



2022 Summer Nutrition Club: The Mystery of Mealtime



Lesson 2: Central Grain Intelligence & The National Protein Agency

Approximate Lesson Length: 45 minutes

Supplies Needed:

- "Secret Agent Assignment" Handouts (1 per child)
- Blue and green coloring utensils (crayons, colored pencils, markers, etc.)
- "The Rules of a Good Detective" - printed out (1 copy) or written on a chalkboard/dry erase board
- MyPlate model or image
- Tic Tac Toe protein photo cards – printed out or projected on a screen
- Grain photo cards – printed out or projected on a screen
- Clue Station supplies
 - Uncooked pasta – whole wheat and enriched
 - Tortillas – whole wheat and enriched
 - Uncooked rice – brown and white
 - Small bowls to hold each food item – 6 bowls per small group of around 4-6 children
 - Mini magnifying glasses – 1 per child (optional)
- Fingerprint Activity supplies
 - "Collecting Fingerprints for Evidence" handout – printed out or projected on a screen
 - Wooden pencils – 1 per child
 - Notecards - 1 per child
 - Clear tape – 1 small piece per child
- Hand sanitizer
- Fingerprint Veggie Roll-Up recipe supplies - plan for 2 roll-up pieces per child (recipe yields 6 roll-up pieces - refer to Secret Agent Assignment handout for full recipe)

- Small paper plates – 1 per child
- Plastic spoons – 1 per child (if children will be building their own wraps)
- Napkins – 1 per child
- Whole grain tortillas – 1 tortilla per 2 children
- Hummus or bean dip - 2 tablespoons per 2 children
- Carrots (shredded) - 1 ½ tablespoons per 2 children
- Bell pepper (chopped) - 1 tablespoon per 2 children
- Broccoli (chopped)- 1 ½ tablespoons per 2 children
- Ingredient alternatives for special dietary needs
- Sanitizing wipes and paper towels for cleanup
- Disposable food prep gloves
- Knife + cutting board

Preparation:

- Purchase/gather supplies and ingredients
- Day of lesson:
 - Train adult helpers on their roles with the lesson. Recruit their help with set-up and classroom management activities such as:
 - Handing out materials throughout lesson
 - Clue station assistance
 - Collecting Fingerprints for Evidence activity (assist younger children)
 - Prepping and serving recipe
 - Keeping children quiet, focused, and organized
 - Set up a table for each small group of around 4-6 children with coloring utensils and the Secret Agent Assignment handouts. In a separate area, prepare supplies for the clue stations and fingerprint activity for each table (keep out of the children’s sight/reach if possible).
 - Prepare and plate Fingerprint Veggie Roll-ups.

Food Preparation:

- Wash all produce. Chop bell pepper and broccoli and shred carrots (if using whole carrots).
 - Spread 2 tablespoons of hummus or bean dip onto each tortilla (or let children do this step).
 - Top each tortilla with bell pepper, broccoli, and carrots (or put a small amount of each veggie on each plate if children will be building their own wraps).
 - Tightly roll up and cut into 6 even pieces. Place 3 pieces on each plate.
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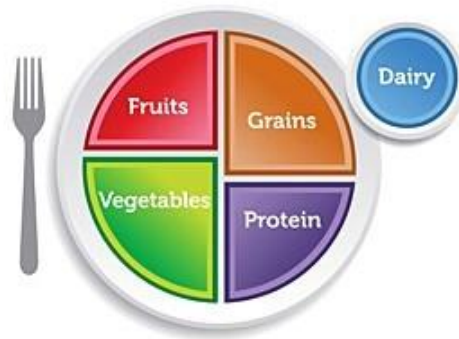
Objectives:

By the end of the lesson, children will:

1. Be able to state one way that proteins help their bodies
2. Be able to state one plant and one animal source that provides protein
3. Be able to state one way that grains help their bodies
4. Be able to identify what proportion of grains they eat should be whole grains
5. Experience the “mystery food of the week” in a new way

1. Welcome

- Show the MyPlate example. Last week we learned more about one side of MyPlate - fruits and vegetables! Can anyone tell me what they remember from our last lesson?
- Today we have two special agent assignments to learn more about the other side of MyPlate - grains and proteins!



