaa.aspx>

Farm Credit. (2014). Everything But the Moo...*Knowledge Center: Education and Awareness*. Available at: <https://farmcreditknowledgecenter.com/Education-and-Awareness/Teaching-Materials/Educator-Resources-Blog/July-2014/Everything-But-the-Moo.aspx>

Farm Credit. (2014). Everything But the Oink...*Knowledge Center: Education and Awareness*. Available at: <https://farmcreditknowledgecenter.com/Education-and-Awareness/Teaching-Materials/Educator-Resources-Blog/July-2014/Everything-But-the-Oink.aspx>

National Agriculture in the Classroom (n.d). Teacher Center. *Ag-Knowledge*. Available at: <http://www.ag-classroom.org/teacher/agknow.htm>

Ohio State University Extension. (2011). Beef Carcass Evaluation. *Beef resource handbook* (pages 8-14 through 8-16).

Ohio State University Extension. (2008). Dairy Goats, Meat Goats, Fibert, Utility, and Pygmy Goats. *Goat resource handbook* (pages 112, 120, 127).

Ohio State University Extension. (2011). Sheep Products. *Sheep resource handbook for market and breeding projects* (pages 81-90).

Ohio State University Extension. (2000). Pork Products. *Swine resource handbook for market and breeding projects* (pages 5-1 through 5-8).

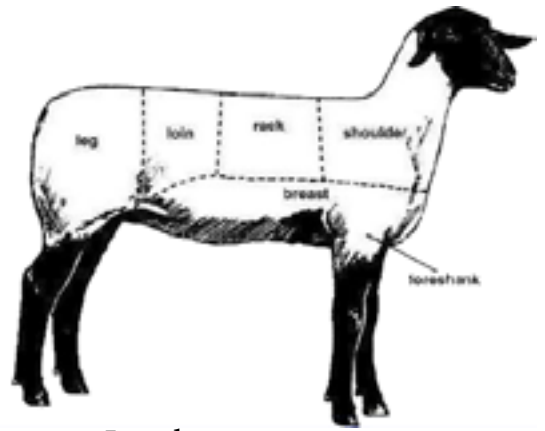
# Everything But the Baaaa.....

## Sheep By-Products Worksheet

Name: \_\_\_\_\_

### True or False?

Do the products listed below come from sheep? Write true next to the products you think come from sheep and false after the ones that you don't think come from sheep.



- \_\_\_\_\_ 1. Lanolin
- \_\_\_\_\_ 2. Lamb chops
- \_\_\_\_\_ 3. Peanut butter
- \_\_\_\_\_ 4. Yarn
- \_\_\_\_\_ 5. Baseballs
- \_\_\_\_\_ 6. Paper
- \_\_\_\_\_ 7. Paints

- \_\_\_\_\_ 8. Lumber
- \_\_\_\_\_ 9. Concrete
- \_\_\_\_\_ 10. Tennis balls
- \_\_\_\_\_ 11. Instrument strings
- \_\_\_\_\_ 12. Leg of Lamb
- \_\_\_\_\_ 13. Artists' brushes
- \_\_\_\_\_ 14. Drum heads

### Matching

Match the product on the left to the part of the sheep that you think it came from on the right. You may use the parts of the sheep more than once.

#### Products

- \_\_\_\_\_ 1. Surgical sutures
- \_\_\_\_\_ 2. Fabrics
- \_\_\_\_\_ 3. Rack of lamb
- \_\_\_\_\_ 4. Nitrogen fertilizer
- \_\_\_\_\_ 5. Chewing gum
- \_\_\_\_\_ 6. Clothing
- \_\_\_\_\_ 7. Solvents

#### Parts of the Sheep

- a. Intestines
- b. Hide and Wool
- c. Retail Meats
- d. Manure
- e. Fats and Fatty Acids

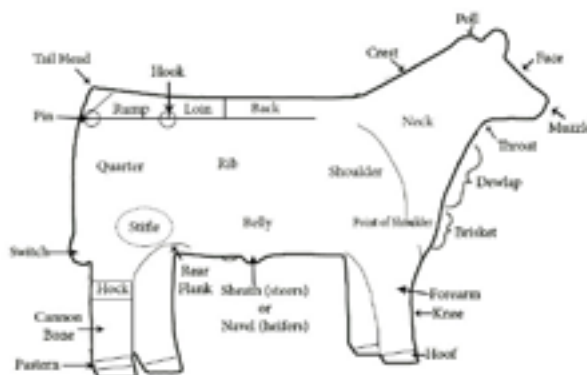
# Everything But the Moo.....

