DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON ONE

PIGS, PEOPLE, AND THE PLANET

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Describe an overview of the pork industry and its impact on the United States.
- Identify the roles people have in the pork industry.
- Identify areas pig farmers focus on to be environmentally friendly.
- Explain the career of a contract pig farmer.

DESTINATION PORK

KEY TERMS

- WEANED
- BY-PRODUCT
- GROSS INCOME
- ORGANIC
- PASTURE PORK
- HERITAGE BREEDS

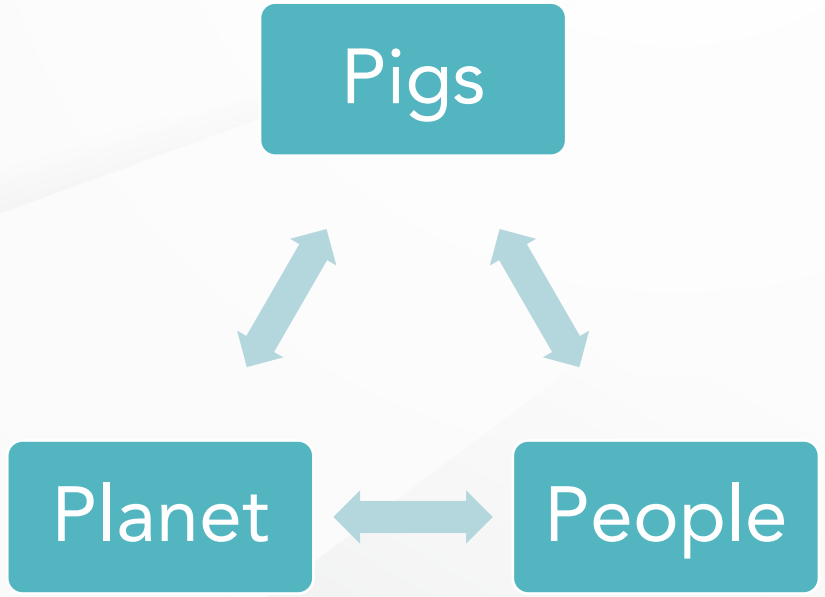
DESTINATION PORK

OBJECTIVE ONE

GIVE AN OVERVIEW OF THE PORK INDUSTRY AND ITS IMPACT ON THE UNITED STATES.

DESTINATION PORK

DRAW ONE OF THE DIAGRAMS IN YOUR NOTES

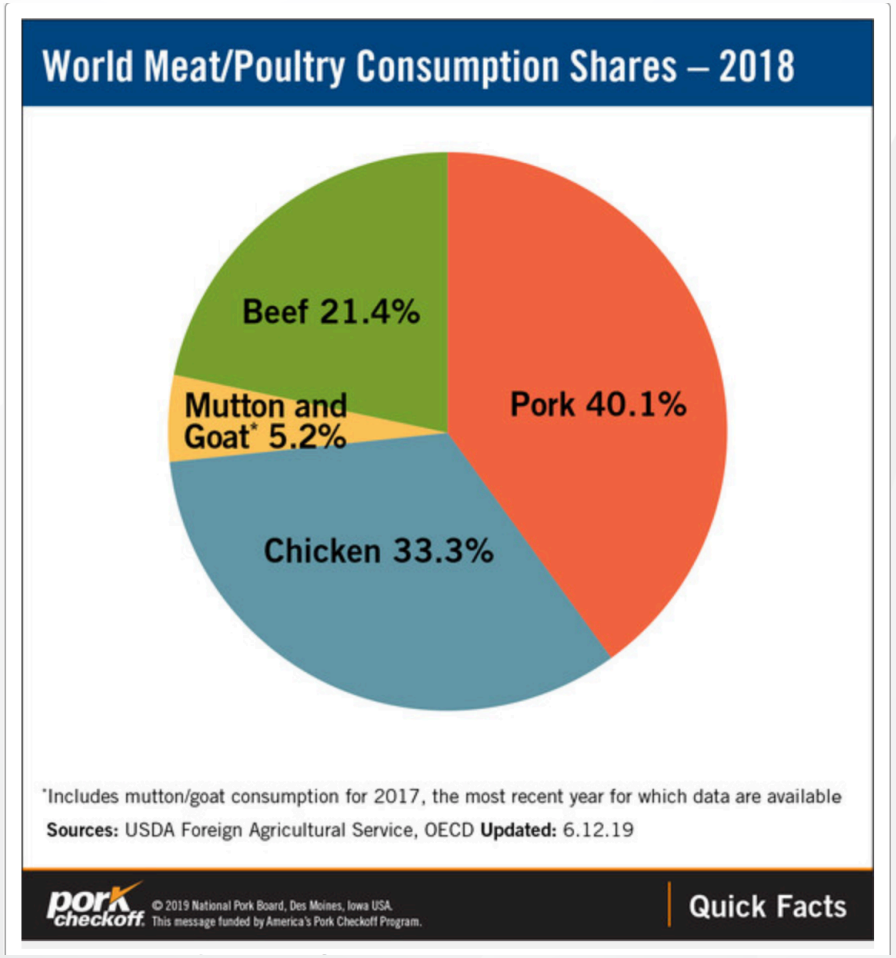


PIGS → PEOPLE → PLANET

DESTINATION PORK

PIGS

- PROVIDE FOOD AND BY-PRODUCTS
- PIGS ARE THE LEADING GLOBAL SUPPLIER OF MEAT (PROTEIN)
- IN 2018, WORLD MEAT/POULTRY CONSUMPTION STATISTICS INDICATED THAT 40.1% OF ALL MEAT CONSUMPTION WAS PORK FOLLOWED BY CHICKEN AT 33.3%, BEEF AT 21.4% AND MUTTON/GOAT AT 5.2%.
- PORK IS HIGH IN PROTEIN AND RICH IN VITAMINS AND MINERALS, WHICH IS IMPORTANT FOR A HEALTHY DIET.



DESTINATION PORK

PIGS

- PIGS ARE BORN, ***WEANED*** AT 21 DAYS, TRANSFERRED TO A NURSERY WHERE THEY ARE HOUSED WITH PIGS FROM OTHER LITTERS AND FED UNTIL THEY ARE MARKET WEIGHT.
  - Pigs reach market weight at approximately 250-280 pounds.
- PIGS ARE THEN MARKETED OR SOLD AND PROCESSED INTO PORK AND BY-PRODUCTS.
  - Pork examples are ham, loin chops, bacon, tenderloin, sausage, etc.
  - By-product examples are pharmaceuticals, crayons, glue, buttons, fertilizer, lubricants, rubber, cosmetics, insulation, etc.

DESTINATION PORK

OBJECTIVE TWO

IDENTIFY THE ROLES PEOPLE HAVE IN THE PORK INDUSTRY.

DESTINATION PORK

FACTS ABOUT PEOPLE AND PIGS

- PEOPLE ARE THE CONSUMERS AND USERS OF PORK AND ***BY-PRODUCTS***
- PEOPLE ARE ALSO PIG FARMERS, TRANSPORTERS (TRUCKERS), AND MARKETERS OF PORK
- THE PORK INDUSTRY SUPPORTS NEARLY 550,000 JOBS, INCLUDING PIG FARMERS, MEAT PROCESSERS, TRANSPORTERS, AND ACCOUNTANTS
- ON AVERAGE, PORK PRODUCTION PROVIDES TOTAL ***GROSS INCOME*** OF MORE THAN $20 BILLION

DESTINATION PORK

FACTS ABOUT PEOPLE AND PIGS

- THE DEMAND FOR PORK AND BY-PRODUCTS VARIES AND THAT DRIVES THE PRODUCTION METHODS USED.
  - Conventional production: Pigs are typically raised in environmentally-regulated barns that are cooled/heated to keep pigs comfortable year-round, fed a diet predominantly comprised of corn/grain, and medications may need to be administered for pig health and well-being.
  - Alternative/Niche: Production methods to capture a different consumer market, including ***organic***, ***pasture pork***, ***heritage breeds***, antibiotic free, etc.
- PORK IS A GLOBAL INDUSTRY:
  - The United States is third in pork production – China is No. 1 followed by the European Union at No. 2.
- NO MATTER WHERE OR HOW PORK IS PRODUCED, IT IS ESSENTIAL TO FEEDING THE WORLD AND PROVIDING BY-PRODUCTS FOR OUR EVERYDAY LIVES.

DESTINATION PORK

CAREER HIGHLIGHT

CONTRACT PIG FARMER

DESTINATION PORK

OBJECTIVE THREE

IDENTIFY AREAS PIG FARMERS FOCUS ON TO BE ENVIRONMENTALLY FRIENDLY.

DESTINATION PORK

FACTS ABOUT PIGS, PEOPLE, AND THE PLANET

- THERE IS A DIRECT CONNECTION BETWEEN PIGS AND PEOPLE. IT DOESN'T STOP THERE – THE PLANET ALSO PLAYS A ROLE IN THE PRODUCTION OF PORK. PIG FARMERS WORK HARD TO PROTECT THE PLANET.
- BECAUSE PORK IS CONSUMED GLOBALLY, PIG FARMERS ARE FOCUSED ON HOW THEY RAISE PORK TO FEED THE WORLD AND DO IT WHILE SUSTAINING THE ENVIRONMENT.

DESTINATION PORK

FACTS ABOUT PIGS, PEOPLE, AND THE PLANET

- AREAS THAT PIG FARMERS ARE COMMITTED TO MANAGING RESPONSIBLY INCLUDE:
  - Water quality
  - Air quality
  - Land management
  - Manure management
  - Conservation
  - Recycling

DESTINATION PORK

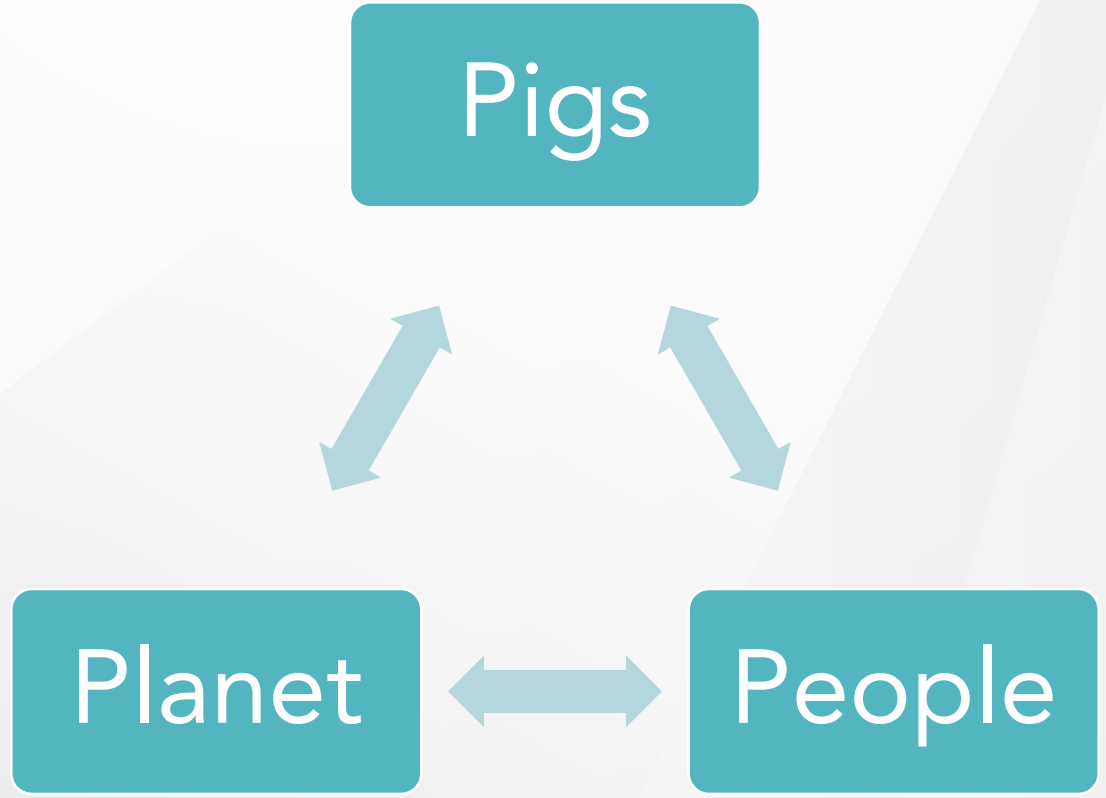
ENVIRONMENTAL CONSERVATION

- JOURNAL/CAPTURE THOUGHTS ABOUT:
  - Area of environmental conservation you want to know more about.
  - List of questions/areas about which you want to learn more.
  - How you believe farmers responsibly manage these areas.

DESTINATION PORK

THE RELATIONSHIP REVEALED

PEOPLE TAKE CARE OF THE PIGS, PIGS TAKE CARE OF THE PEOPLE, PIGS AND PEOPLE TAKE CARE OF THE PLANET.



DESTINATION PORK

TICKET OUT THE DOOR

- WRITE DOWN THE FOLLOWING:
  - Three new things you learned.
  - Two things you want to know more about and discover as you go through this unit.
  - One “nugget” you will share with someone (teacher, family, other students not in this class, etc.) about the pork industry

DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON TWO

THE PIG AS A PRODUCT

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Identify basic anatomy of the pig and explain where common pork cuts originate.
- Describe unique characteristics of the pig and their functions.
- Explain the career of a pork product developer.