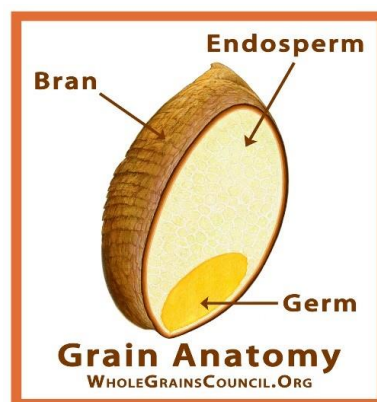
2. The National Protein Agency

- Your first special agent assignment is with The National Protein Agency. First, we need to ask you some questions for your security clearance:
 - Hold up the MyPlate example. How much of the plate does the protein group take up? (one-fourth or a small part)
 - Can anyone think of a protein food? Some possible answers: beef, chicken, fish, shrimp, pork, nuts, beans, soy, eggs.
- Now that you have been cleared by security, let's dive into why proteins are so important for our bodies.
 - Proteins help build up lots of different parts of our body
 - After you eat a protein food, your stomach breaks down the food into little blocks of protein.
 - Then your body builds these little blocks into something new. This can be things like your skin, bones, or muscles. Protein keeps us strong and healthy!
- There are many different kinds of protein foods. Some of them come from plants and others come from animals.
 - Protein foods that come from animals include foods like meat, fish, and eggs. Animals get their energy from eating plants or other animals.

- Protein foods that come from plants include foods like beans, nuts, and seeds. Plants get their energy from the sun.
- Let's play a game to learn more about plant and animal protein foods!
 - Make sure each child has both a blue and green coloring utensil and finds the Tic Tac Toe board in their Secret Agent Assignment handout.
 - Hold up the first protein photo card and ask the children to find the matching image on their Tic Tac Toe board. If they think that food comes from an animal, they should color over the image in **BLUE**. If they think it comes from a plant, they should color over the image in **GREEN**.
 - After all spaces have been filled on the board, reveal the correct answer for each protein card (see the final card for the answer key).

3. Central Grain Intelligence

- Now that you have solved the protein mystery, your next secret agent assignment will be working with Central Grain Intelligence to learn more about what they do. First, we have a few more questions for you:
 - Hold up the MyPlate example. How much of the MyPlate does the grains group take up? (one-fourth or a small part)
 - Can anyone name a grain food? (some possible answers: bread, rice, pasta, tortillas, crackers, bagels, oats, cereal, pizza crust, muffins, pancakes, popcorn)
- Grains are important because they give us energy for running, jumping, dancing, talking, and even blinking!
- To be the best special agents, we need to choose whole grains. Does anyone know what a whole grain is?
 - A whole grain means all the parts of the grain are still in the food. For example, here is a close-up picture of wheat (hold up picture of wheat kernel).
 - Wheat is a grain that grows in a field (hold up picture of wheat field). It can be ground up into flour to make things like bread, cakes, and cookies.
 - If we take a closer look at one kernel of wheat, we can see that it has 3 different layers (hold up or draw a picture of the whole grain layer breakdown). We have the bran, endosperm, and the germ.



- The bran has fiber that helps us feel full and acts like a broom to keep food moving through our bodies.
- The endosperm gives us energy to move and think.
- The germ has B vitamins that help us to turn our food into energy.
- All 3 parts together make a whole grain!

- Sometimes these layers are taken apart and the bran and germ are removed, leaving us with only the endosperm (hold up picture of refined grain). Grains with only the endosperm are called refined grains.
 - Refined grains are found in foods like white bread, flour tortillas, white rice, and cupcakes.
 - Refined grains can be tasty and they still give us energy, but they are missing the other nutrition detective skills like fiber and B vitamins that whole grains have. That's why whole grains are the best fuel for our bodies!
- Does anyone know how much of the grains we eat should be whole grains? (half or more).
- Can anyone think of a whole grain they could eat for breakfast? (Answer ex: whole wheat pancakes or waffle, whole wheat bagel, oatmeal)
- How about for lunch or dinner? (answer ex: whole wheat bread or tortilla, brown rice)
- Tip: If a child asks how to tell if a food is a whole grain, tell them to read the package! The first ingredient should say "whole wheat," "100% whole wheat," or "whole grain." They can also look for a Whole Grains Council stamp on packages like this:



