

# Tech Savvy with Pork in the Kitchen





## LESSON OBJECTIVES:

The student will:

- Utilize proper food safety and sanitation procedures in preparation of products in the foods laboratory.
- Practice safe use of technology in the preparation of food products in the foods laboratory.
- Evaluate the process and product results of using new technology in food products in the foods laboratory.
- Create quality food products using new technology (Instant Pot®)

**GRADE LEVEL:** High School Culinary Classes

**LESSON LENGTH:** 5 class periods (45 minute classes)

### **NATIONAL FCS STANDARDS:**

- Demonstrate food safety and sanitation procedures.
- Evaluate factors that affect food safety from production through consumption.
- Evaluate the influence of science and technology on food, nutrition, and wellness.

### **FOOD SERVICES SKILLS CERTIFICATE COMPETENCIES:**

Performance will be successful when employee:

- Assume responsibility for food and workplace safety
- Prepare products using standard recipes
- Utilize kitchen equipment and practices for specific tasks
- Prepare meat, poultry, and seafood



# Day 1

What do students and consumers know about pork? Perhaps that pork is packed with protein. Using the “Pork 101 Activity” students collect and record information about pork selection, purchasing, storage, cooking methods plus cuts of pork. Online links and resource cards are provided.

## *Activity:*

### **INTRODUCTION TO PORK- FABRICATING A PORK LOIN FOR LABS**

- View the slideshow 7 Facts About Pork <https://www.nationalhogfarmer.com/business/7-trivia-facts-about-pork> and/or
- View Nebraska Pork-15 Trivia Winning Facts about Pork <https://www.nepork.org/15-trivia-winning-facts-pigs/>
- Distribute resource cards for “16 Trivia Winning Facts about Pork” and each student shares this information with the class.





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16

# PORK FACTS

Cut out these trivia winning facts about pigs and distribute to students to share with the class



1

## Pigs were the first animals to be domesticated.

The first book on pig farming was written by Chinese Emperor Fo Hi in 3468 BC, but historians theorize that pigs were domesticated about 6000 years ago. The first pigs came to America in 1539 with the Spanish explorer Hernando de Soto. Perhaps when he found the city of gold, he meant to celebrate with bacon?

2

## Bacon is one of the world's oldest meats.

Dating back to 1500 B.C., bacon has been a favorite for millennia. The phrase "bring home the bacon" originated during the 12th Century when a church in England offered a side of bacon to any man who could swear before the church that he had not had a fight with his wife for a year. Any man that could bring home the bacon was then highly respected among the community.

3

## There were dinosaur pigs.

Enteledonts were pig-like creatures that existed during the early Miocene period, around 16.3 million years ago. Sometimes they are called terminator pigs or hell pigs in popular culture because they would have weighed around 1,000 pounds, stood up to 7 ft tall at the shoulder and had multiple sets of teeth. They are thought to have been an apex predator, and one of the top predators in the area around the American Badlands.

4

## Pigs are the brains of the barnyard.

Winston Churchill once said: "I am fond of pigs. Dogs look up to us. Cats look down on us. Pigs treat us as equals." In all of nature, they rank third behind apes and dolphins in terms of intelligence. They are the quickest animals to learn a new routine or trick!

5

## Pigs don't 'sweat like pigs.'

"You are sweating like a pig!" While this phrase is a common insult, the science behind the statement is faulty. Pigs do not have sweat glands, which is why they tend to roll in the mud in nature to keep cool. Modern farming practices aim to regulate temperatures in the barn to keep the animals comfortable.

6

## Pork, a healthy choice.

Pork has more protein than chicken and is high in zinc, iron, and B-vitamins. A 3 ounce serving of pork tenderloin has 49 mg of sodium and 450 mg of potassium.

7

## Pigs can run a 7-minute mile.

With scooting ground speeds that top out around 11 mph, they might make a great marathon partner! They may not be the fastest or fittest of nature's species. But considering their lung size in proportion to their body size is relatively small, this attitude towards cardio is unsurprising.

8

### **Pigs keep their room clean.**

When your mom said your bedroom looked like a pigsty, you should have said thank you. Then to avoid getting grounded tell her this fact: Pigs are naturally clean and organized. They only roll in mud to cool off, but they self-potty train in a barn or in nature. Dunging patterns have been studied by scientists, and as more and more farms transition to open pen gestation, we see that pigs establish a community toilet for the group.