DESTINATION PORK

KEY TERMS

- FRONT THIRD OF PIG
- MIDDLE THIRD OF PIG
- REAR THIRD OF PIG
- LEAN
- MONOGASTRIC
- POLYGASTRIC

DESTINATION PORK

MENU OPTIONS

- YOU HAVE DECIDED TO OFFER PORK ENTREES AT YOUR RESTAURANT. YOU NEED TO DECIDE ON:
  - Which two—three pork items to include on your menu
  - Give rationale as to WHY you choose each one
- EXAMPLES OF WHAT SHOULD BE CONSIDERED IN YOUR DECISION:
  - Cooking methods
  - Customer
  - Budget

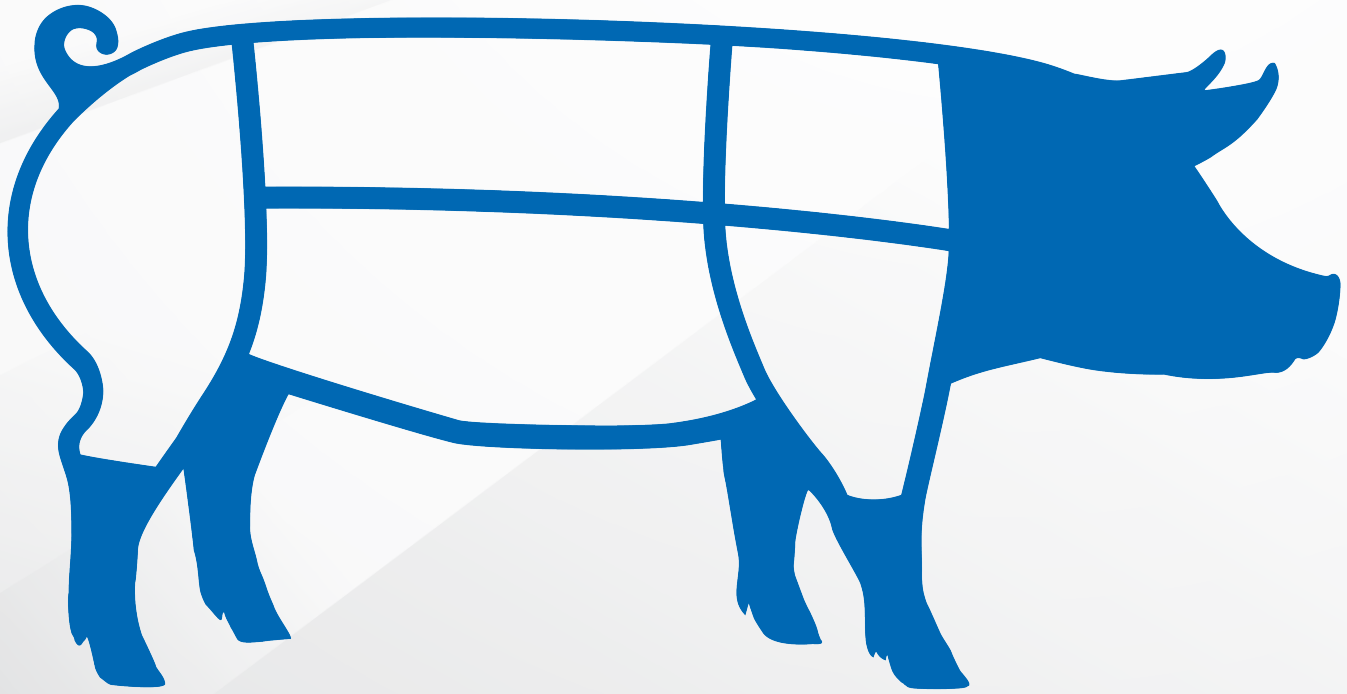
DESTINATION PORK

OBJECTIVE ONE

IDENTIFY BASIC ANATOMY OF THE PIG AND EXPLAIN WHERE COMMON PORK CUTS ORIGINATE.

DESTINATION PORK

LABEL THE PARTS YOU KNOW

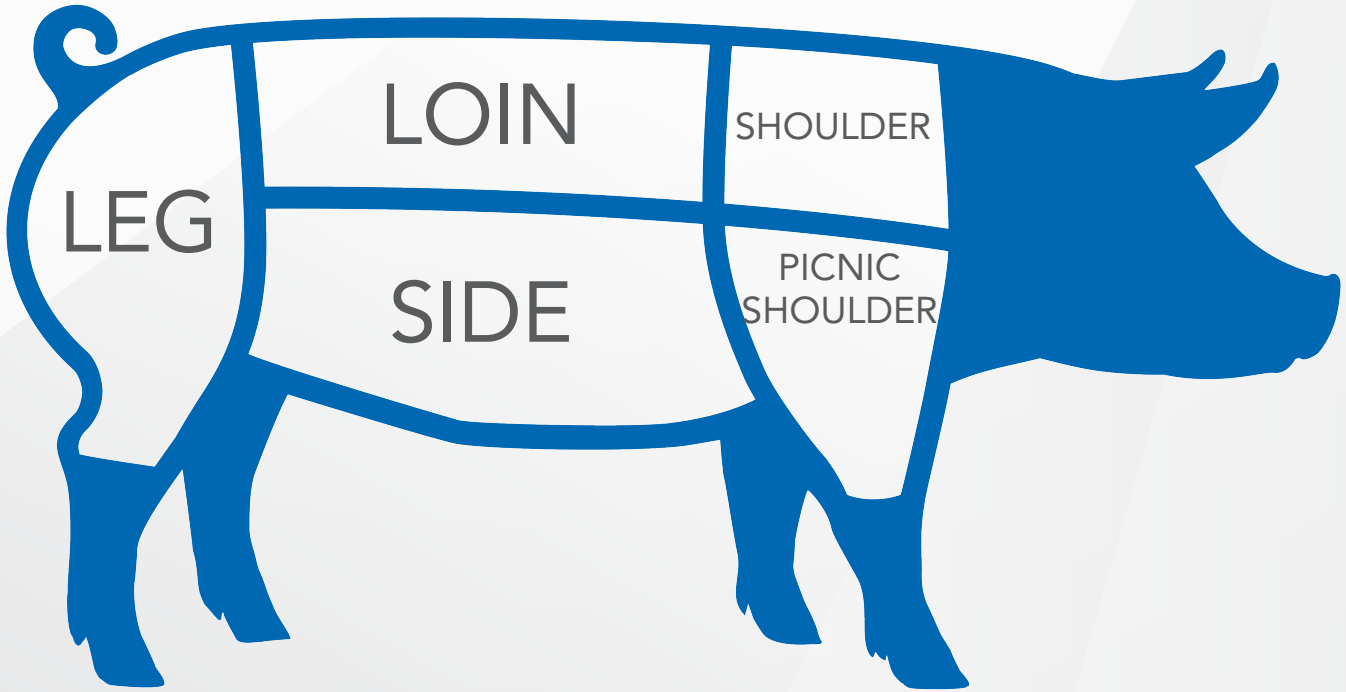


DESTINATION PORK

ANATOMY OF PIG

THINK OF THE PIG IN THIRDS:

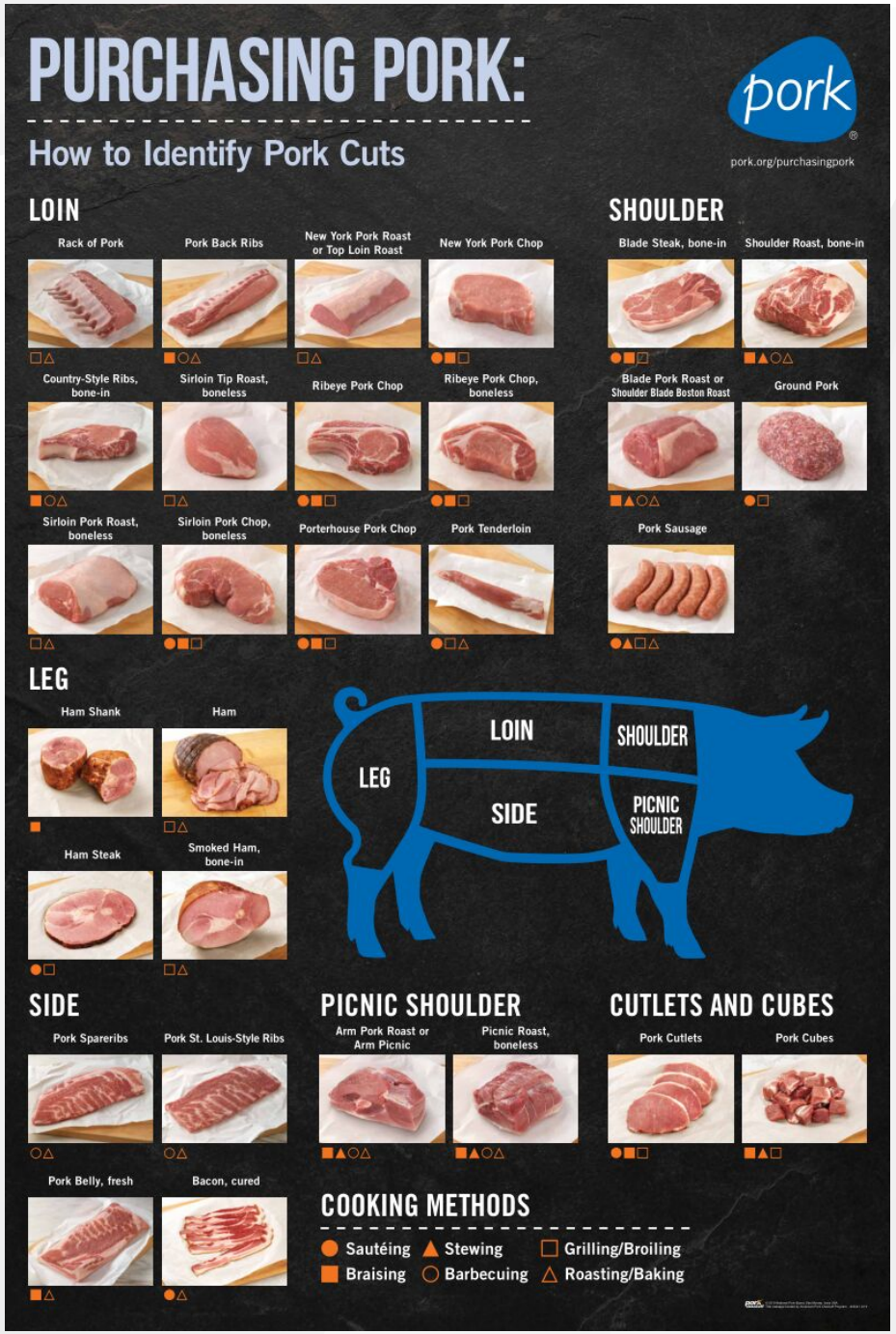
- Front third – Shoulder, neck, jowl
- Middle third – loin, side, underline, fore flank, rear flank
- Rear third – leg, tail, hock



DESTINATION PORK

FRONT THIRD

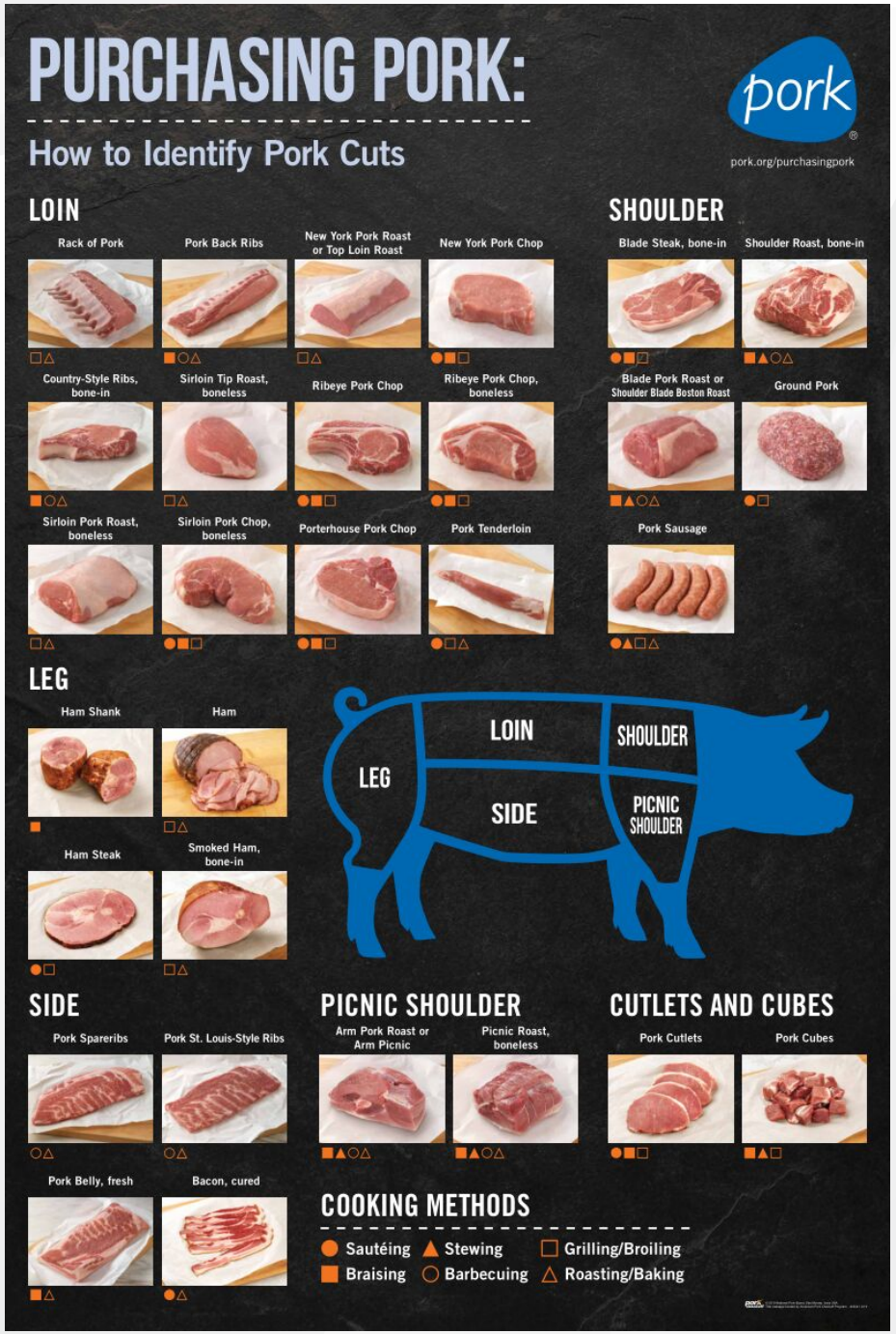
- THE MOST VALUABLE CUTS ARE:
  - Blade Steak, Bone-In
  - Shoulder Roast, Bone-In
  - Blade Pork Roast (Shoulder Blade Boston Roast)
  - Ground Pork
  - Pork Sausage
  - Arm Pork Roast/Arm Picnic
  - Picnic Roast, Boneless
- JOWL (BACON) AND FRONT FEET (PICKLED PIGS' FEET) ARE ALSO SOLD FOR CONSUMPTION