## Cow By-Products Worksheet

Name: \_\_\_\_\_

### True or False?

Do the products listed below come from cows? Write true next to the products you think come from cows and false after the ones that you don't think come from cows.



- |                           |                                  |
|---------------------------|----------------------------------|
| _____ 1. Medicine         | _____ 8. Solid wood fence boards |
| _____ 2. Anti-aging cream | _____ 9. Salt                    |
| _____ 3. Mashed potatoes  | _____ 10. Deodorant              |
| _____ 4. Felt             | _____ 11. Instrument strings     |
| _____ 5. Chewing gum      | _____ 12. Fertilizer             |
| _____ 6. Paper            | _____ 13. Plastics               |
| _____ 7. Cosmetics        | _____ 14. Rubber                 |

### Matching

Match the product on the left to the part of the cow that you think it came from on the right. You may use the parts of the cow more than once. Some parts may not be used.

#### Products

- \_\_\_\_\_ 1. Pasta
- \_\_\_\_\_ 2. Candles
- \_\_\_\_\_ 3. Sheet rock
- \_\_\_\_\_ 4. Phosphorus
- \_\_\_\_\_ 5. Chewing gum
- \_\_\_\_\_ 6. Refined sugar
- \_\_\_\_\_ 7. Shampoo
- \_\_\_\_\_ 8. Dyes & inks
- \_\_\_\_\_ 9. Air filters
- \_\_\_\_\_ 10. Hormones

#### Parts of the Cow

- a. Brain
- b. Blood
- c. Hooves/Horns
- d. Internal Organs
- e. Fat
- f. Milk
- g. Manure
- h. Skin
- i. Hair
- j. Bones

# Everything But the Oink.....

## Pig By-Products Worksheet

Name: \_\_\_\_\_

### True or False?

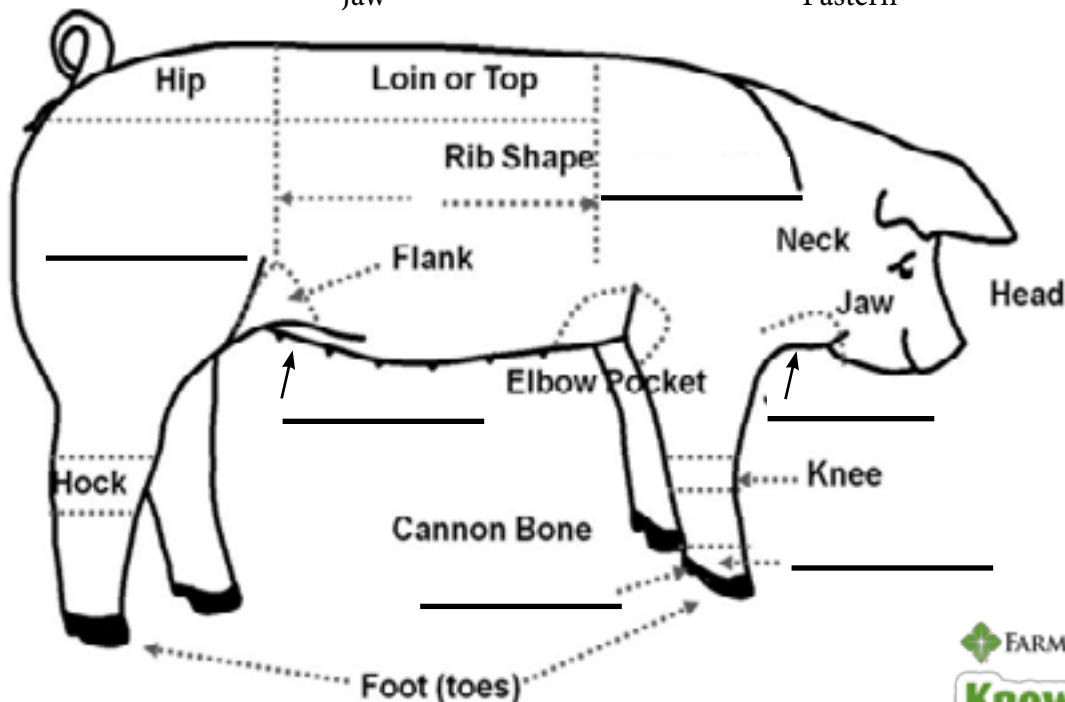
Do the products listed below come from pigs? Write true next to the products you think come from pigs and false after the ones that you don't think come from pigs.