9

### **Pigs gestation length, just remember 3.**

Three months, three weeks, three days is the average gestation length for most sows. This clever sequence of three totals up to an average 114-day pregnancy. The average litter size globally is six to ten, with most sows having 1.5 litters per year. In the US, litters average more than 13 pigs per litter, due to improvements in genetics, nutrition and herd health.

10

### **Pigs have below average eyesight, but powerful noses.**

Pigs need glasses. Their eyesight is among the poorest of the barnyard species, but they have one of the most powerful noses. In France, pigs are used to search for truffles due to their keen sense of smell.

11

### **Pigs are louder than jet engines.**

Pigs are louder than jet engines. What they lack in eyesight, they make up for in squeal. Pigs can scream up to 130 decibels! With jet engines coming in at 120 decibels compared to diesel engines at 80 decibels, you can imagine how noisy a group of pigs can be if they decide to cause a commotion.

12

### **Next time you make s'mores, thank a pig.**

Pigs aren't just for bacon! They also contribute many other by-products to the market, such as gelatin which makes marshmallows or hair for high quality paint brushes. In fact, according to the Australian Royal Airforce, due to such a shortage of pork after World War 2, the country of Australia found themselves out of paintbrushes. As a result they had to import over 40,000 lbs of pig hair so people could paint their homes!

13

### **Pigs can save human lives.**

Porcine heart valves are commonly used in human patients who require replacement valves. There is also hope that one day pigs could provide a step in helping to treat or to cure diabetes because of the similarities between the human and porcine pancreas.

14

### **Pork is the most consumed animal protein in the world.**

In 2015, according to pork.org, pork accounted for 40% of all meat animal protein consumed worldwide, compared to poultry (34%) and beef (21%).

15

### **How much pork do you eat?**

The average American will eat the equivalent of 28 pigs in their lifetime.

16

### **Packed with Protein**

High-quality protein provides all of the essential amino acids needed by the body for growth and maintenance. Your body can't make essential amino acids, so you must get them from the foods you eat. Pork is a high-quality protein food. Research suggests that evenly distributing protein at meals and snacks throughout the day – about 20 to 30 grams per eating occasion, depending on your individual protein needs – may benefit health.