DESTINATION PORK

MIDDLE THIRD

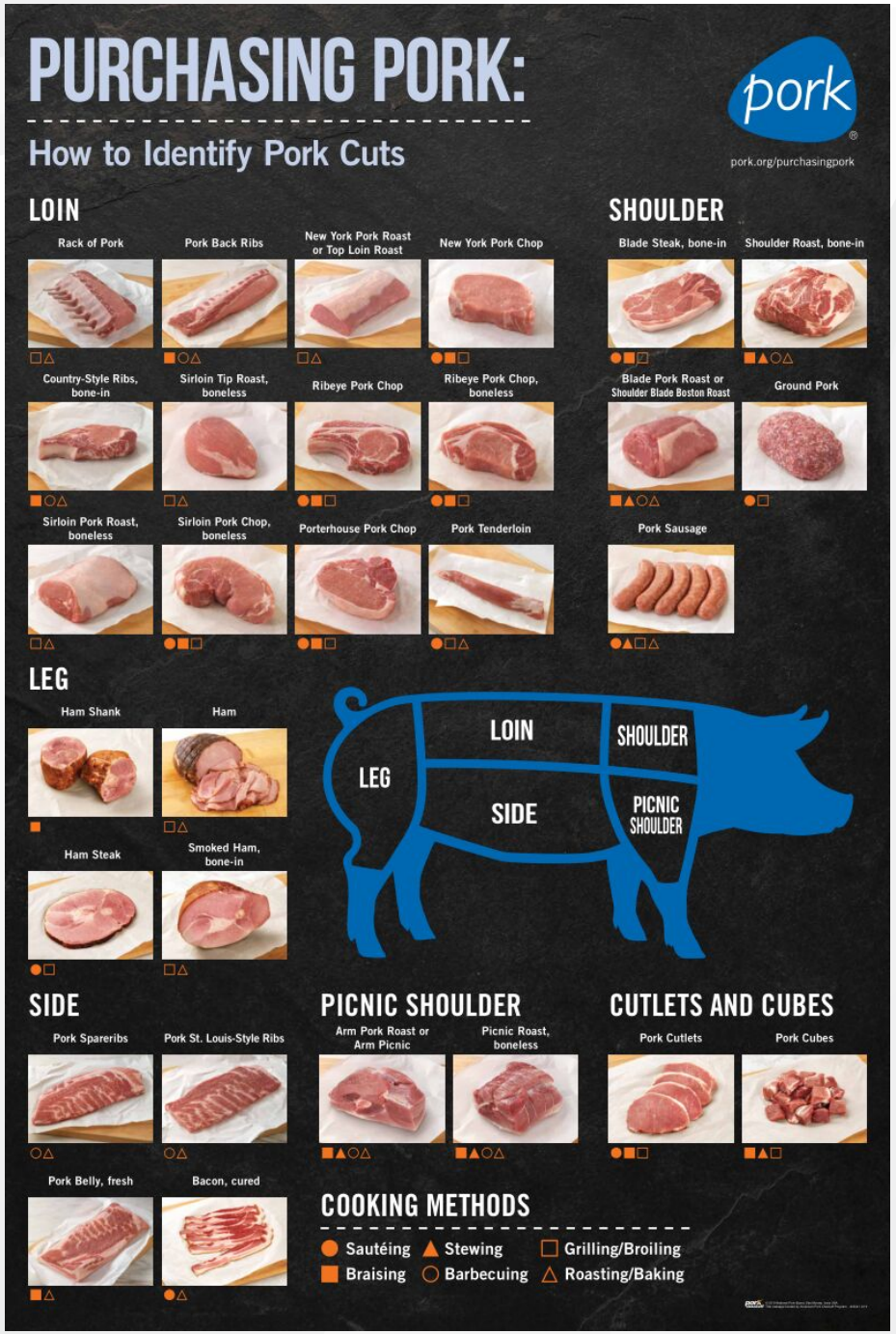
- THE MOST VALUABLE CUTS ARE:
  - Rack of Pork
  - Pork Back Ribs
  - New York Pork Roast (Top Loin Roast)
  - New York Pork Chop
  - Country-Style Ribs, Bone-In
  - Sirloin Tip Roast, Boneless
  - Ribeye Pork Chop
  - Ribeye Pork Chop, Boneless
  - Sirloin Pork Roast, Boneless
  - Sirloin Pork Chop, Boneless
  - Porterhouse Pork Chop
  - Pork Tenderloin
  - Pork Spareribs
  - Pork St. Louis-Style Ribs
  - Pork Belly, Fresh
  - Bacon, Cured



DESTINATION PORK

REAR THIRD

- THE MOST VALUABLE CUTS ARE:
  - Ham Shank
  - Ham
  - Ham Steak
  - Smoked Ham, Bone-In



DESTINATION PORK

PORK: A HEALTHY CHOICE



- TODAY'S PORK IS 16 PERCENT LEANER AND 27 PERCENT LOWER IN SATURATED FAT COMPARED TO 26 YEARS AGO. EIGHT CUTS OF PORK MEET THE USDA GUIDELINES FOR "LEAN."
- PORK IS AN EXCELLENT SOURCE OF THIAMIN, NIACIN, RIBOFLAVIN, VITAMIN B-6, PHOSPHORUS AND PROTEIN AND A GOOD SOURCE OF ZINC AND POTASSIUM.
- PORK CAN BE COOKED A VARIETY OF WAYS—COOKING TEMPERATURE FOR FRESH PORK IS 145 DEGREES F, FOLLOWED BY A THREE-MINUTE REST.

DESTINATION PORK

CAREER HIGHLIGHT

PORK PRODUCT DEVELOPMENT

DESTINATION PORK

OBJECTIVE TWO

DESCRIBE UNIQUE CHARACTERISTICS OF THE PIG AND THEIR FUNCTIONS.

DESTINATION PORK

BLUE CARDS: PIG'S DIGESTIVE SYSTEM

- A PIG'S DIGESTIVE SYSTEM IS SIMILAR TO A HUMAN'S DIGESTIVE SYSTEM!
- THE PIG HAS A DIGESTIVE SYSTEM WHICH IS CLASSIFIED AS MONOGASTRIC OR NON-RUMINANT. HUMANS ALSO HAVE THIS TYPE OF DIGESTIVE SYSTEM.

DESTINATION PORK

BLUE CARDS: PIG'S DIGESTIVE SYSTEM

- PIGS HAVE ONE STOMACH (MONO = ONE, GASTRIC = STOMACH). THE MONOGASTRIC DIFFERS FROM THAT OF A **POLYGASTRIC** OR RUMINANT DIGESTIVE SYSTEM FOUND IN CATTLE AND SHEEP. THESE ANIMALS HAVE ONE STOMACH BROKEN INTO FOUR COMPARTMENTS.
- DUE TO THE DIFFERENCES IN THE DIGESTIVE SYSTEMS, CATTLE CAN UTILIZE DIFFERENT TYPES OF FEEDS THAN PIGS. CATTLE AND SHEEP CAN LIVE ON HAY AND PASTURE, WHILE PIGS MUST EAT GRAINS THAT CAN BE DIGESTED MORE EASILY.

DESTINATION PORK

RED CARDS: PIG'S SENSES

- PIGS HAVE A GREAT SENSE OF SMELL. THE PIG'S NOSTRILS ARE ON ITS LEATHERY SNOUT, WHICH IS VERY SENSITIVE TO TOUCH. THE PIG USES THE SNOUT TO SEARCH, OR ROOT, FOR FOOD.
- PIGS ARE AMONG THE SMARTEST OF ALL ANIMALS.
- PIGS HAVE POOR EYESIGHT.
- PIGS HAVE 15,000 TASTE BUDS COMPARED TO HUMANS WHO ONLY HAVE 9,000.

DESTINATION PORK

GREEN CARDS: PIGS AND MEDICAL ADVANCES

- PIGS ARE A CONTRIBUTOR TO HUMAN MEDICAL ADVANCES.
- PIGS HAVE PROVEN TO BE PARTICULARLY EFFECTIVE IN BIOMEDICAL RESEARCH FOR HUMAN DISEASE BECAUSE THEIR COMPARATIVE ANATOMY AND PHYSIOLOGY CLOSELY RESEMBLE THAT OF HUMANS. THIS MAKES THEM EXCELLENT MATCHES FOR RESEARCH IN GENE AND CELL THERAPY, XENOGRAFT AND ALLOGRAFT PROCEDURES, AND OTHER TYPES OF REGENERATIVE MEDICINE.

DESTINATION PORK

GREEN CARDS: PIGS AND MEDICAL ADVANCES

- PIGS HAVE BEEN USED IN BIOMEDICAL RESEARCH IN A VARIETY OF AREAS: CARDIOVASCULAR, GASTROINTESTINAL, METABOLIC, LIVER, REPRODUCTIVE, AND INFECTIOUS DISEASE.
- PIGS HAVE ALSO HELPED RESEARCHERS LEARN MORE ABOUT WOUND HEALING.

DESTINATION PORK

TICKET OUT THE DOOR: THEN-NOW-FUTURE

- RESPOND TO THE FOLLOWING IN THE “THEN” COLUMN:
  - What were some similarities and differences in porkchops, bacon, and pigs 50 years ago?

- RESPOND TO THE FOLLOWING IN THE “FUTURE” COLUMN:
  - What will pork be like 50 years from now? What new and different career might be available?

DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON THREE

PIGS FROM CONCEPTION TO CONSUMPTION

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Explain each phase of the life cycle of a pig.
- Distinguish the similarities and differences between the three common types of swine production.
- Explain the career of a sow farm manager.

DESTINATION PORK

KEY TERMS

- GESTATION
- FARROWING
- GILT
- SOW
- ARTIFICIAL INSEMINATION (AI)
- BOAR
- FARROW-TO-FINISH
- FARROW-TO-FEEDER
- GROW/FINISH
- VERTICALLY INTEGRATED

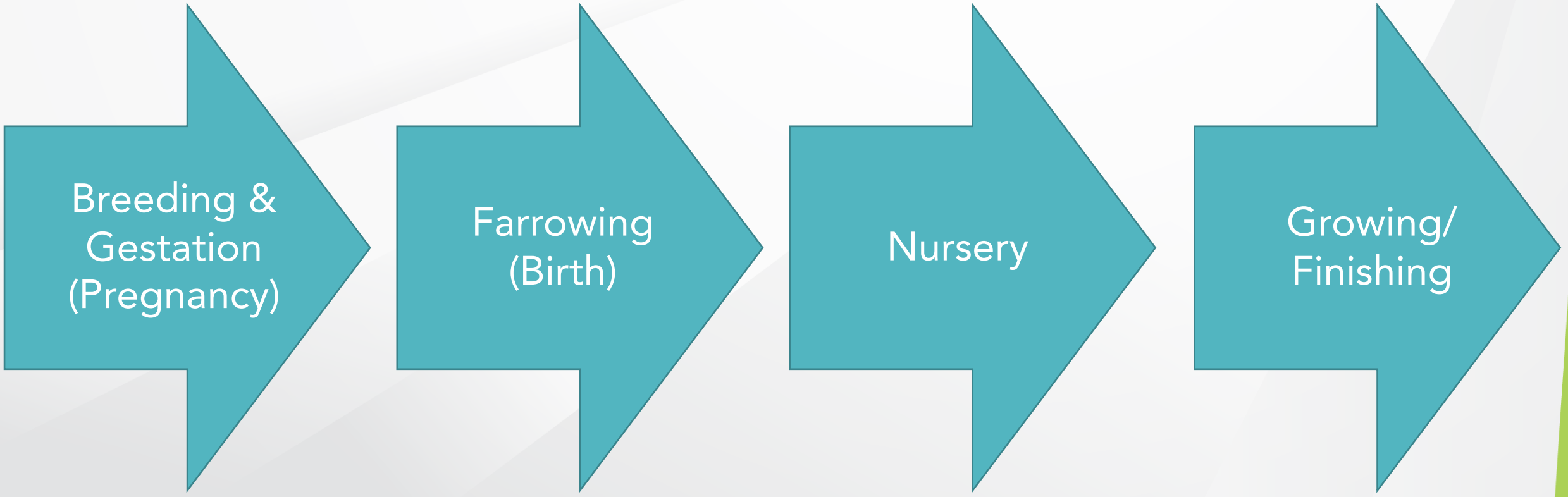
DESTINATION PORK

OBJECTIVE ONE

EXPLAIN EACH PHASE OF THE LIFE CYCLE OF A PIG.