4. Use your Clues Station

** Divide children into groups of 4-6 (each child should be able to have their own mystery grain) **

- It's time to be food detectives again! Today we have some mystery foods that might be new for you - or maybe not! Quickly remind the kids of the food detective rules:
 - **Use your senses** - today we are going to use all of our senses to gather clues on what the mystery food might be.
 - **Be brave and polite** - even if you don't think you're going to like the food or you've tried it before, be brave and put a little piece in your mouth. It's ok if you don't like it – you can politely throw it away.
 - **Don't give up** - sometimes it takes our taste buds a little while to figure out if they like a new food. If you don't like a food the first time you try it, give it another chance! Maybe you will like it better a different way.
- Today we will be using our detective skills to investigate different grains and then taste one of the grains in a recipe!
 - Stations include small bowls of:
 - Uncooked pasta – whole wheat and enriched
 - Tortillas – whole wheat and enriched
 - Uncooked rice – brown and white
 - First, let's use our eyes and magnifying glasses (if using) to collect clues about each item, one at a time! Start with the pasta, then tortillas, then rice.
 - Have you seen this before? Does it look similar to anything? What color is it? What shape?
 - Can you tell which one is a whole grain and which one is a refined grain?
 - Next, let's gather clues by feeling each item, one at a time.
 - What does it feel like? Try rolling the food between your fingers. Is it smooth or rough?
 - Does one feel different than the other?

- Now that you have gathered all your clues what differences did you notice between the three grains?

5. Fingerprint Activity

- Just like how grains all feel and look different and have unique shapes, so do our fingerprints! Today we will be collecting evidence through taking a fingerprint from one of our fingers.
 - Use “Collecting Fingerprints for Evidence” Handout for instructions.
 - Hand out an index card, tape, and pencil to each child.
 - Children can place their fingerprint tape piece on page 4 of the Secret Agent Assignment handout.
- Pass around hand sanitizer or have children wash their hands before sampling the recipe.

6. Recipe Sampling

- Now we are going to try whole wheat tortillas in a recipe with other ingredients.
 - Have recipe prepped and plated in advance for children to try the Fingerprint Veggie Roll-Ups OR
 - Have the children prepare their own roll-ups by giving each child a plate with a tortilla, veggies, and hummus or bean dip.
- While the children are enjoying their snacks, consider asking some of the following questions:
 - Why do you think these are called “Fingerprint Veggie Roll-Ups”? (the lines of the wrap sort of look like the lines of our fingerprints!)
 - Which foods do you see or taste in the roll-ups? Which MyPlate food group do those foods go in?
 - What other foods do you think would be tasty in these roll-ups?

7. Wrap-Up

- While children are finishing their samples, ask the following questions (record responses):
 - Raise your hand if this is your first time trying a whole wheat tortilla.
 - Who can raise their hand and tell me one thing you learned today?
 - Who is excited for the next lesson?

8. Clean Up

- Gather and clean supplies
- Sanitize tables
- Throw trash away



RULES OF A GOOD DETECTIVE



1

USE YOUR SENSES

You can use more than your mouth to find clues. Your ears, nose, eyes, and hands can also help you solve the mystery.

2

BE BRAVE AND POLITE

Detectives will do anything to solve the case. Give it a try and be brave. If you don't like it that's okay! Just remember to be polite if it's not your favorite.