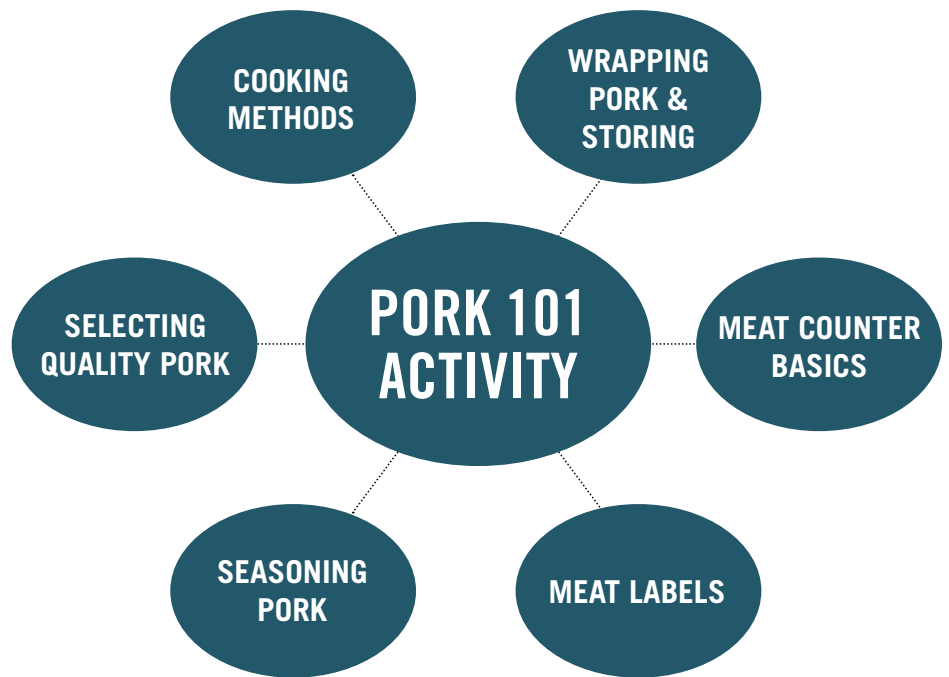


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*Activity:*

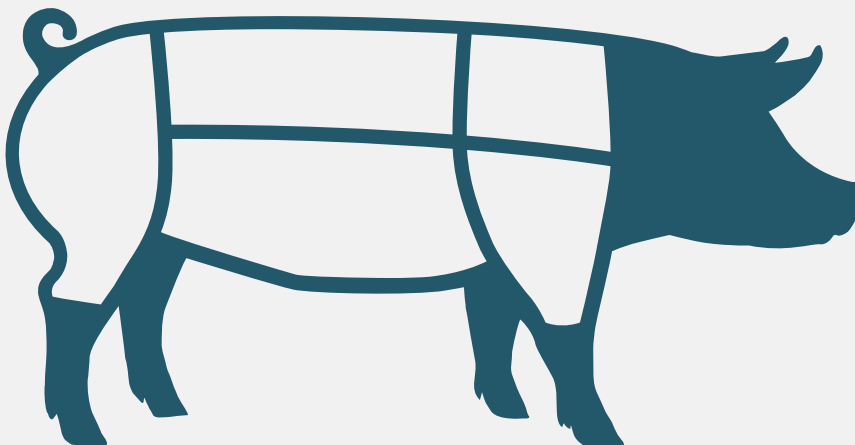
**PORK 101**

- Students will be using <https://www.pork.org/cooking/> to learn more about the following topics:
  - meat counter basics
  - selecting quality pork
  - understanding meat labels
  - wrapping pork & storing
  - cooking methods
  - seasoning pork
- Divide topics among students. Each topic is researched. Students prepare to share their notes with the class. Each student will use “Pork 101 Activity” to take notes on each topic listed.



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**DIAGRAM OF PIG**



*Activity:*

**PRIMAL AND RETAIL CUTS**

- Distribute diagram of pig to each student. Students are to label the 5 primal cuts (Leg, Loin, Shoulder, Side, Picnic Shoulder). List two retail cuts of each.
- Use Pork Cuts <https://www.pork.org/cooking/cuts/> to identify with students the primal and retail cuts of pork. Students label their diagram – listing 2 retail cuts for each primal part.
- Watch YouTube Video by the National Pork Board: Boneless Pork Loin Fabrication [https://www.youtube.com/watch?v=mVOfzy\\_tgaw](https://www.youtube.com/watch?v=mVOfzy_tgaw)



# Day 2

Learning about cuts of pork and researching pork recipes go hand-in-hand. Students will create a new board on Pinterest ([www.pinterest.com](http://www.pinterest.com)) selecting recipes that use a variety of pork cuts. Discuss trends they encounter – seasonings used and cooking methods.

## *Activity:*

**PORK 101** (continued from Day 1)  
Students continue to share information about their assigned topic. Complete note taking on “Pork 101 Activity”. This information will be used in upcoming activity “Pork: The Perfect Meal”.





*Activity:*

**PORK RECIPES**

- Students begin researching recipes. Use Pinterest, [www.pinterest.com](http://www.pinterest.com) create a new board and pin 10 pork recipes they think sound interesting.
- On a flip chart in room students will record which cuts of pork their recipes use. When looking over this chart as a class what are the trends? What types of seasonings were used in recipes that were pinned? What methods of cooking pork were pinned?

*Activity:*

**ELECTRIC PRESSURE COOKER / INSTANT POT DEMO**

- Start discussion by asking if anyone owns an electric pressure cooker / Instant Pot, or knows someone who has one? What do you know about electric pressure cookers?
- Watch <https://library.pork.org/media/?mediaId=6F05DD7E-969A-47AA-994C18C0FF6ECF3E> on Pulled Pork in an Instant Pot.



# Day 3

Electric pressure cookers such as Instant Pot® are popular among consumers today because of the convenience. Show how recipes may be used interchangeably between electric pressure cookers, slow cookers and ovens. Students learn how electric pressure cookers work and why preparation time is reduced.



## *Activity:*

### **ELECTRIC PRESSURE COOKER / INSTANT POT DEMO**

(continued from Day 2)

- Demonstrate use of a electric pressure cooker / Instant Pot, by preparing Pulled Pork Recipe or another recipe of choice. Teacher prepares meat, rub, barbecue sauce mixture, sears meat, adds sauce, mixes well and turns on electric pressure cooker.
- Follow-up demo by discussing: How does the electric pressure cooker / Instant Pot work? Why is it faster than a stovetop or oven preparation? How is an electric pressure cooker / Instant Pot similar and different from the stove-top pressure cookers? (i.e. safer, easier method of meal preparation) How did this cooking method compliment the cut of pork?
- In the event FCS department does not have an electric pressure cooker / Instant Pot, demonstrate the Pulled Pork recipe using either a slow cooker or oven. Discuss how to modify recipes to make it work with the equipment available.
- Students divide into their work group for food prep lab – draw a retail cut of pork that they will be preparing. Select two recipes to discuss with teacher, select one for food prep lab.
- If time permits sample pulled pork from demo (or sample next day in class).
- Upon sampling pulled pork each student completes Sensory Evaluation Form for Product Evaluation

### *Teachers note:*

For Instant Pot® information refer to <https://www.digitaltrends.com/?s=Instant+Pots> for talking points to use during class discussion. Articles on website include: “Which Instant Pot® should you buy?” “How to use an Instant Pot®”, “The Best Instant Pots® for 2019”, etc.