DESTINATION PORK

LIFE CYCLE OF A PIG



DESTINATION PORK

PHASES OF PIG LIFE CYCLE: BREEDING & GESTATION

- ***GILTS*** (FEMALE PIGS) REACH MATURITY AND ARE BRED AT 170 TO 220 DAYS OF AGE.
- AFTER DELIVERING THEIR FIRST LITTER OF PIGS, GILTS ARE CALLED ***SOWS***.
- GESTATION (PREGNANCY) IS 114 DAYS (THREE MONTHS, THREE WEEKS, THREE DAYS).

DESTINATION PORK

PHASES OF PIG LIFE CYCLE: BREEDING & GESTATION

THREE BREEDING TECHNIQUES:

- Artificial Insemination (AI): This technique doesn't require a boar to be present at the time breeding occurs. Semen that was previously collected from the boar inseminates the female. This happens when a skilled technician uses specialized tools and the pre-packaged semen to inseminate the gilt or sow. AI is the most commonly used method by producers.
- Pen Mating – A boar (or boars) are placed in a pen with one or more female pigs
- Hand Mating – One boar is placed with one sow and observed/assisted by a technician to make sure mating occurs successfully

DESTINATION PORK

PHASES OF PIG LIFE CYCLE: FARROWING (BIRTH)

SOWS CAN FARROW THEIR PIGLETS IN DIFFERENT TYPES OF HOUSING:

- The industry norm is to place sows in stalls for farrowing. This is designed to protect them, the piglets, and the workers.
- Sows might deliver piglets in open pens. These may be rectangular in shape, straw-bedded, and may incorporate a heated creep area in one corner.
- A producer may have sows farrow in outdoor huts. Huts may be different in styles and shapes.

DESTINATION PORK

PHASES OF PIG LIFE CYCLE: FARROWING (BIRTH)

- AN AVERAGE LITTER IS 12-14 PIGLETS. PIGS WEIGH TWO-FOUR POUNDS AT BIRTH.
- FIRST THREE—FOUR DAYS AFTER BIRTH IS IMPORTANT FOR OBSERVATION AND CARING FOR NEWBORN PIGLETS.
- SOWS NURSE PIGLETS UNTIL THEY ARE WEANED AT ABOUT 21 DAYS OF AGE.



DESTINATION PORK

PHASES OF PIG LIFE CYCLE: NURSERY

- PIGLETS ARE WEANED AND FED SOLID FEED AROUND TWO—FOUR WEEKS OLD AND MOVED TO ANOTHER BARN.
- EACH WEANED PIG WILL WEIGH 13—15 POUNDS.
- PIGLETS ARE FED A CORN AND SOYBEAN MEAL DIET AND EAT 1.4—4 POUNDS PER DAY.
- PHASE LASTS UNTIL PIGS ARE SIX—EIGHT WEEKS OLD OR ABOUT 50 TO 60 POUNDS.



DESTINATION PORK

PHASES OF PIG LIFE CYCLE: GROWING/FINISHING

- PIGS ARE MOVED FROM NURSERY TO A FINISHING BARN. IF PIGS ARE IN WEAN-TO-FINISH BARN, THEY REMAIN.
- PIGS EAT ABOUT SIX—TEN POUNDS OF FEED PER DAY.
- DIET TYPICALLY CONSISTS OF CORN AND SOYBEAN MEAL, AS WELL AS VITAMINS AND MINERALS
- PIGS CONSIDERED “FINISHED” AT MARKET WEIGHT (ABOUT 280 POUNDS) AND ARE ABOUT SIX MONTHS OLD.



DESTINATION PORK

CAREER HIGHLIGHT

SOW FARM MANAGER

DESTINATION PORK

OBJECTIVE TWO

DISTINGUISH THE SIMILARITIES AND DIFFERENCES BETWEEN THE THREE COMMON TYPES OF SWINE PRODUCTION.

DESTINATION PORK

SWINE PRODUCTION: FARROW-TO-FINISH

- BREEDING AND FARROWING SOWS THEN FEEDING THE RESULTING PIGS TO MARKET WEIGHT OF ABOUT 280 POUNDS.
- PRODUCTION PERIOD TAKES ABOUT 10 MONTHS
  - (four months for breeding/gestation and six months to raise litter to market weight).
- THIS PRODUCTION DEMANDS THE MOST CAPITAL AND LABOR AND REQUIRES A LONG-TERM COMMITMENT.

DESTINATION PORK

SWINE PRODUCTION: FARROW-TO-FEEDER

- BREEDING AND FARROWING SOWS THEN SELLING THE RESULTING PIGS TO FINISHING OPERATIONS WHEN THEY WEIGH 30-60 POUNDS.
- THIS PRODUCTION DECREASES NEED FOR FACILITIES, OPERATING CAPITAL, AND AMOUNT OF FEED NEEDED.
- TO KEEP UP WITH THE FEEDER PIG MARKET, MANY PRODUCERS FARROW SOWS IN GROUPS TO INCREASE THE NUMBER OF PIGS AVAILABLE DURING PERIODS OF HIGH DEMAND.

DESTINATION PORK

SWINE PRODUCTION: GROW/FINISH

- GROW/FINISH PRODUCERS OFTEN BUY FEEDER PIGS WEIGHING 30-60 POUNDS AND FEED THEM TO MARKET WEIGHT (APPROXIMATELY 280 POUNDS).
- IMPORTANT FOR FARMERS TO CONSIDER THE SOURCE, HEALTH, AND QUALITY OF FEEDER PIGS PURCHASED.

DESTINATION PORK

SWINE PRODUCTION: GROW/FINISH

- IT IS COMMON FOR GROW/FINISH PIG FARMERS TO HAVE A CONTRACT WITH A LARGER PRODUCER (FARROW-FEEDER) TO RECEIVE A CONSISTENT SUPPLY OF FEEDER PIGS. THESE ARE CALLED *CONTRACT GROWERS.*
- A LARGE PORTION OF THE INDUSTRY OWNS THE PIGS THROUGH ALL PHASES OF PRODUCTION, HARVEST, AND INTO THE RETAIL MARKET. THIS IS KNOWN AS *VERTICALLY INTEGRATED.*

DESTINATION PORK

	Similarities		
Farrow-to-finish Farrow-to-feeder Grow/Finish	They all:		
	Differences		

DESTINATION PORK

TICKET OUT THE DOOR: THEN-NOW-FUTURE

- RESPOND TO THE FOLLOWING IN THE “NOW” COLUMN:
  - Summarize the life cycle and production cycle of pigs.
- RESPOND TO THE FOLLOWING IN THE “THEN” COLUMN:
  - How were the life and production cycles of pigs different 50 years ago?
- RESPOND TO THE FOLLOWING IN THE “FUTURE” COLUMN:
  - What do you predict will change about life and production cycles of pigs by 2050?

DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON FOUR

THE PEOPLE THAT TAKE CARE OF PIGS

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Identify the individuals responsible for caring for pigs on a daily basis and explain their duties.
- Identify the individuals indirectly involved with a pig's care and explain their duties.

DESTINATION PORK

KEY TERMS

- FEED RATION
- MANURE MANAGEMENT PLAN
- BIOSECURITY

DESTINATION PORK

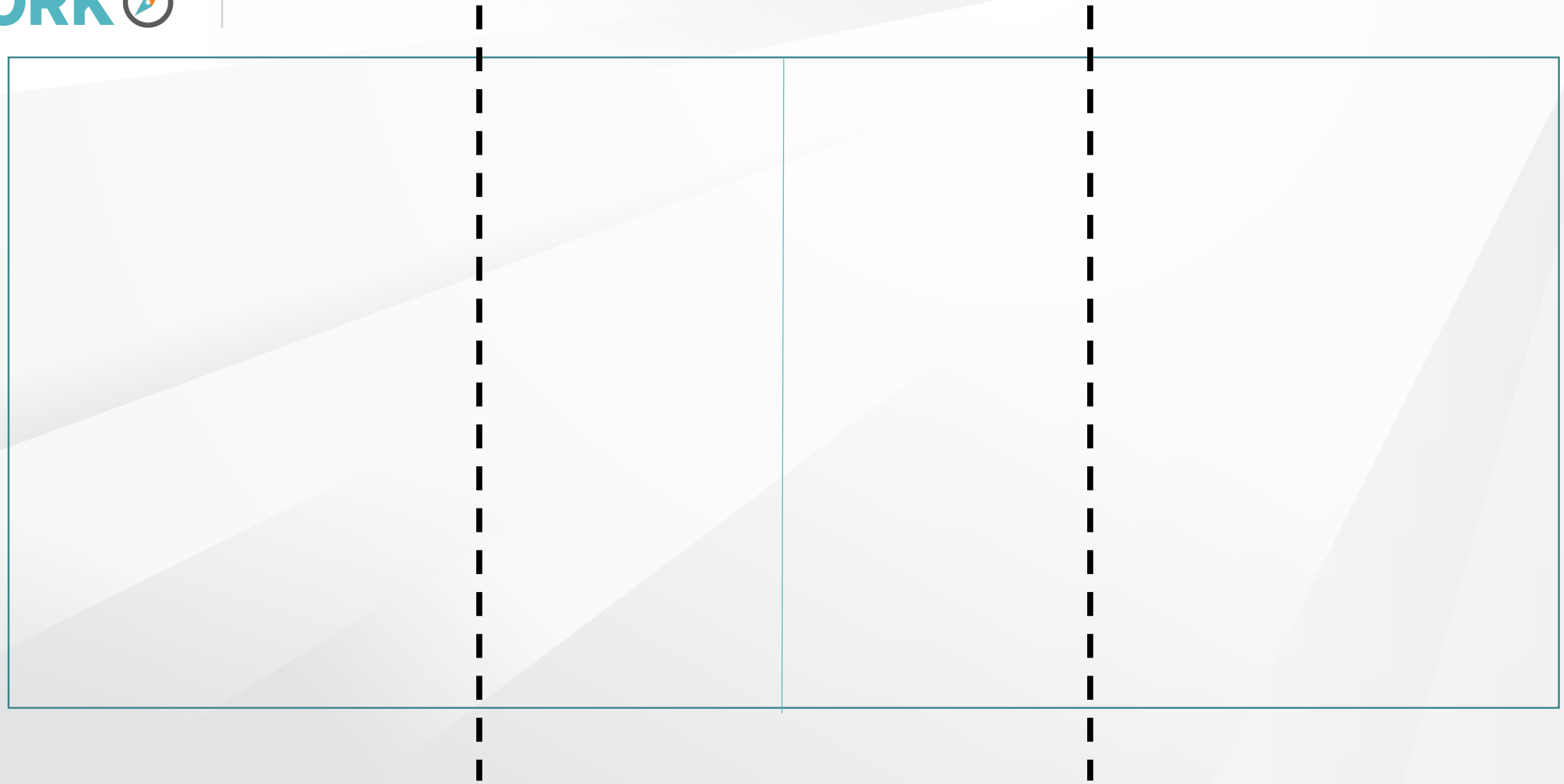
WHO CARES FOR US?

DESTINATION PORK

OBJECTIVE ONE

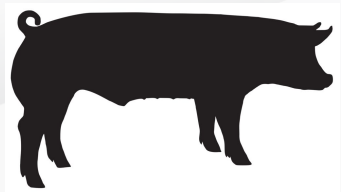
IDENTIFY THE INDIVIDUALS RESPONSIBLE FOR CARING FOR PIGS ON A DAILY BASIS AND EXPLAIN THEIR DUTIES.