3

DON'T GIVE UP

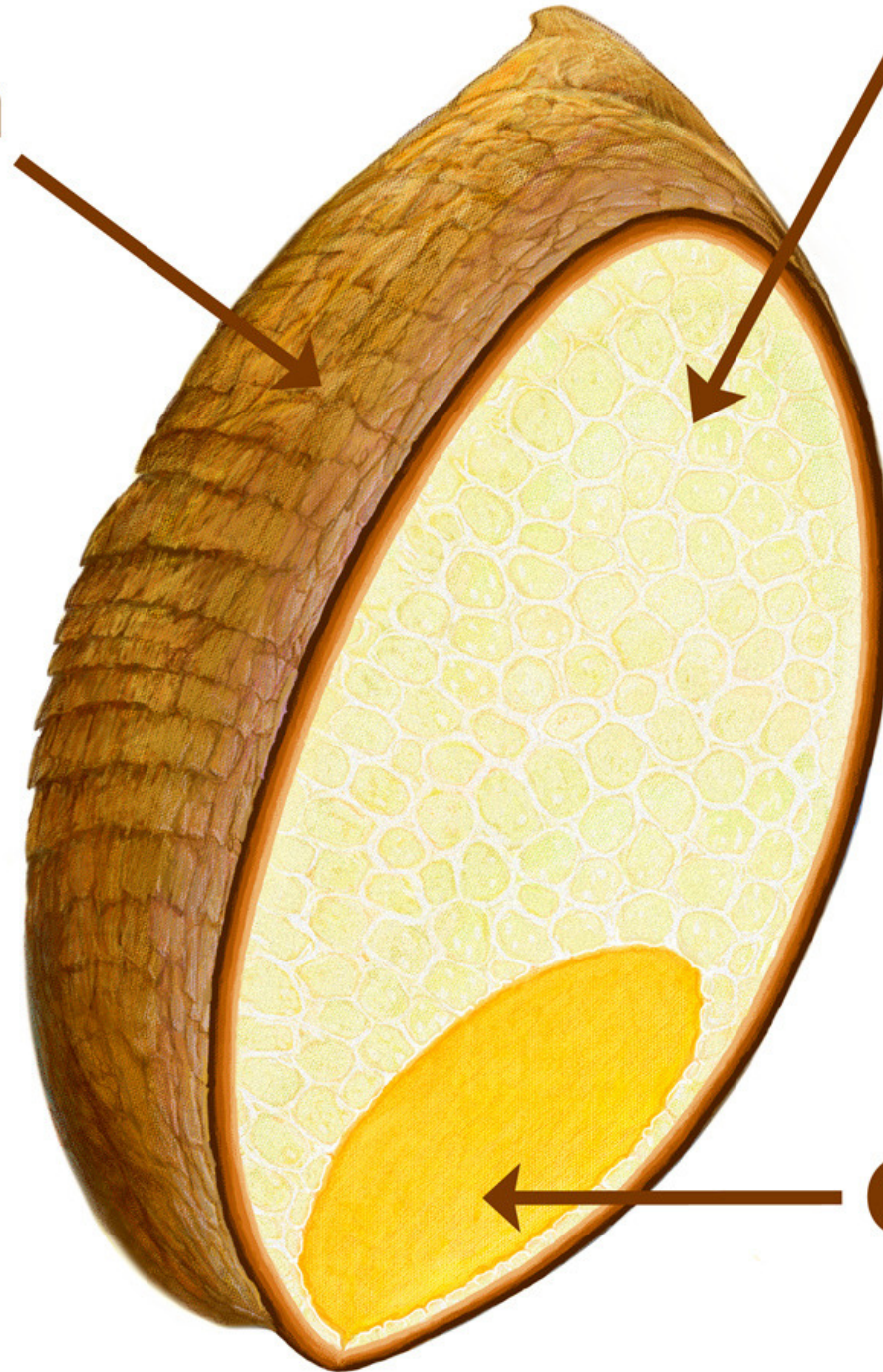
Detectives **NEVER** give up! Let your taste buds take some time to figure out what you think of the food. You never know...maybe you'll like it better than the last time you tried it!