*Activity:*

**PORK – THE PERFECT MEAL**

- Introduce the activity with handout “Pork: The Perfect Meal”.
- Demo for students using Nutrition analyzer: <https://www.verywellfit.com/recipe-nutrition-analyzer-4157076> as part of this project.
- Students plan content of poster – what facts are going to advertise PORK (see Pork – The Perfect Meal handout).
- Students import photo of the entrée they prepared.

*Activity:*

**PREPPING INGREDIENTS**

- Students prep their ingredients to be ready for lab tomorrow.
- Students store prepped items according to sanitation and safety regulations.
- Students clean up laboratory per teacher classroom expectations.



# PORK: THE PERFECT MEAL SENSORY EVALUATION FORM

Record the name of each of the products prepared in class and rate using the following scale on the chart below.  
**5=I LOVE THIS, give me more! 4=Pretty Good 3=It's okay 2=Not for me 1=Not okay**

Product Name	Flavor: The flavors blend nicely; are appealing	Aroma: The smell of the product is appealing	Texture: The ingredients are tender or crisp as appropriate	Visual: The presentation of the meal is appealing





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# PORK: THE PERFECT MEAL **POSTER PROJECT**

**Directions:** Create an infographic/poster advertising why PORK is the Perfect Meal!!

**1. Poster will include:**

- a. Recipe lab team prepared in class – name of recipe, ingredients, nutrition facts, picture
- b. Research/calculate the nutritional value of your meal, including the micro- and macronutrients.  
Here is an online resource tool: <https://www.verywellfit.com/recipe-nutrition-analyzer-4157076>  
Print out your recipe analysis.
- c. Any two of the following options for advertising PORK
  - i. Cuts of pork
  - ii. Internal cooking temp
  - iii. Cooking methods

**2. Poster will be neat, creative and include a minimum of 3 photos or clipart.**

Think about how this would be viewed by consumers shopping for meat or if you were creating an infomercial that refers to the poster.

**3. Present your poster in a gallery walk.**



# PORK: THE PERFECT MEAL POSTER RUBRIC

Criteria	Exceeds Expectations	Meets Expectations	Working to Meet Expectations	Not Evident
Poster includes picture of the meal prepared featuring pork				
Poster includes name of recipe and ingredients				
Poster includes nutrition facts for a single serving of the recipe				
Poster includes 2 of the following: pork cuts, cooking methods, internal cooking temps				
Includes minimum of 3 photos/clipart				
Poster has accurate spelling and grammar				
Poster is neat, clean and creatively designed				

Two facts I learned about pork or using an electric pressure cooker / Instant Pot during this lesson are:

A recipe I would like to try at home is:

During our food prep lab our team really excelled when we:

During our food prep lab our team could have improved:



**Instant Pot Pork Chili and Rice**  
<https://www.yummly.com/recipe/Instant-Pot-Pork-Chili-and-Rice-9137679>

## Day 4

It's prep day! Time for students to get cooking while following lab procedures, sanitation standards and safety rules.

### *Activity:*

#### **PORK FOOD LAB**

- Remind students of lab procedures per teacher classroom.
- Students prepare their selected recipes.
- Food prep lab checked for sanitation standards and safety rules.



# Day 5

While students taste test in class, discuss how eating food ought to be a sensory experience. Focus on the flavor, aroma, texture and visual presentation of pork recipes. Inquire if students have traveled to other countries and how mealtime/eating experience vary.



## *Activity:*

### **SAMPLING OF PORK RECIPES**

- Remind students of lab procedures per teacher classroom. Remind students to take photo of their prepared recipe to use with their team's "Pork: The Perfect Meal" poster.
- Students heat up their recipe and set up samples for the class to taste test. Students do a taste testing.
- Using the "Sensory Evaluation Form" evaluate each prepared recipe. Turn in your results to teacher.
- Following clean-up food lab checked for sanitation standards.

## *Activity:*

### **DEBRIEF FOOD PREP LAB**

- Discuss which recipes they preferred and why. Review cut of pork used in each recipe and the method of cooking. Each group share what they excelled at during food preparation. Also, groups share one change they would make to recipe next time.