DESTINATION PORK



DESTINATION PORK

PREDICTIONS



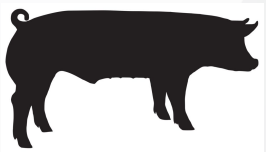
CONTENT

PREDICTIONS



CONTENT

PREDICTIONS



CONTENT

DESTINATION PORK

BREEDING AND FARROWING CARETAKER

- LABEL THE LEFT COLUMN “BREEDING AND FARROWING CARETAKER”
- WITH A PARTNER, WRITE A LIST OF WHAT YOU PREDICT A BREEDING AND FARROWING CARETAKER DOES IN THE AREA ABOVE THE SOW IN THE LEFT COLUMN

DESTINATION PORK

BREEDING AND FARROWING CARETAKER

- CARE FOR GILTS AND SOWS THROUGHOUT THE PROCESS OF ARTIFICIAL INSEMINATION (AI) OR NATURAL BREEDING, AND GESTATION (PREGNANCY)
- OVERALL CARE OF PREGNANT AND FARROWING SOWS AND THEIR PIGLETS
- CARE AND MANAGEMENT OF BOARS
- SOW AND PIGLET FEEDING AND NUTRITION PROGRAM

DESTINATION PORK

NURSERY CARETAKER

- LABEL THE MIDDLE COLUMN “NURSERY CARETAKER”
- WITH A PARTNER, WRITE A LIST OF WHAT YOU PREDICT A NURSERY CARETAKER DOES IN THE AREA ABOVE THE SOW IN THE LEFT COLUMN

NURSERY CARETAKER

- RECEIVE, SORT, AND CARE FOR WEANED PIGLETS
  - Assist weaned pigs to solid feed as they transition away from the sow's milk as a primary source of nutrition
- MAINTAIN A HEALTHY AND SAFE ANIMAL ENVIRONMENT
- ANIMAL FEEDING AND NUTRITION MANAGEMENT

GROWER/FINISHER CARETAKER

- LABEL THE RIGHT COLUMN “GROWER/FINISHER CARETAKER”
- WITH A PARTNER, WRITE A LIST OF WHAT YOU PREDICT A GROWER/FINISHER CARETAKER DOES IN THE AREA ABOVE THE SOW IN THE LEFT COLUMN

DESTINATION PORK

GROWER/FINISHER CARETAKER

- RECEIVE, SORT, AND CARE FOR PIGS
  - Identify pigs that have reached approximate market weight
- MAINTAIN A HEALTHY AND SAFE ENVIRONMENT
- ANIMAL FEEDING AND NUTRITION MANAGEMENT

DESTINATION PORK

OBJECTIVE TWO

IDENTIFY THE INDIVIDUALS INDIRECTLY INVOLVED WITH A PIG'S CARE AND EXPLAIN THEIR DUTIES.

DESTINATION PORK

CAREER EXPERTS

- YOU ARE NOW AN EXPERT IN THE CAREER YOUR GROUP WAS JUST ASSIGNED.
- PLAN A CREATIVE WAY TO TEACH THE INFORMATION ON YOUR HANDOUT TO YOUR CLASSMATES.
- EXAMPLES MAY INCLUDE A SONG, SKIT, DRAWING OR DIAGRAM, OR WHATEVER YOU SEE BEST FIT.
- YOU WILL HAVE TWO MINUTES TO PRESENT.

DESTINATION PORK

NUTRITIONIST

- RESEARCH AND FORMULATE SWINE DIETS AND RATIONS (FOR ANIMAL GROWTH, HEALTH, REPRODUCTION, AND MEAT QUALITY)
- MAKE SURE NUTRITION LEVELS MEET THE PIGS' DIETARY NEEDS
- ENGAGE IN RESEARCH AND DEVELOP NEW PRODUCTS, PROCESSES, AND TECHNOLOGIES
- EVALUATE THE NUTRITIONAL AND ECONOMICAL VALUE OF FEEDS, FEED SUPPLEMENTS, AND VARYING FEED RATIONS/FORMULAS

DESTINATION PORK

NUTRITIONIST

- WORK WITH FEED PRODUCTION DEPARTMENT TO MAKE SURE FEED RATIONS AND SWINE DIETS ARE CORRECTLY PROCESSED AND DELIVERED
- STAY INFORMED AND UNDERSTAND ALL PARTS OF PORK PRODUCTION AND ANIMAL NUTRITION INDUSTRIES
- COMMUNICATE SWINE INFORMATION AND DIETARY INFORMATION

DESTINATION PORK

DATA ANALYST

- ORGANIZE AND COMPILE DATA USING COMMON DATABASES
  - Examples of data collected may include pigs per sow per year, feed conversion ratio, number of pigs weaned per litter
- CONDUCT QUALITY CONTROL MEASURES TO ENSURE DATA INTEGRITY
  - Example: review the data set to identify outliers
- EMPLOY DATA ANALYTIC SOFTWARE TO ANALYZE DATA FOR OUTCOMES AND TRENDS

DESTINATION PORK

DATA ANALYST

- WRITE PROGRAMS TO QUERY DATABASES IN ORDER TO ANSWER QUESTIONS ABOUT PRODUCTION
- DEVELOP GRAPHICS TO BETTER VISUALIZE AND INTERPRET RESULTS
- USE DATA TO CONSTRUCT COMPUTER ALGORITHMS THAT ASSIST IN MAKING MANAGEMENT DECISIONS

DESTINATION PORK

ENVIRONMENTAL MANAGER

- MANAGE MANURE AND ITS NUTRIENT LEVEL TO KEEP A HEALTHY ENVIRONMENT FOR PIGS AND HUMANS
- OVERSEE AND COORDINATE NUTRIENTS AND MANURE MANAGEMENT PLANS FOR ALL FARMS
- SUPERVISE LAND MANAGEMENT, INCLUDING SOIL TESTING AND MAPPING
- STAY INFORMED OF NEW AND UPCOMING REGULATORY CHANGES AND MAKE SURE FARMS COMPLY

DESTINATION PORK

VETERINARIAN

- DIAGNOSE AND TREAT ANIMALS AFTER EXAMINATION AND TESTING
- RECOMMEND AND IMPLEMENT VACCINATIONS
- ADVISE ON BIOSECURITY, NUTRITION, DISEASE PREVENTION, AND GENERAL CARE PRACTICES
- COMMUNICATE ANIMAL HEALTH INFORMATION
- RESPOND TO EMERGENCY SITUATIONS WHEN NEEDED

DESTINATION PORK

OTHER CAREERS IN THE PORK INDUSTRY

- ACCOUNTANT
- CONSTRUCTION MANAGER
- FARM MAINTENANCE MANAGER
- FEED MILL TECHNICIAN
- GENETICIST
- LOGISTICS DIRECTOR
- TRUCK DRIVER

DESTINATION PORK

WHICH CARETAKERS ARE NEEDED? – SCENARIO 1

A GROWER/FINISHER CARETAKER NOTICES THE PIGS ARE NOT PUTTING ON WEIGHT AS EFFICIENTLY AS THEY SHOULD. WHO SHOULD THE CARETAKER CALL?

DESTINATION PORK

WHICH CARETAKERS ARE NEEDED? – SCENARIO 2

A BREEDING/FARROWING CARETAKER IS INTERESTED IN POSSIBLY EXPANDING HIS OPERATION TO RAISE MORE PIGS. WHO SHOULD THE CARETAKER CONSULT WITH?

DESTINATION PORK

WHICH CARETAKERS ARE NEEDED? – SCENARIO 3

A DIRECT CARETAKER (ANY OF THE THREE DIRECT CARETAKERS) WANTS TO INCREASE HIS/HER BIOSECURITY MEASURES. WHO SHOULD THE CARETAKER CALL?

DESTINATION PORK

CAREER HIGHLIGHT – BONUS SWINE NUTRITIONIST

TICKET OUT THE DOOR: THEN-NOW-FUTURE

- RESPOND TO THE FOLLOWING IN THE “THEN” COLUMN:
  - Thinking back on the careers we explored today and their many roles, what is done the same as it was 50 years ago? What is done differently and what are the reasons?
- RESPOND TO THE FOLLOWING IN THE “FUTURE” COLUMN:
  - What might these same careers look like 50 years from now?

DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON FIVE

WHY PIGS DO WHAT THEY DO

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Discover why pigs behave the way they do.
- Explain how pigs interact with each other and humans.

DESTINATION PORK

KEY TERMS

- BEHAVIOR
- DOMESTICATED
- WALLOWING
- BLIND SPOT
- FLIGHT ZONE

DESTINATION PORK

OBJECTIVE ONE

DISCOVER WHY PIGS BEHAVE THE WAY THEY DO.

DESTINATION PORK

BEHAVIOR

THE WAY AN ANIMAL ACTS IN RESPONSE TO WHO OR WHAT IS AROUND IT.

DESTINATION PORK

WHAT WE KNOW ABOUT PIGS & THE WAY THEY ACT:

- THEY ARE CURIOUS
- THEY NATURALLY WANT TO EXPLORE
- THEY WILL USUALLY FOLLOW EACH OTHER
- THEY OFTEN SCARE EASILY BY LOUD NOISES, SLIPPERY FLOORS, BRIGHT LIGHTS, DARKNESS, OR MOVING THINGS SUCH AS FLAPPING ITEMS OR OTHER ANIMALS

DESTINATION PORK

PIGS' INSTINCTIVE BEHAVIOR IS INFLUENCED BY:

- AGE
- GENDER
- HEALTH STATUS
- ENVIRONMENT
- PRIOR EXPERIENCES

DESTINATION PORK

KEY FACTS ABOUT PIGS' BEHAVIOR

- PIGS RETAIN INSTINCTS FROM THEIR ANCIENT ANCESTORS (CURIOSITY).
- BEFORE PIGS WERE DOMESTICATED, THEY WERE PREY ANIMALS AND WERE ALWAYS ON THE LOOKOUT FOR HUNGRY PREDATORS. PIGS LEARNED TO BE CAUTIOUS OF STRANGE OBJECTS AND LOCATIONS AS THESE NEW THINGS COULD HIDE THREATS.
- UNDERSTANDING THESE INSTINCTS CAN HELP HANDLERS WORK WITH PIGS MORE EFFECTIVELY.
- A PIG'S FIRST RESPONSE TO SOMETHING NEW AND POTENTIALLY THREATENING IS DEMONSTRATED BY STOPPING AND ASSESSING THE SITUATION BEFORE THEY MOVE ALONG.

DESTINATION PORK

PIGS AND THEIR SIGHT

- PIGS HAVE EYES ON THE SIDES OF THEIR HEADS WHICH ALLOWS FOR A WIDE FIELD OF VISION TO SEARCH FOR DANGER.
- PIGS CAN KEEP A WATCHFUL EYE ON SURROUNDINGS WITHOUT TURNING THEIR HEADS.
- A PIG CAN SEE 310 DEGREES AROUND ITS BODY; EVERYWHERE EXCEPT THE BLIND SPOT BEHIND THEIR TAIL.

DESTINATION PORK

PIGS AND THEIR SMELL

- PIGS HAVE A VERY SENSITIVE SENSE OF SMELL.
- SOWS IDENTIFY THEIR PIGLETS THROUGH SMELL AND PIGLETS IDENTIFY THE SOW AND TEATS THROUGH OLFACTORY CUES.
- PIGS CAN RECOGNIZE FAMILIAR AND UNFAMILIAR PIGS.

DESTINATION PORK

PIGS AND THEIR HEARING

- PIGS USE AUDIO CUES TO COMMUNICATE WITH EACH OTHER.
- SOWS CALL PIGLETS USING A SERIES OF GRUNTS VARYING IN FREQUENCY, TONE, AND MAGNITUDE

PIGS AND THEIR TOUCH/REST

- PIGS SPEND A MAJORITY OF THEIR TIME RESTING. ON AVERAGE, GROW-FINISH PIGS SPEND 75-85 PERCENT OF THEIR TIME LYING DOWN.
- PIGS WILL WALLOW, WHICH IS A NATURAL BEHAVIOR PIGS USE TO COOL OFF.

DESTINATION PORK

PIGS AND THEIR TASTE/EATING AND DRINKING

- PIGS CAN DISTINGUISH BETWEEN SWEET, SOUR, SALTY, AND BITTER TASTES
- PIGS PREFER SWEET TO SOUR AND REJECT BITTER FOODS.
- ON AVERAGE, PIGS EAT 10-25 MEALS PER DAY WITH YOUNGER PIGS HAVING MORE MEALS THAN OLDER PIGS.
- EATING BEHAVIOR CAN BE SOCIALLY FACILITATED.

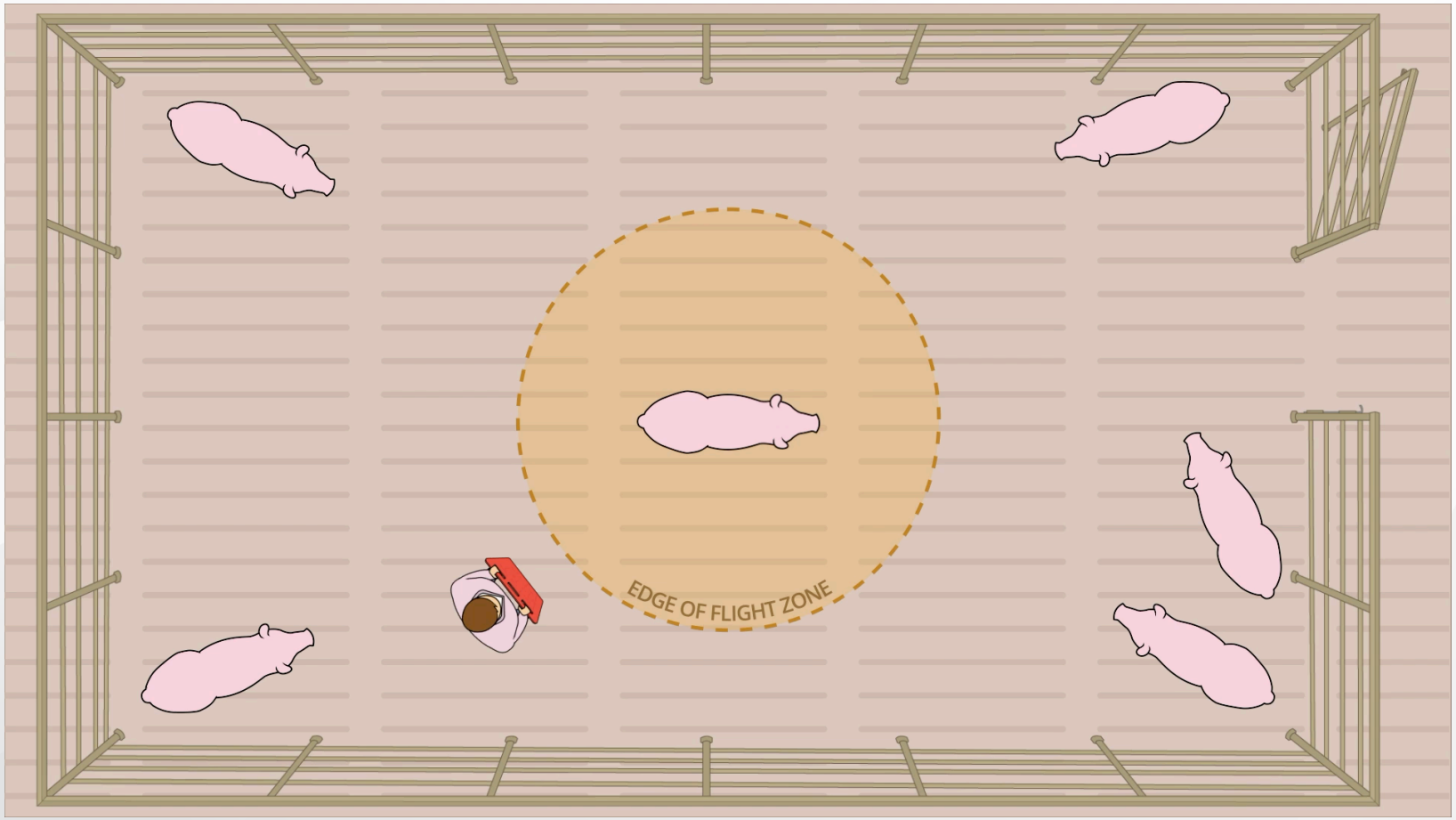
DESTINATION PORK

OBJECTIVE TWO

EXPLAIN HOW PIGS INTERACT WITH EACH OTHER AND HUMANS.