- |       |    |              |       |     |                  |
|-------|----|--------------|-------|-----|------------------|
| _____ | 1. | Footballs    | _____ | 8.  | Lumber           |
| _____ | 2. | Bacon        | _____ | 9.  | Yarn             |
| _____ | 3. | Carrots      | _____ | 10. | Bone China       |
| _____ | 4. | Insecticides | _____ | 11. | Insulin          |
| _____ | 5. | Heart Valves | _____ | 12. | Pork Chops       |
| _____ | 6. | Paper        | _____ | 13. | Artists' brushes |
| _____ | 7. | Crayons      | _____ | 14. | Drum heads       |

### Label

Using the word bank below, label the missing parts of the pig. Not all words will be used.

- |         |          |           |
|---------|----------|-----------|
| Ham     | Loin     | Head      |
| Hock    | Flank    | Underline |
| Foot    | Shoulder | Neck      |
| Dewclaw | Jowl     | Knee      |
| Hip     | Jaw      | Pastern   |



# Everything But the Baaaa.....

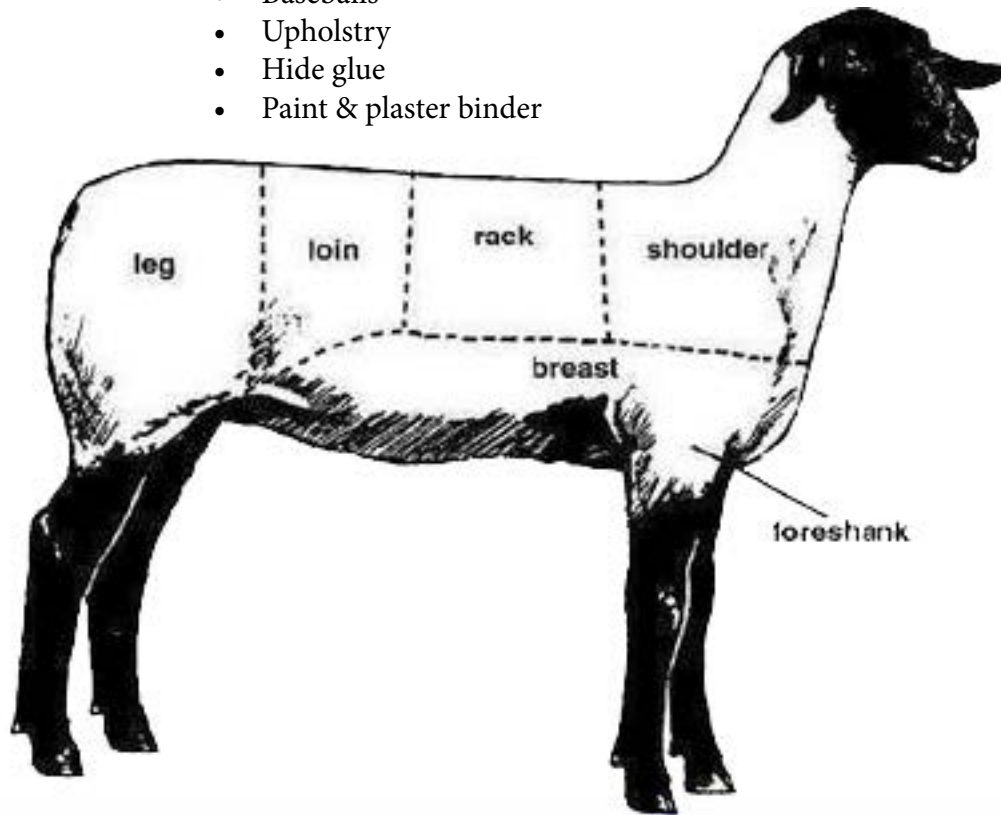
## By-Products from Sheep

### From Hide and Wool...

- Lanolin
- Clothing
- Drum heads
- Luggage
- Yarns
- Artists' brushes
- Sports equipment
- Fabrics
- Rouge base
- Insulation
- Rug pads
- Asphalt binder
- Textiles
- Ointment base
- Tennis balls
- Worsted fabric
- Felt
- Carpet
- Footwear
- Woolen goods
- Baseballs
- Upholstry
- Hide glue
- Paint & plaster binder

### From Fats and Fatty Acids...

- Explosives
- Solvents
- Chewing Gum
- Paints



### From Manure...

- Nitrogen fertilizer
- Potash
- Phosphorus
- Minor minerals

### From Intestines...

- Sausage casings
- Instrument strings
- Surgical sutures
- Tennis racquet strings