« **Pulled Pork Chili** [https://www.yummly.com/recipe/Pulled-Pork-Chili-Slow-Cooker-or-Instant-Pot\\_-9122177](https://www.yummly.com/recipe/Pulled-Pork-Chili-Slow-Cooker-or-Instant-Pot_-9122177)





### *Activity:*

#### **PORK – THE PERFECT MEAL** (conclusion)

- Students work on Canva.com (free poster creation resource) to create and print off their poster for the gallery walk
- Posters are completed and displayed in classroom for gallery walk.
- Students complete self-assessment using “Poster Rubric”

#### **OPTIONAL ACTIVITIES TO ENHANCE LEARNING**

- Set up the lab as a pork recipe show-down.
- Judges come and evaluate prepared pork entrees.
- Staff members vote for the most eye-catching and informative poster.
- Students shares copy of recipe and photo of pork dish prepared for their family at home.



# Resources

## ONLINE VIDEOS:

YouTube Video by the National Pork Board: Boneless Pork Loin Fabrication [https://www.youtube.com/watch?v=mvOfzy\\_tgaw](https://www.youtube.com/watch?v=mvOfzy_tgaw)

YouTube on Making BBQ Pork in an Instant Pot-Yummy Pulled Pork in the Instant Pot

## OTHER RESOURCES:

**7 Facts about Pork Slideshow:** <https://www.nationalhogfarmer.com/business/7-trivia-facts-about-pork>

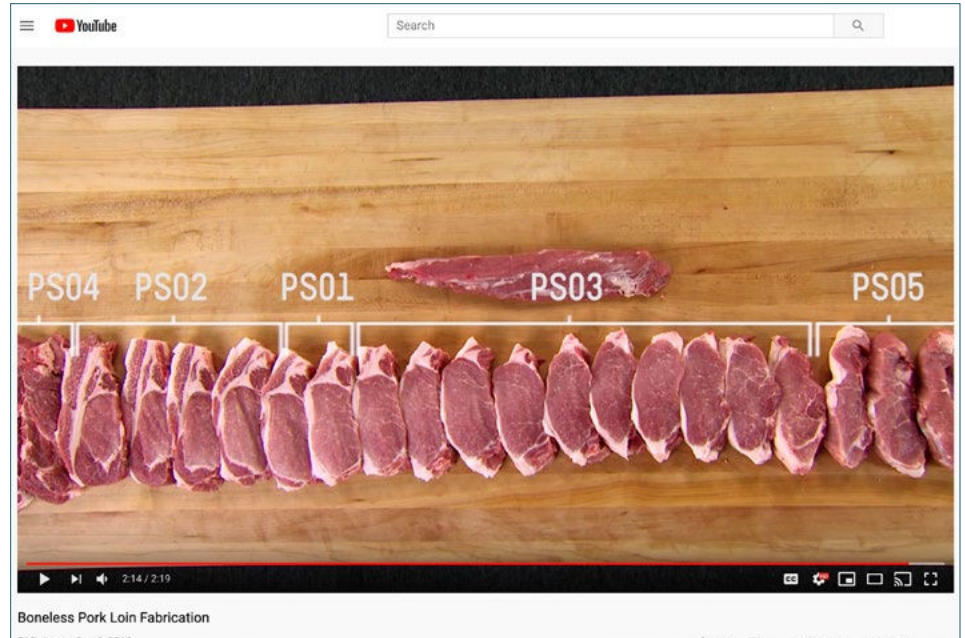
**Nebraska Pork-15 Trivia Winning Facts about Pork:** <https://www.nepork.org/15-trivia-winning-facts-pigs/>

**Resource Cards for 16 Winning Trivia Facts about Pork** (see day #1)

**Diagram of pig** (see day #1)

**The Pork Cuts webpage on the Pork.** Org website: <https://www.pork.org/cooking/cuts/>

**Pork 101 Activity:** <https://www.pork.org/cooking/>



**Pork 101 Activity** (see day #2)  
[www.pinterest.com](http://www.pinterest.com)

**Talking Points on Instant Pots® for Teacher:** <https://www.digitaltrends.com/?s=Instant+Pots>

**Sensory Evaluation Form for Product Evaluation** (see day #3)  
The Perfect Meal (see day #3)

**Nutrition analyzer:** <https://www.verywellfit.com/recipe-nutrition-analyzer-4157076>

**Free Poster Creation resource:**  
[www.Canva.com](http://www.Canva.com)

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