

Elements of a Great Thanksgiving!

Introduction: There are currently 25 elements identified by the FDA as “essential” for good health. These elements, classified as “major,” “lesser,” and “trace,” are listed in the table below.

MAJOR (Make up 99% of your body mass)	LESSER (Build body tissues and maintain cell processes)	TRACE (Essential to important functions such as forming bones, teeth & red blood cells)	
H – Hydrogen	Fe – Iron	V - Vanadium	Sn – Tin
O – Oxygen	K – Potassium	Cr – Chromium	Si – Silicon
C – Carbon	Zn – Zinc	Mo- Molybdenum	Se – Selenium
N – Nitrogen	Na – Sodium	Mn – Manganese	F – Fluorine
P – Phosphorus	S – Sulfur	Co – Cobalt	I – Iodine
Ca – Calcium	Cl – Chlorine	Cu – Copper	
	Mg – Magnesium	B - Boron	

INSTRUCTIONS: Around the room several tables are set-up containing items that represent different phases of your Thanksgiving celebrations.

1. Visit the table for each phase of the celebration (except dessert!). Begin at any phase.
2. Read the nutrients and / or ingredients listed on the labels of several items on each table. Identify 3 different elements listed on 3 different items. (12 different elements in all!)
3. **Record** the item name, element identified, Group Name or number to which that element belongs (1A-8A or transition metal), and classify the element as a major, lesser, or trace nutrient in the Data Collection Tables below.

NOTE: Elements may be combined in chemical compounds. For example, the ingredient “calcium chloride” contains both Ca and Cl. The ingredient “sodium phosphate” contains Na, P, and O. The elements C, H, and O are contained in most acids, fats, carbs, and proteins.

Phase 1: APPETIZERS & SNACKS

Item Name	Element Name (ingredient/nutrient)	Group # or Name	Major, Lesser, Trace

Name _____

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Element Trivia: Identify one transition metal in any can of nuts. _____
Mixed nuts have copper, manganese, zinc, iron and even molybdenum (in GV almonds).

Name _____

Phase 2: SALADS, VEGGIES & BEVERAGES

Item Name	Element Name (ingredient/nutrient)	Group # or Name	Major, Lesser, Trace

Element Trivia: Identify the transition metal used to color ranch dressing. _____
(Titanium Dioxide – titanium(IV) oxide is used to color Great Value Buttermilk Ranch!)

Phase 3: MAIN COURSE

Item Name	Element Name (ingredient/nutrient)	Group # or Name	Major, Lesser, Trace

Element Trivia: What combo of elements from the Carbon and Oxygen families keeps instant potato flakes or gravy powder from sticking together? _____
Great Value Creamy Butter Potato flakes & turkey gravy packets use Silicon Dioxide (sand!)

Phase 4: CLEAN-UP & UH-OH, I ATE TOO MUCH!

Item Name	Element Name (ingredient/nutrient)	Group # or Name	Major, Lesser, Trace

Element Trivia: What Halogen helps disinfect toilet bowls? _____

Element Trivia: What Nitrogen family member in Pepto settles your tummy? _____
“The Works” (\$1.00 a bottle) TB cleaner uses HCl and Pepto contains Bismuth!

Name _____

Phase 5: DESSERT!

Trade your completed Data Sheet in for a piece of pie! Watch the “Periodic Table” video and enjoy learning more about the elements. Happy Thanksgiving!

TEACHER’S NOTES:

I brought in things that fit the four categories. Definitely used boxed stuffing, potato flakes, gravy packets, canned cranberries, and pumpkin pie, prepared pie crust, spray whipped cream (NO₂) & evap milk as items. I used a Butterball Turkey breast that was injected with sodium phosphate. I looked for canned veggies like carrots, pickles and new potatoes that use calcium chloride as a preservative. I brought in chips, dips, mixed nuts, maraschino cherries and fruit drinks contain sulfites and Orange Gatorade contains brominated vegetable oil! Clean-up and Uh-Oh table had Pepto, Windex, MOM, Arm & Hammer Vacuum Bags, Borax, TB cleaner, Gaviscon, Alka-seltzer, etc.

I also had a "contest" going for students to be the first to find one element from each main group (1A-7A) and one transition metal. And a list where they could write their "most unusual element" - Molybdenum in roasted almonds, bismuth in Peptobismo, aluminum in canned buttermilk biscuits, etc! Lots of reading labels and imagination for a teacher doing this lesson for the first time, but once the stockpile is built, it will go much more smoothly.

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