Bran

Endosperm



Germ

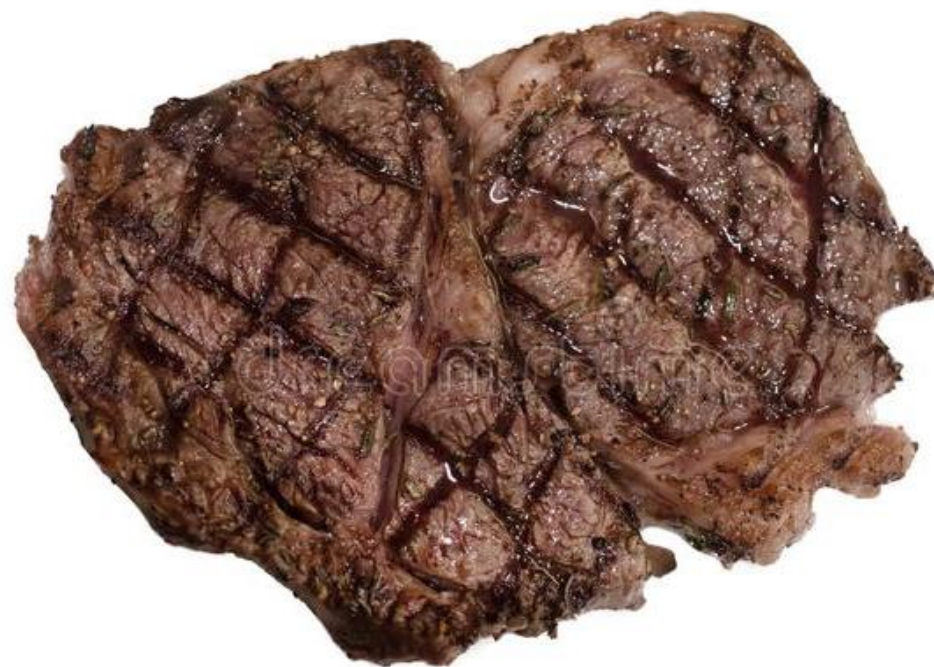
Protein Tic Tac Toe



Tofu



Chicken



Steak



Peanut Butter



Tuna



Black Beans



Eggs



Almonds

Answer Key

**Black
Beans**

Chicken

Almonds

Eggs

X

Steak

**Peanut
Butter**

Tuna

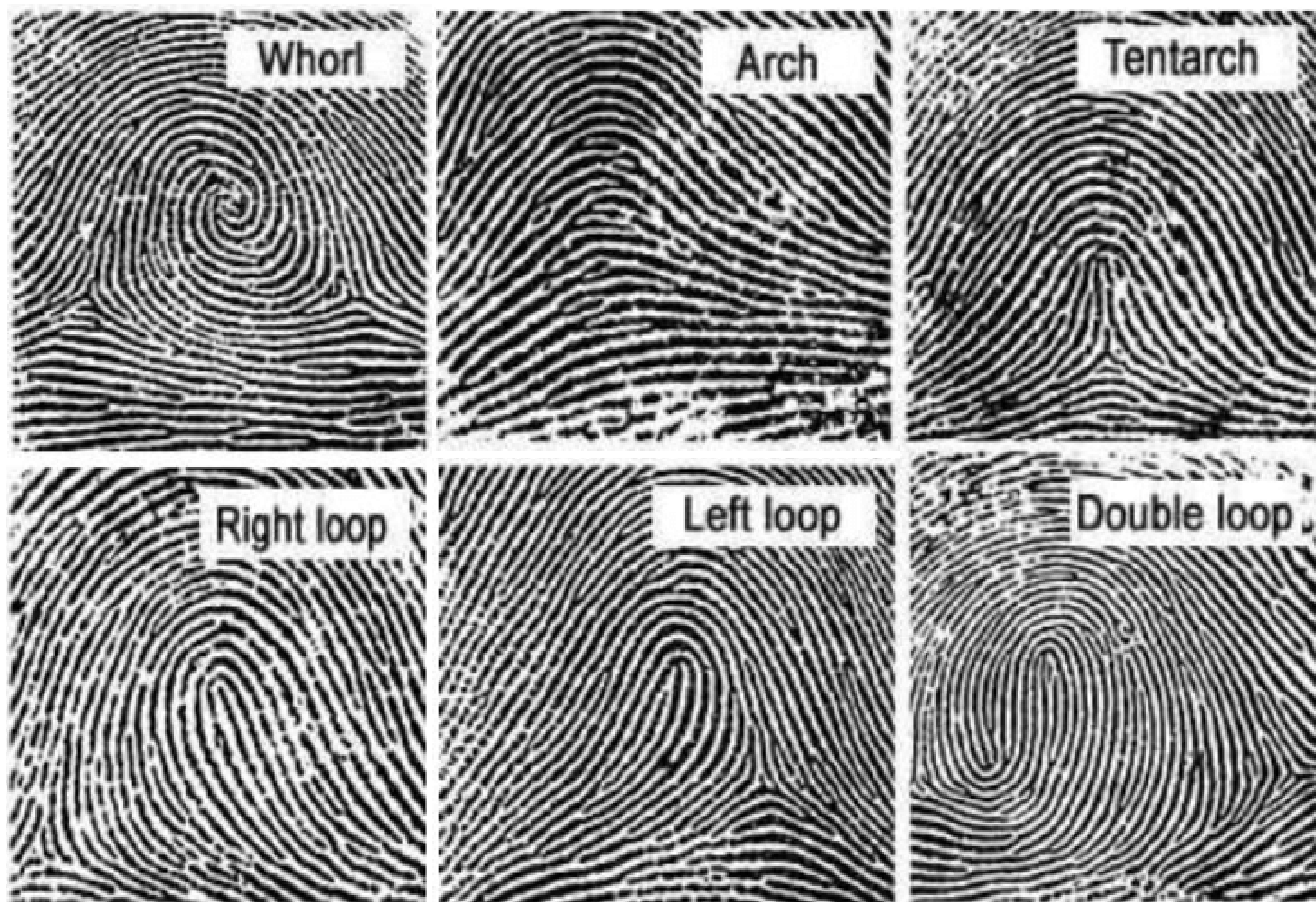
Tofu



Collecting Fingerprints for Evidence



The different fingerprint patterns



How to take your own fingerprint

1. Color about half of the index card dark with a pencil to make an "ink pad"
2. Choose which finger you would like to use
3. Place the pad of your finger on the "ink pad" and turn it to the left and then to the right
4. Take a piece of tape and place it on your finger
5. Then take the tape and place it on a piece of paper
6. Investigate what type of fingerprint you have