DESTINATION PORK

BLIND SPOT



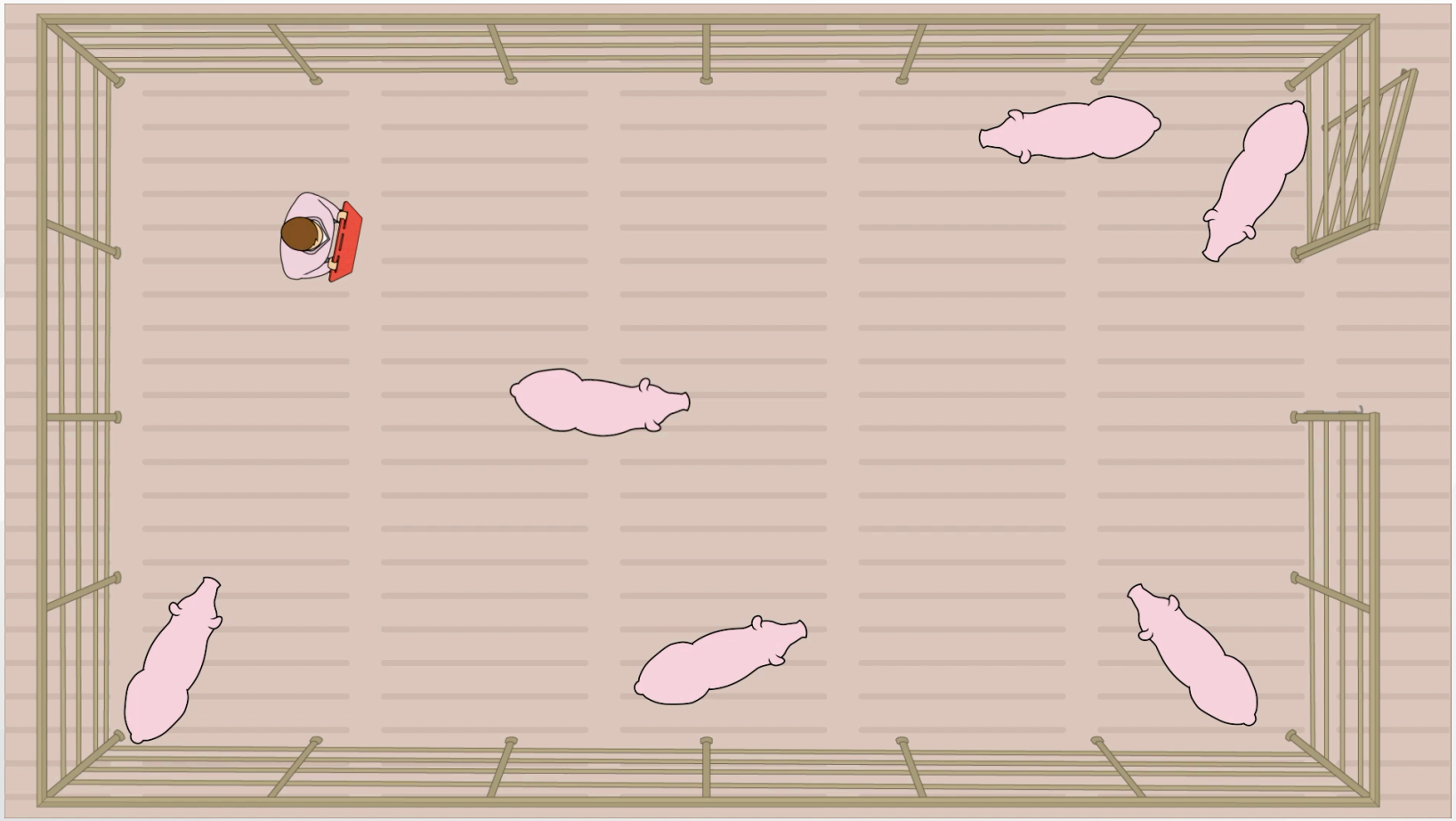
DESTINATION PORK

FLIGHT ZONE

- AN ANIMAL'S FLIGHT ZONE IS ITS OWN INDIVIDUAL SPACE
- IF CARETAKERS UNDERSTAND WHERE THE ANIMALS FLIGHT ZONE IS, HE OR SHE CAN USE IT TO MOVE THE ANIMAL WHERE DESIRED
- BY MOVING INTO THE ANIMAL'S FLIGHT ZONE, IT CAUSES THE ANIMAL TO MOVE
- BY MOVING OUT OF THE ANIMAL'S FLIGHT ZONE, THE ANIMAL STOPS MOVING
- THE MORE A PIG IS AROUND PEOPLE AND BUILD POSITIVE EXPERIENCES, THE SMALLER THEIR FLIGHT ZONE BECOMES

DESTINATION PORK

FLIGHT ZONE



DESTINATION PORK

CAREER HIGHLIGHT

SWINE MANAGER

DESTINATION PORK

TICKET OUT THE DOOR: THEN-NOW-FUTURE

- RESPOND TO THE FOLLOWING IN THE “THEN” COLUMN:
  - What pig behaviors are retained from their ancestors?

- RESPOND TO THE FOLLOWING IN THE “NOW” COLUMN:
  - What is one of the most important things people do now to influence pig behavior and why?

DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON SIX

HOW DO WE GET BETTER PIGS?

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Explain the primary breeds of pigs and where/how they developed.
- Identify the characteristics that are considered to breed for improved pigs.
- Analyze how advances in breeding and genetics have impacted the pork industry.
- Explain the career of a reproduction technical support specialist.

DESTINATION PORK

KEY TERMS

- REBREEDING INTERVAL
- TERMINAL CROSSBREEDING PROGRAM
- FEED EFFICIENCY
- TERMINAL/PATERNAL SIRE
- MARBLED
- RATE OF GAIN
- BREEDING SYSTEMS
- PUREBRED BREEDING
- CROSS-BREEDING
- HETEROSIS (HYBRID VIGOR)
- GENETICS
- TRAIT
- GENE
- GENOTYPE
- PHENOTYPE
- DOMINANT
- RECESSIVE
- HEREDITARY
- EXPECTED PROGENY DIFFERENCE (EPD)

DESTINATION PORK

OBJECTIVE ONE

EXPLAIN THE PRIMARY BREEDS OF PIGS AND WHERE/HOW THEY DEVELOPED.

DESTINATION PORK

WHY DO YOU THINK FARMERS WANT STRONG AND HEALTHY ANIMALS?

DESTINATION PORK

“BETTER” AS IT RELATES TO THE PORK INDUSTRY

IMPROVING A SPECIFIC TRAIT BASED ON PRODUCTION GOALS

DESTINATION PORK

BREED RESEARCH

- USE THE NEXT 15 MINUTES TO RESEARCH YOUR ASSIGNED BREED AS A GROUP
- DEVELOP A TWO-THREE-MINUTE PRESENTATION ON POSTER BOARD OR IN POWERPOINT WITH THE FOLLOWING INFORMATION:
  - History of the breed
  - Characteristics
  - What they are known for, etc.
  - Clever way to help your classmates remember the breed (song, dance, rhyme, poem, jingle, etc.)

DESTINATION PORK

YORKSHIRE

- WHITE WITH ERECT/UPRIGHT EARS
- ORIGINATED IN ENGLAND
- KNOWN AS “THE MOTHER BREED”
- EXCEL IN LITTER SIZE, BIRTH, AND WEANING WEIGHT, REBREEDING INTERVAL, DURABILITY, AND LONGEVITY



Source: National Swine Registry

DESTINATION PORK

YORKSHIRE

- BOARS AND FEMALES USED AS GRANDPARENTS FOR PRODUCTION OF FEMALES USED IN TERMINAL CROSSBREEDING PROGRAM
- HIGH PROPORTION OF LEAN MEAT AND LOW BACKFAT



Source: National Swine Registry

DUROC

- RED WITH DROOPING EARS
- RANGE FROM VERY LIGHT GOLDEN (ALMOST YELLOW COLOR) TO VERY DARK RED
- DEVELOPED FROM CROSSING RED DUROCS IN NEW YORK CITY WITH JERSEY REDS FROM NEW JERSEY



Source: National Swine Registry

DUROC

- MARKET PIGS EXCEL IN DURABILITY, GROWTH, AND MUSCLE QUALITY ATTRIBUTES
- COMPETITIVE FOR CARCASS LEANNESS AND FEED EFFICIENCY
- DUROC SIRES MOST OFTEN USED AS TERMINAL/PATERNAL SIRE IN TERMINAL CROSSBREEDING PROGRAM



Source: National Swine Registry

HAMPSHIRE

- BLACK WITH A WHITE BELT ACROSS THE SHOULDERS AND AROUND THE BODY; ALSO COVERS FRONT LEGS
- ERECT EARS
- ORIGINATED IN SOUTHERN SCOTLAND AND NORTHERN ENGLAND
- LEAN MUSCLE WITH GOOD CARCASS QUALITY, MINIMAL AMOUNT OF BACKFAT AND LARGE LOIN EYES



Source: National Swine Registry

DESTINATION PORK

HAMPSHIRE

- SOWS KNOWN AS GREAT MOTHERS
- PROVEN RECORD OF INCREASED DURABILITY AND ROBUSTNESS
- CONTRIBUTE TO SUPERIOR CARCASS COMPOSITION OF THE COMMERCIAL MARKET HOG.



Source: National Swine Registry

LANDRACE

- WHITE IN COLOR
- LARGE EARS WHICH DROOP AND SLANT FORWARD
- ORIGINATED FROM DANISH LANDRACE IN DENMARK
- CROSSES WELL WITH OTHER BREEDS



Source: National Swine Registry

LANDRACE

- EXCEL IN LITTER SIZE, BIRTH AND WEANING WEIGHT, REBREEDING INTERVAL, DURABILITY AND LONGEVITY
- USED AS GRANDPARENTS IN PRODUCTION OF PARENT STOCK; FEMALES USED IN TERMINAL CROSSBREEDING PROGRAM
- LONG-BODIED, HIGH PERCENTAGE OF CARCASS WEIGHT IN HAM/LOIN



Source: National Swine Registry

DESTINATION PORK

BERKSHIRE

- BLACK BODY WITH SIX WHITE POINTS (TIP OF TAIL, NOSE AND FOUR LEGS)
- ERECT EARS
- ORIGINATED IN ENGLAND



Source: American Berkshire Association

DESTINATION PORK

BERKSHIRE

- KNOWN FOR PRODUCING A WHOLE CARCASS THAT IS WELL ***MARBLED***
- PORK IS CONSISTENTLY SWEET, TENDER, AND PALATABLE
- RECORDS SHOW THAT THE BERKSHIRE BLOODSTREAM HAS BEEN PURE FOR 200 YEARS



