What Part Is It?

Use lab evidence to compare botanical and food labels.

BOT.3.8 "Using laboratory data, correctly categorize fruits, vegetables, nuts, modified stems, or other plant parts. Compare the scientific definitions of these terms to those used by the general public/society and the USDA to categorize food."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the lab clues for each food, circle its botanical part, and box the labels shoppers or USDA MyPlate use for it.

Five Foods, Different Labels

1. At a school food lab, students sort five familiar foods using a hand lens and notes on how each grows. A botanical fruit develops from a flower's ovary and typically contains seeds. A root absorbs water and anchors a plant. A stem supports growth and has buds, even if it grows underground. A true botanical nut is a hard, dry fruit with one seed that stays closed when mature. "Vegetable" is a kitchen and USDA food-group term, not one specific plant organ. USDA MyPlate groups foods by eating patterns, not by whether a sample is a root, stem, or fruit.

2. The lab's tomato sample has seeds within tissue that developed from a flower's ovary, so it is a botanical fruit. Shoppers often call tomatoes vegetables because they appear in savory dishes, and USDA MyPlate places tomatoes in the Vegetable Group. A cut potato shows buds called eyes on its swollen underground surface. Those eyes can grow into shoots, evidence that a potato tuber is a modified stem, not a root. In the kitchen, people call potatoes vegetables, and MyPlate places them in the Vegetable Group. A carrot has a thick storage root without stem buds; people and MyPlate also call it a vegetable.

3. A peanut plant produces pods from flowers. The pod is a dry fruit that can split along its seams, unlike a true botanical nut, which stays closed. Inside each pod are seeds, the part people usually eat. Shoppers call these seeds peanuts or nuts, but botanically they are seeds of a legume fruit. USDA MyPlate places peanuts in the Protein Foods Group, alongside other nuts and seeds. For comparison, an apple develops from a flower and holds seeds, so botanists call it a fruit; shoppers call it a fruit too, and MyPlate places it in the Fruit Group. One food can therefore have several accurate labels for different purposes.

2 ANSWER WITH EVIDENCE

Use the passage

1. What lab evidence makes the tomato a botanical fruit, and how do shoppers and MyPlate label it?

2. Why is a potato a modified stem rather than a root? Compare its botanical part and MyPlate group with a carrot's.

3. People often call peanuts nuts. What does the lab evidence show about the pod and the part people eat, and where does MyPlate place peanuts?

4. Compare the apple and tomato: What botanical part is each, and which MyPlate group contains each?

3 YOUR TURN

Your own words

Invent an edible plant part. In one paragraph, give two lab clues that identify its botanical part, then explain what shoppers might call it and which MyPlate group it would most likely fit, using a food in the passage as your comparison.

ANSWER KEY

What Part Is It?

PART 1 · READ AND MARK

Underline the lab clues for each food, circle its botanical part, and box the labels shoppers or USDA MyPlate use for it. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What lab evidence makes the tomato a botanical fruit, and how do shoppers and MyPlate label it?	**Its seed-containing tissue developed from a flower's ovary, so it is a botanical fruit. Shoppers call it a vegetable, and MyPlate puts it in the Vegetable Group.**
2	Why is a potato a modified stem rather than a root? Compare its botanical part and MyPlate group with a carrot's.	**The potato's eyes are buds that can grow into shoots, showing it is a modified stem. A carrot is a storage root without stem buds. MyPlate puts both in the Vegetable Group.**
3	People often call peanuts nuts. What does the lab evidence show about the pod and the part people eat, and where does MyPlate place peanuts?	**The pod is a dry fruit that can split open, not a true botanical nut. People eat the seeds inside it. MyPlate places peanuts in the Protein Foods Group.**
4	Compare the apple and tomato: What botanical part is each, and which MyPlate group contains each?	**Both are botanical fruits. MyPlate places apples in the Fruit Group and tomatoes in the Vegetable Group.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

My invented food, the ember pod, develops from a flower's ovary and contains many seeds. Those two lab clues identify the whole pod as a botanical fruit. Shoppers might call it a vegetable if they cook it in savory soup. Like the tomato, it would most likely fit in MyPlate's Vegetable Group. That group describes how people eat it, not which plant part it is.

Accept invented foods whose two clues support the stated botanical part. The proposed shopper label and MyPlate group should be plausible and linked to a passage example.