### And Of Course the Retail Meats....

- Leg of Lamb
- Lamb shoulder roasts
- Lamb chops
- Rack of lamb
- Lamb riblets and spareribs
- Lamb burgers
- Lamb kabobs
- Lamb shanks

*so many products come from sheep  
that we really do use everthing but  
the baaa!*

# Everything But the Moooo.....

## By-Products from Cows

### From Brain...

- Anti-aging cream medicines

### From Blood...

- Pasta
- Cake mixes
- Dyes & inks
- Adhesives
- Minerals
- Medicines
- Laboratory research materials

### From Bones...

- Refined sugar
- Charcoal
- Fertilizer
- Glass

### From Hair...

- Air filters
- Brushes
- Felt
- Isulation
- Plaster
- Textiles

### From Manure...

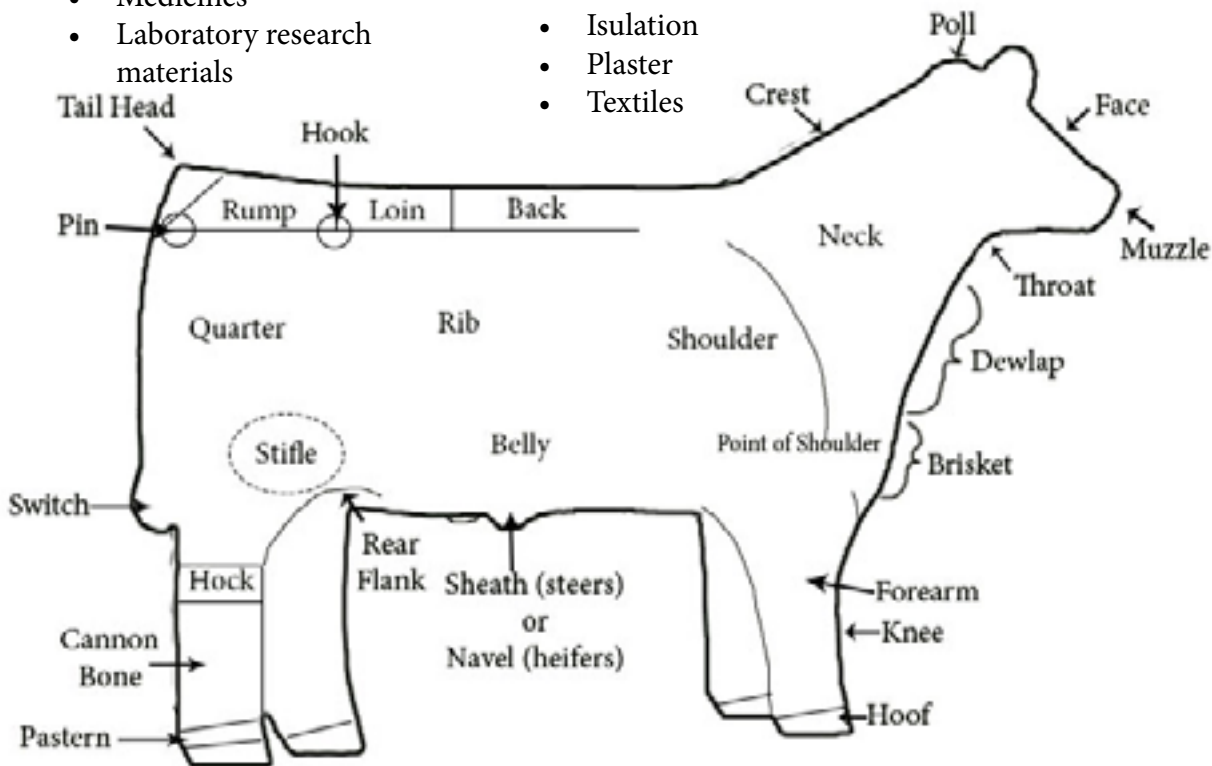
- Fertilizer
- Nitrogen
- Phosphorus

### From Internal Organs...

- Instrument strings
- Tennis racquet strings
- Hormones, enzymes, vitamins & other medical material

### From Fat...

- Chewing gum
- Candles
- Detergents
- Fabric softner
- Deodorant
- Shaving cream
- Perfume
- Pet food
- Cosmetics
- Creams & lotions
- Crayons
- Paint
- Oil & lubricants
- Biodiesel
- Plastics
- Waterproofing agents
- Cement
- Ceramics
- Chalk
- Explosives
- Fireworks
- Matches
- Fertilizer
- Antifreeze
- Insulation
- Linoleum
- Rubber
- Textiles
- Medicines