Source: American Berkshire Association

SPOTTED

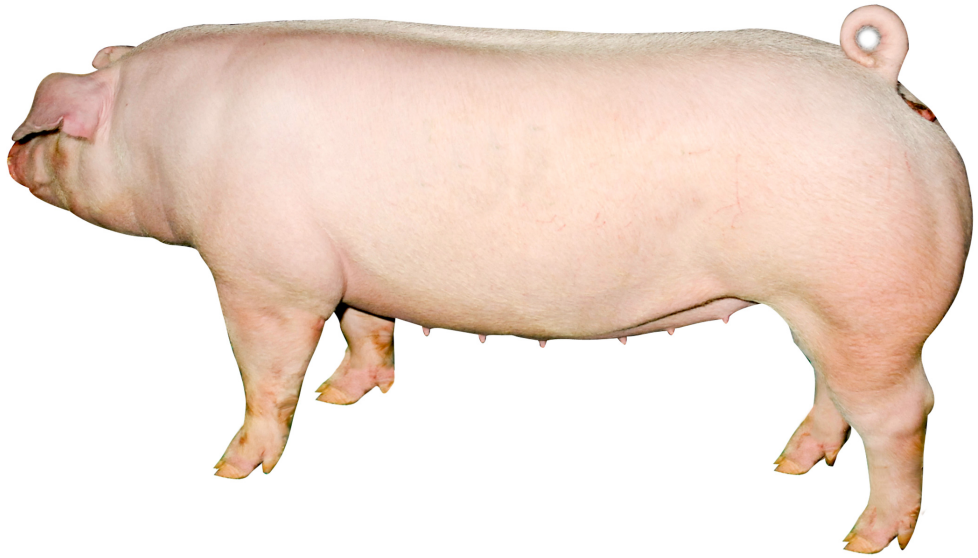
- LARGE BLACK AND WHITE SPOTS
- DROOPING EARS
- PARTS OF ANCESTRY TRACED TO POLAND CHINA – BREED ORIGINATED IN INDIANA
- CONTINUE TO IMPROVE FEED EFFICIENCY, ***RATE OF GAIN***, AND CARCASS QUALITY
- ABILITY TO TRANSMIT FAST-GAINING, FEED-EFFICIENT MEAT QUALITIES TO OFFSPRING



Source: Team Purebred

CHESTER WHITE

- WHITE
- DROOPY, MEDIUM-SIZED EARS
- ORIGINATED IN CHESTER COUNTY, PENNSYLVANIA
- EXCEL IN MOTHERING ABILITY, DURABILITY, AND SOUNDNESS
- PACKERS PREFER MUSCLE QUALITY OF CHESTER WHITE



Source: Team Purebred

POLAND CHINA

- BLACK WITH SIX WHITE POINTS
- DROOPING EARS
- ORIGINATED IN OHIO
- BIG-FRAMED, LONG-BODIED, LEAN, AND MUSCULAR
- EXCELLENT FEEDERS
- QUIET DISPOSITION



Source: Team Purebred

DESTINATION PORK

OBJECTIVE TWO

IDENTIFY CHARACTERISTICS THAT ARE CONSIDERED TO BREED FOR IMPROVED PIGS.

DESTINATION PORK

BREEDING SYSTEMS

- THESE **EIGHT** BREEDS AND ALL OTHER PIG BREEDS EMERGED BECAUSE THERE WAS A NEED FOR **BETTER** (OR MORE **IMPROVED)** PIGS.
- IMPROVEMENT OF PIGS IS BASED ON THE **OUTCOMES** WE **NEED/WANT**. IMPROVING A **SPECIFIC TRAIT** IS BASED ON **PRODUCTION GOALS**. EXAMPLES INCLUDE:
  - Pork quality (marbling, color, leanness)
  - Better mothering abilities
  - Faster and more efficient growth

DESTINATION PORK

BREEDING SYSTEMS

- THERE ARE **SYSTEMS OF BREEDING** THAT HELP PIG FARMERS GET **IMPROVED TRAITS** IN PIGS PRODUCED.
- **BREEDING SYSTEMS** (AKA, **MATING SYSTEMS**): BREEDING OR MATING SYSTEMS ARE THE APPROACH TAKEN TO PAIRING A **BOAR** AND A **GILT** OR **SOW** FOR BREEDING IN ORDER TO INCORPORATE OR MAINTAIN **DESIRED TRAITS**. BECAUSE THE **GENETICS** OF A PIG PLAYS AN IMPORTANT ROLE IN ITS **PERFORMANCE** AND **MEAT QUALITY**, ALL **PIG PRODUCERS** SHOULD BE FAMILIAR WITH BREEDING SYSTEMS FOR PIGS.

DESTINATION PORK

PUREBRED BREEDING

- MATING TWO ANIMALS OF THE **SAME BREED** IN WHICH A CERTAIN NUMBER OF **GENETIC LINES** ARE AVAILABLE
- THIS RESULTS IN **PUREBREDS** OF A SPECIFIC BREED **(YORKSHIRE, HAMPSHIRE, ETC.)**
- REASONS SOMEONE WOULD CHOOSE PUREBRED BREEDING:
  - To capitalize on heterosis
  - For seedstock production
  - To take advantage of breed characteristics
    - Example: Berkshires are known for superior meat quality

CROSSBREEDING

- MATING ANIMALS OF **DIFFERENT BREEDS**
- CROSSBREEDING ANIMALS WITH **DESIRED TRAITS** IS AN ATTEMPT TO MAXIMIZE **HETEROSIS**, THE ABILITY OF THE OFFSPRING TO **OUTPERFORM THEIR PARENTS**
- RESULTS IN **IMPROVED PERFORMANCE**, **GROWTH**, AND/OR **CARCASS TRAITS**.



Source: National Swine Registry

DESTINATION PORK

CROSSBREEDING

REASONS SOMEONE WOULD CHOOSE CROSSBREEDING:

- **UTILIZE BEST PIG BREEDS**
- **TAKE FULL ADVANTAGE OF STRENGTHS OF DIFFERENT BREEDS**
- **IMPROVE GENETICS AND HEALTH**
- **MOST OFTEN USED IN MARKET**



Source: National Swine Registry

REPRODUCTION TECHNICAL SUPPORT SPECIALIST

DESTINATION PORK

TICKET OUT THE DOOR: THEN-NOW-FUTURE

- RESPOND TO THE FOLLOWING IN THE “NOW” COLUMN:
  - Capture key facts about the different breeds, breeding systems, and genetics.

- RESPOND TO THE FOLLOWING IN THE “FUTURE” COLUMN:
  - Breeds and breeding systems have been continuously changing. How do you think they will change in the next 50 years?

DESTINATION PORK

DAY TWO

DESTINATION PORK

PIGS PAST AND PRESENT



1953



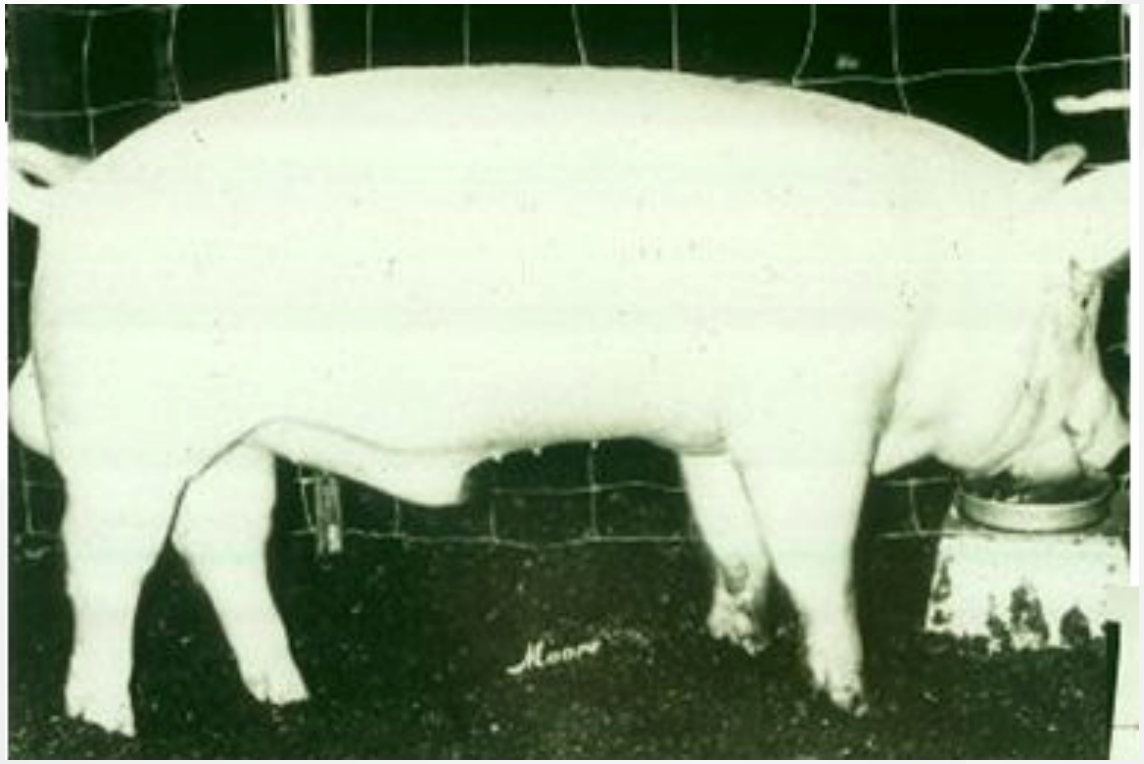
1965

DESTINATION PORK

PIGS PAST AND PRESENT



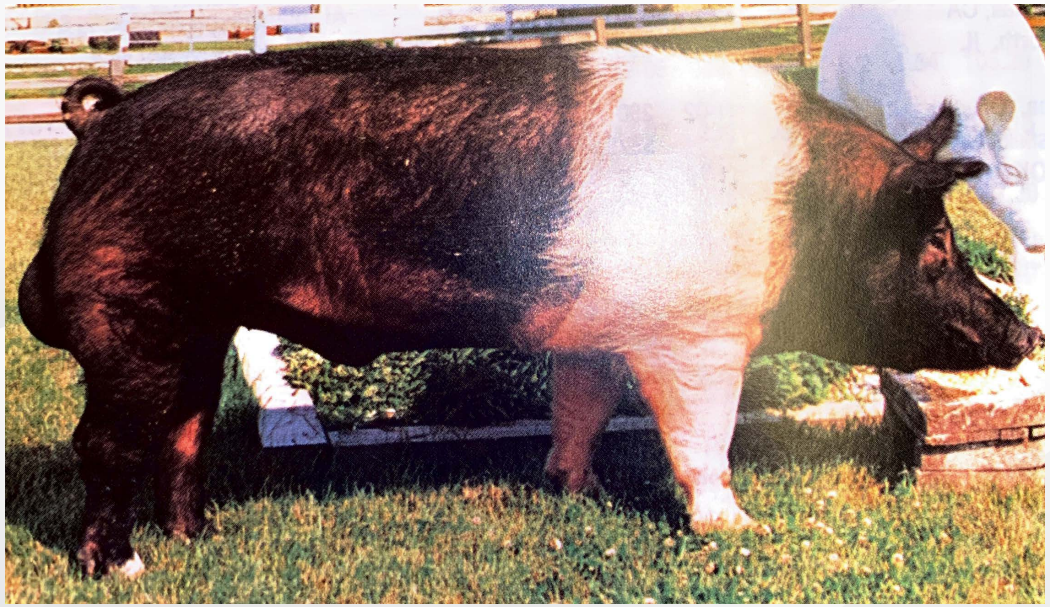
1973



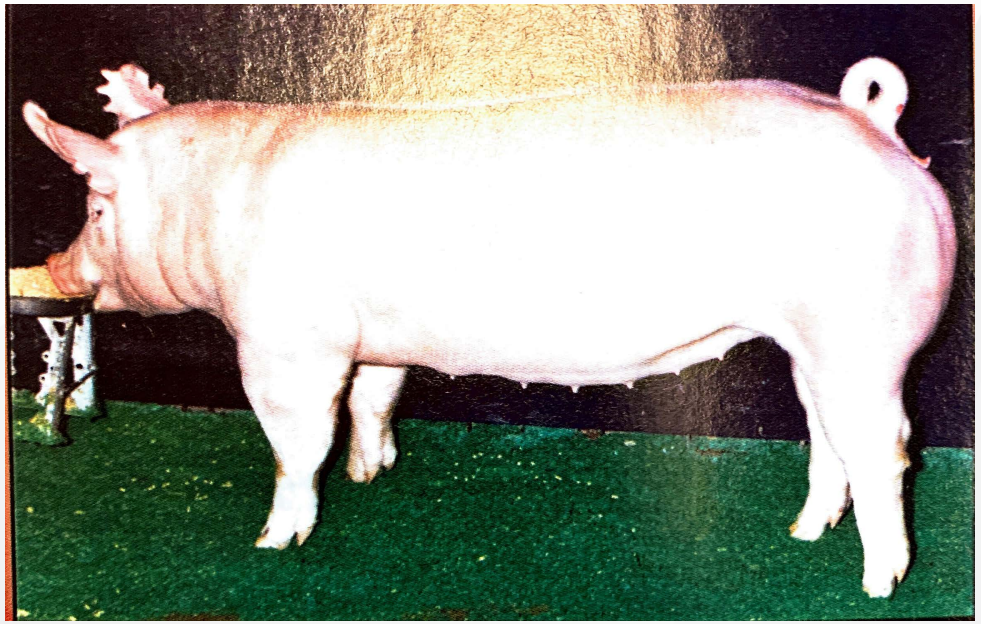
1983

DESTINATION PORK

PIGS PAST AND PRESENT



1995



2005

Source: National Swine Registry

DESTINATION PORK

PIGS PAST AND PRESENT





TODAY

Source: National Swine Registry

DESTINATION PORK

OBJECTIVE THREE

ANALYZE HOW ADVANCES IN BREEDING AND GENETICS HAVE IMPACTED THE PORK INDUSTRY.

DESTINATION PORK

BREEDING SYSTEMS AND GENETICS

- **BREEDS** AND **BREEDING SYSTEMS** ARE HOW PRODUCERS GET IMPROVEMENT IN PIGS.
- ADVANCES IN **BREEDING** GOES HAND-IN-HAND WITH **GENETICS**.
- THIS IMPACTS THE **PORK INDUSTRY**.