### From Hooves and Horns...

- Adhesives
- Plastics
- Pet food
- Plant food
- Photo film
- Shampoo & conditioner
- Emery boards
- Lamination
- Wallpaper
- Plywood

### From Milk...

- Adhesives
- Plastics
- Cosmetics
- Medicines

### From Skin...

- Gelatin
- Flavorings
- Emery boards
- Sheet rock
- Wallpaper
- Adhesives
- Medicines
- Candies & confectionary

so many products come from cows that we really do use everthing but the moooo!

# Everything But the Oink.....

## By-Products from Pigs

### From Blood...

- Medicines
- Sticking agent
- Leather treating agent
- Plywood Adhesive
- Protein source in feeds
- Fabric printing and dyeing

### From Brain...

- Cholesterol
- Other medicines

### From Hair...

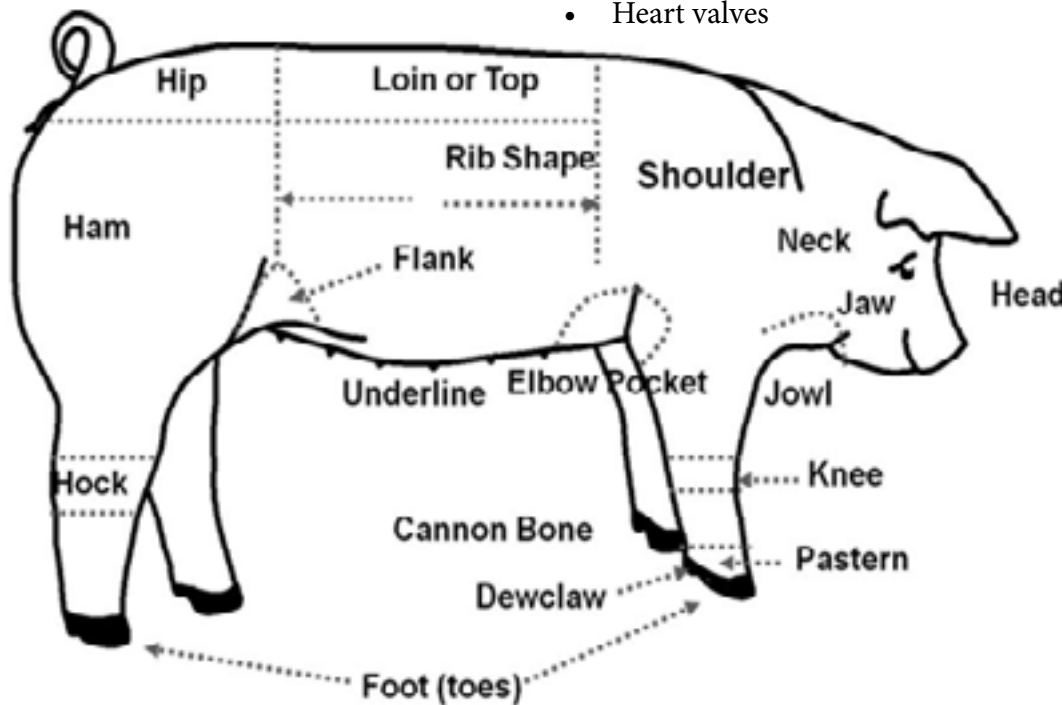
- Artist's brushes
- Insulation
- Upholstery

### From Internal Organs...

- Isulin
- A variety of medicines
- Surgical sutures
- Heart valves

### From Skin...

- Gelatin
- Footballs
- Porcine Burn Dressings
- Luggage, purses
- Gloves and shoes
- Pigskin garmets
- Drumheads



### From Bones...

- Glue
- Buttons
- Bone China
- Bone Meal
- Minerals for feed
- Fertilizer
- Porcelain enamel
- Glass
- Water filters

### From Fatty Acids and Glycerine...

- |                |                    |                        |             |
|----------------|--------------------|------------------------|-------------|
| • Insecticides | • Nitroglycerine   | • Waterproofing agents | • Matches   |
| • Weed killers | • Plastics         | • Fiber softeners      | • Putty     |
| • Lubricants   | • Plasticizers     | • Crayons              | • Inulation |
| • Oil polishes | • Printing rollers | • Chalk                | • Linoleum  |
| • Rubber       | • Cellophane       | • Phonograph records   |             |
| • Cosmetics    | • Floor waxes      |                        |             |
| • Antifreeze   | • Cement           |                        |             |

### From Meat Scraps...

- Commercial feeds
- Pet food

AND OF COURSE: bacon, ham, sausage, pork chops, ribs, BBQ and more!

so many products come from pigs that we really do use everthing but the oink!



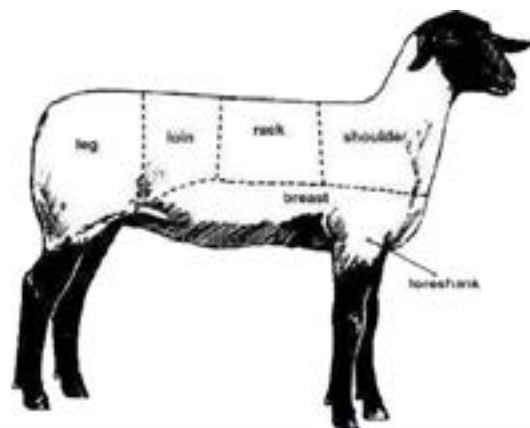
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| <u>True</u>  | 2. | Lamb chops    | <u>False</u> | 9.  | Concrete           |
| <u>False</u> | 3. | Peanut butter | <u>True</u>  | 10. | Tennis balls       |
| <u>True</u>  | 4. | Yarn          | <u>True</u>  | 11. | Instrument strings |
| <u>True</u>  | 5. | Baseballs     | <u>True</u>  | 12. | Leg of Lamb        |
| <u>False</u> | 6. | Paper         | <u>True</u>  | 13. | Artists' brushes   |
| <u>True</u>  | 7. | Paints        | <u>True</u>  | 14. | Drum heads         |

### Matching

Match the product on the left to the part of the sheep that you think it came from on the right. You may use the parts of the sheep more than once.

#### Products

- c 1. Rack of lamb
- a 2. Surgical sutures
- b 3. Fabrics
- e 4. Chewing gum
- b 5. Clothing
- e 6. Solvents
- d 7. Nitrogen fertilizer

#### Parts of the Sheep

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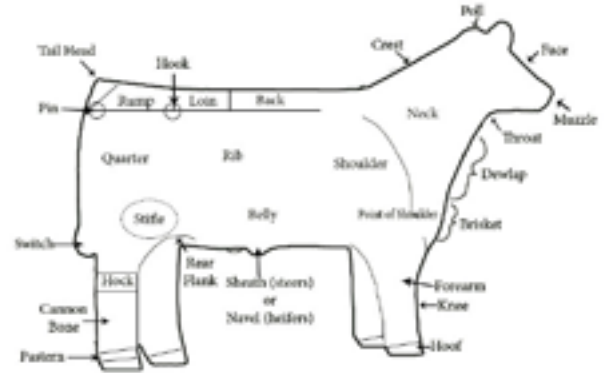
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| <u>True</u>  | 2. | Anti-aging cream | <u>False</u> | 9.  | Salt                    |
| <u>False</u> | 3. | Mashed potatoes  | <u>True</u>  | 10. | Deodorant               |
| <u>True</u>  | 4. | Felt             | <u>True</u>  | 11. | Instrument strings      |
| <u>True</u>  | 5. | Chewing gum      | <u>True</u>  | 12. | Fertilizer              |
| <u>False</u> | 6. | Paper            | <u>True</u>  | 13. | Plastics                |
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### Matching

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- i 9. Air filters
- d 10. Hormones

#### Parts of the Cow

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## Pig By-Products Worksheet

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| <u>False</u> | 3. | Carrots      | <u>True</u>  | 10. | Bone China       |
| <u>True</u>  | 4. | Insecticides | <u>True</u>  | 11. | Insulin          |
| <u>True</u>  | 5. | Heart Valves | <u>True</u>  | 12. | Pork Chops       |
| <u>False</u> | 6. | Paper        | <u>True</u>  | 13. | Artists' brushes |
| <u>True</u>  | 7. | Crayons      | <u>True</u>  | 14. | Drum heads       |

### Label

Using the word bank below, label the missing parts of the pig. Not all words will be used.

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|---------|----------|-----------|
| Ham     | Loin     | Head      |
| Hock    | Flank    | Underline |
| Foot    | Shoulder | Neck      |
| Dewclaw | Jowl     | Knee      |
| Hip     | Jaw      | Pastern   |