DESTINATION PORK

GENETICS DEFINITIONS

- ***GENETICS***: SCIENCE OF THE STUDY OF RESEMBLANCES AND DIFFERENCES THAT EXIST AMONG INDIVIDUALS
- ***TRAIT***: CHARACTERISTICS EXPRESSED BY GENES AND/OR INFLUENCED BY ENVIRONMENT; INCLUDE PHYSICAL AND BEHAVIORAL
- ***GENE***: PART OF DNA THAT CARRY HEREDITARY INFORMATION PASSED FROM PARENTS TO OFFSPRING

DESTINATION PORK

GENETICS DEFINITIONS

- ***GENOTYPE***: INTERNAL HEREDITARY INFORMATION THAT CONTAINS GENETIC CODE
- ***PHENOTYPE***: OUTWARDLY-EXPRESSED TRAITS OR CHARACTERISTICS

DESTINATION PORK

GENETICS DEFINITIONS

- ***DOMINANT***: WHEN A SPECIFIC TRAIT IS SHOWN EVEN IF ONLY ONE PARENT PASS THE GENE TO OFFSPRING
- ***RECESSIVE***: WHEN A SPECIFIC TRAIT IS SHOWN ONLY WHEN BOTH PARENTS PASS THE GENE TO OFFSPRING
- ***HEREDITARY***: PASSED OR CAPABLE OF BEING PASSED FROM PARENT TO OFFSPRING BY MEANS OF GENES

DESTINATION PORK

GENETICS

- GENETICS INVOLVES **GENOTYPE** AND **PHENOTYPE**.
- A GENOTYPE IS THE **GENETIC CODE** FOR THE PHENOTYPE **(WHAT IS SEEN).**
  - Example: floppy ears vs. erect ears
- **GENES** CAN BE **DOMINANT** OR **RECESSIVE**.
  - Example: Breeding a pig with floppy ears to a pig with erect ears results in offspring with floppy ears because the gene for floppy ears is dominant and the gene is erect ears is recessive.

DESTINATION PORK

PIGS AND GENETICS

- COMPLETE THE FOLLOWING:
  - Read your statement (will also be read out loud when shared with class).
  - Analyze how genetics is a part of the statement.
  - Write a scenario that goes along with the statement with specific examples of a farmer and his decision-making process in getting “better” (stronger and healthier) pigs.

DESTINATION PORK

PIGS AND GENETICS – GROUP 1

AS PIGS HAVE CHANGED AND EVOLVED OVER THE YEARS, PIG FARMERS USE BREEDING SYSTEMS (MATING SYSTEMS) TO SPECIFICALLY IMPROVE CHARACTERISTICS (MANY OF WHICH WE VISUALLY SEE) INCLUDING A PIG'S ABILITY TO EFFICIENTLY CONVERT FEED TO MUSCLE.

DESTINATION PORK

PIGS AND GENETICS – GROUP 2

FEED EFFICIENCY – FUTURE INCREASED PRODUCTIVITY OF PIGS IS LINKED TO EFFICIENCY, WHICH MEANS PIG FARMERS NEED PIGS WITH THE BUILT-IN ABILITY TO CONVERT FEED INTO MUSCLE EVEN MORE EFFICIENTLY AND GROW FASTER AT THE SAME TIME.

DESTINATION PORK

PIGS AND GENETICS – GROUP 3

PIG FARMERS WHO THOROUGHLY UNDERSTAND GENETICS AND UTILIZE IMPROVED GENETIC EVALUATION TECHNIQUES WILL BE ABLE TO IMPROVE PRODUCTION EFFICIENCY AND LOWER THEIR PRODUCTION COSTS. THIS ALLOWS THEM TO STAY COMPETITIVE IN TODAY'S CHANGING PORK INDUSTRY.

DESTINATION PORK

EXPECTED PROGENY DIFFERENCE (EPD)

- A TOOL USED TO HELP PIG FARMERS IDENTIFY GENETIC TRAITS TO IMPROVE THEIR HERD IS **EXPECTED PROGENY DIFFERENCE (EPD)**
- EPD DEFINITION: **HOW THE ANIMAL'S OFFSPRING WILL PERFORM COMPARED TO THE OFFSPRING OF ANOTHER BOAR (SIRE) OR SOW (DAM) WITHIN THE SAME BREED**
- USING EPD, PRODUCERS CAN SELECT **BOARS (SIRES)** AND **SOWS (DAMS)** THAT WILL PRODUCE PIGS WITH THE PRODUCTION **TRAITS/CHARACTERISTICS** DESIRED TO MAKE IMPROVEMENTS TO THE **NEXT GENERATION**.

DESTINATION PORK

EXPECTED PROGENY DIFFERENCE (EPD)

- AREAS THAT EPD INCLUDE ARE: **BACKFAT, NUMBER BORN ALIVE, LITTER WEIGHT, AND FEED CONVERSION**
- EPD IS A GOOD MEASUREMENT OF **GENETIC VALUE** BECAUSE IT IS ADJUSTED FOR THE DIFFERENT AMOUNTS OF INFORMATION AVAILABLE FOR EACH ANIMAL **(NUMBER OF RECORDS, PROGENY, HERITABILITY, ETC.)**

EXPECTED PROGENY DIFFERENCE (EPD)

EPD EXAMPLE:

- EPD LITTER WEANING WEIGHT – SOW A: **+3.2 POUNDS**. SOW B: **0 POUNDS**.
- THIS MEANS **SOW A'S** DAUGHTERS WOULD LIKELY HAVE LITTER WEIGHTS THAT WERE **3.2 POUNDS HEAVIER** AT 21 DAYS THAN **SOW B** (WHEN BRED TO THE SAME BOAR).

DESTINATION PORK

EXPECTED PROGENY DIFFERENCE – EXAMPLE 1

Boar A	0.8 pounds
Boar B	0.3 pounds
Boar C	0.1 pounds

DESTINATION PORK

EXPECTED PROGENY DIFFERENCE – EXAMPLE 2

Sow A	0.0 pounds
Sow B	0.3 pounds
Sow C	0.6 pounds

DESTINATION PORK

TICKET OUT THE DOOR: THEN-NOW-FUTURE

- RESPOND TO THE FOLLOWING IN THE “THEN” COLUMN:
  - Reflecting back on the photos from the interest approach and to pictures of pigs seen throughout the last two days, how have pigs changed in the last 50 years?

- RESPOND TO THE FOLLOWING IN THE “FUTURE” COLUMN:
  - Knowing pig farmers will play a greater role in feeding more people with less resources (land, water, and energy), what role will genetics play in pork production in the next 50 years? Why? What could that look like?

DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON SEVEN

THE PLANET

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Investigate and explain how the pork industry operates sustainably to safeguard the environment.

KEY TERMS

- CARBON FOOTPRINT
- SUSTAINABILITY

DESTINATION PORK

GLOBAL POPULATION IS EXPECTED TO REACH 9.7 BILLION PEOPLE BY 2050.

DESTINATION PORK

PATHWAY TO THE INDUSTRY

FACT

DESTINATION PORK

PIG FARMERS UNDERSTAND THEIR LIVELIHOODS ARE INDIRECTLY TIED TO AIR, WATER, AND LAND.

DESTINATION PORK

PATHWAY TO THE INDUSTRY

FICTION

DESTINATION PORK

GLOBAL FOOD PRODUCTION NEEDS TO INCREASE 10-20 PERCENT TO MEET GROWING POPULATION NEEDS BY 2050.

DESTINATION PORK

PATHWAY TO THE INDUSTRY

FICTION

DESTINATION PORK

PORK IS THE NO. 1 CONSUMED PROTEIN IN THE WORLD.

DESTINATION PORK

PATHWAY TO THE INDUSTRY

FACT

DESTINATION PORK

PIG FARMERS DO NOT NEED TO BE CONCERNED ABOUT REDUCING THEIR CARBON FOOTPRINT.

DESTINATION PORK

PATHWAY TO THE INDUSTRY

FICTION

DESTINATION PORK

PIG FARMERS WILL NEED TO MEET CONSUMER DEMANDS SUSTAINABLY.

DESTINATION PORK

PATHWAY TO THE INDUSTRY

FACT

DESTINATION PORK

OBJECTIVE ONE

INVESTIGATE AND EXPLAIN HOW THE PORK INDUSTRY OPERATES SUSTAINABLY TO SAFEGUARD THE ENVIRONMENT.

DESTINATION PORK

SUSTAINABILITY

CONTINUOUS IMPROVEMENT OVER TIME IN RELATION TO ENVIRONMENTAL, SOCIAL, AND ECONOMIC IMPACT

DESTINATION PORK

SUSTAINABILITY

- ENVIRONMENTAL OUTCOMES INCLUDE:
  - Reduction in use of water, air, and land
  - Carbon neutral by 2030
- SOCIAL OUTCOMES INCLUDE:
  - Increase trust in production practices and pork products
- ECONOMIC OUTCOMES INCLUDE:
  - Freedom to operate and to grow the pork business both domestically and internationally

DESTINATION PORK

SUSTAINABILITY

- PIG FARMERS PLAY AN IMPORTANT ROLE IN TAKING CARE OF THE **ENVIRONMENT** AND **NATURAL RESOURCES**. THEY IDENTIFY **POTENTIAL ENVIRONMENTAL PROBLEM AREAS** AND WORK TO CORRECT THEM. IT IS CRITICAL FOR THE PORK INDUSTRY TO **UNDERSTAND** AND **RECOGNIZE** THE IMPACT THEY HAVE ON **PREVENTING** ENVIRONMENTAL PROBLEMS.
- THERE ARE FOUR MAIN AREAS OF ENVIRONMENTAL FOCUS FOR PIG PRODUCERS:
  - Air quality
  - Water quality
  - Soil health
  - Carbon footprint

DESTINATION PORK

ENVIRONMENTAL FOCUS AREA PROJECT

TASK ONE

- AS A GROUP, USE WHAT YOU KNOW TO PREDICT HOW PIG FARMING SPECIFICALLY IMPACTS YOUR ASSIGNED ENVIRONMENTAL FOCUS AREA.
- REVIEW YOUR LIST AND TALLY THE NUMBER OF POSITIVE IMPACTS AND THE NUMBER OF NEGATIVE IMPACTS.
- ANSWER THE FOLLOWING QUESTION:
  - How does this relate to consumers?

TASK TWO

- EXPLORE CONTENT ABOUT YOUR ASSIGNED ENVIRONMENTAL FOCUS AREA. CREATE A 60-90 SECOND VIDEO HIGHLIGHTING WHY PIG FARMERS ARE COMMITTED TO SUSTAINABILITY THROUGH THE ENVIRONMENTAL FOCUS AREA YOU WERE ASSIGNED.
  - Examples of what you could cover include how each level of the pork industry (producers, drivers, etc.) are addressing your assigned area, improvements in that area to date, current law that helps protect your assigned area, etc.

DESTINATION PORK

CAREER HIGHLIGHT

ENVIRONMENTAL COMPLIANCE MANAGER

DESTINATION PORK

TICKET OUT THE DOOR: THEN-NOW-FUTURE

- RESPOND TO THE FOLLOWING IN THE “NOW” COLUMN:
  - Summarize information from each group’s videos.

- RESPOND TO THE FOLLOWING IN THE “FUTURE” COLUMN:
  - How will pork production be different because of environmental sustainability 50 years from now?
  - What creative ways do you think will be implemented to produce more pigs using less resources (land, water, energy)?
  - What can pig farmers do to be more carbon neutral or carbon negative by 2030?

DESTINATION PORK

PATHWAY TO THE INDUSTRY

LESSON EIGHT

MY ROLE IN THE PORK INDUSTRY

DESTINATION PORK

OBJECTIVES

AS A RESULT OF THIS LESSON, THE STUDENT WILL:

- Identify the potential role they could play in the pork industry using content from previous lessons.

DESTINATION PORK

VISUAL REVIEW

- REVIEW THE THEN-NOW-FUTURE CHART, YOUR PORK AND CAREER HIGHLIGHT PAGES, AND DO THE FOLLOWING:
  - Use different colored markers and put a mark (checkmark, star, asterisks, etc.) next to the comments, ideas, answers, etc. that are interesting/ you believe strongly in/want to learn more about
    - If it's something on the Then-Now-Future chart, record it in your notes.
  - Identify and highlight a career that interests you

DESTINATION PORK

OBJECTIVE ONE

IDENTIFY THE POTENTIAL ROLE THEY COULD PLAY IN THE PORK INDUSTRY USING CONTENT

FROM PREVIOUS LESSONS.

DESTINATION PORK

FINAL PROJECT – YOUR ROLE IN THE PORK INDUSTRY

- USING THE INFORMATION FROM THE THEN-NOW-FUTURE CHART, AND YOUR PORK AND CAREER HIGHLIGHT PAGES, PREPARE A FIVE-MINUTE PRESENTATION WITH THE FOLLOWING INFORMATION:
  - What role(s) could you see yourself playing in the pork industry?
  - What problem or challenge will you solve in the pork industry?
  - What do you need to do to prepare for this role?
- PRESENTATIONS SHOULD INCLUDE FFA AND HIGH SCHOOL EXPERIENCES (I.E., SAES, AGRISCIENCE FAIR, CDES, JOB SHADOWING ETC.) YOU CAN PARTICIPATE IN NOW THAT WOULD ALIGN WITH YOUR DESIRED PATH IN THE PORK INDUSTRY.