

Phytonutrients: The Vegetable & Fruit Rainbow

Connect - The USDA recommends that we eat 5 servings of vegetables and fruits each day. Help students follow this recommendation by connecting color to nutrient content and encourage them to consume all the different colors of the rainbow in vegetables and fruits each day.

Teach - Vegetables and fruits are made up of nutrients, vitamins, minerals, and fiber that help keep our bodies healthy. Eating vegetables and fruits help our bodies make energy, so we can do fun things like run, jump and play. Vegetables and Fruits also keep our muscles, teeth, and bones strong and help our brain to stay smart so we can keep learning new things. And the fiber in vegetables and fruits helps our digestive system stay healthy by feeding good gut bacteria and helping us get rid of waste.

Vegetables and Fruits also contain special nutrients unique to plants called **phytonutrients**.

- Phytonutrients are plant based chemicals that protect the plant from pests and environmental dangers while the plant is growing
- They also help support numerous health systems in humans and other animals when they eat the vegetable or fruit.
- Phytonutrients are also what naturally give vegetables and fruits their beautiful pigment or color.
- Each color represents a different phytonutrient, so by eating different colors of vegetables and fruits, you can be assured that you're getting a wide array of phytonutrients too.

To keep your body happy, healthy and strong, **eat 5 servings of vegetables and fruit each day.**

- Think about your plate. If **1/2 of your plate at every meal is made up of vegetables and fruits**, then you are most likely getting your 5 servings!
- Remember to keep your plate colorful too. It might be helpful to think about a rainbow. Eating a variety of vegetables and fruits that are Red, Orange, Yellow, Green, Indigo and Violet for the rainbow and White for the clouds, fills your plate with lots of colors. **Try to eat a vegetable or fruit of every color each week!**

Other foods that we eat besides vegetables and fruit might be very colorful too. Let's take candy for example. Often times foods like candy that don't come from a plant or animal have **artificial colors** added to them.

- When this happens, it is not a natural phytonutrient that is making the food colorful, but instead a man made chemical.
- These types of foods are okay to eat sometimes, especially to celebrate special occasions like a birthday, holiday or after you've reached your goal of eating 5 servings of vegetables and fruits!
- Unlike vegetables and fruits, artificial colors aren't something your body can use to support health. That's why the majority of the food we eat should be naturally colorful like vegetables and fruits.

Active Engagement -

- Have students draw an outline of their body on a piece of white paper or use the body outline worksheet provided.
- Instruct them to look over "The Vegetable and Fruit Rainbow Chart" to review the phytonutrient colors and which parts of the body they support.
- Have students draw vegetables and fruits on different sections on their body outlines with the correct phytonutrient color that is supporting health when that particular color of food is eaten (Ex: draw apples near the brain, broccoli near the eyes, and garlic near the stomach). Alternatively, provide students with the attached sheet of vegetables and fruit to cut out and paste to the body outlines. "
- Once all phytonutrient colors have been matched to the body outline, wrap up the activity by asking students to reflect on the fruits and vegetables they eat, by circling them. Then ask, what foods (& phytonutrients) do they need to eat more of to support currently neglected functions of their body?
- Finally, admire all the beautiful and colorful artwork!

Link - Use the attached recipe to make a colorful vegetable and fruit RAINBOW smoothie. If available, use produce from your schoolyard or home garden. As you add each ingredient to the blender, notice the color of the vegetable or fruit and review how the phytonutrients are supporting your body.





THE VEGETABLE AND FRUIT RAINBOW

RED

- Apples
- Red Peppers
- Strawberries
- Tomatoes
- Beets
- Radish
- Raspberries
- Red Mustard Greens
- Red Cross Lettuce

PHYTONUTRIENTS: LYCOPENE & ANTHOCYANINS

Supports brain and heart health by making sure our veins are clear and working properly



PHYTONUTRIENTS: ZEAXANTHIN & GLUCOSINOLATES

Helps maintain good eyesight, keeps bones and teeth strong, and supports healthy detoxification.



GREEN

- Kale
- Zucchini
- Collards
- Broccoli
- Peas
- Green Beans
- Spinach
- Swiss Chard
- Lettuce
- Mustard Greens
- Basil
- Cabbage
- Cilantro
- Arugula

YELLOW & ORANGE

- Yellow Squash
- Pumpkins
- Carrots
- Sweet Potatoes
- Sungold Tomatoes

PHYTONUTRIENTS: BETA-CAROTENE & LUTEIN

Supports skin health by acting as a natural sunscreen and helps the immune system stay healthy and strong.



PHYTONUTRIENTS: ANTHOCYANINS & FLAVONOIDS

Helps maintain healthy brain cells and supports the healthy aging process.



BLUE & PURPLE

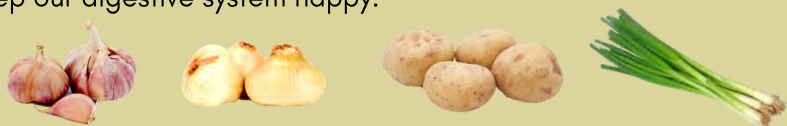
- Blue Potatoes
- Eggplants
- Blackberries
- Redbor Kale
- Purple Onions

WHITE & BROWN

- Garlic
- Onions
- Potatoes
- Green Onions
- Turnips

PHYTONUTRIENTS: ORGANOSULFUR COMPOUNDS

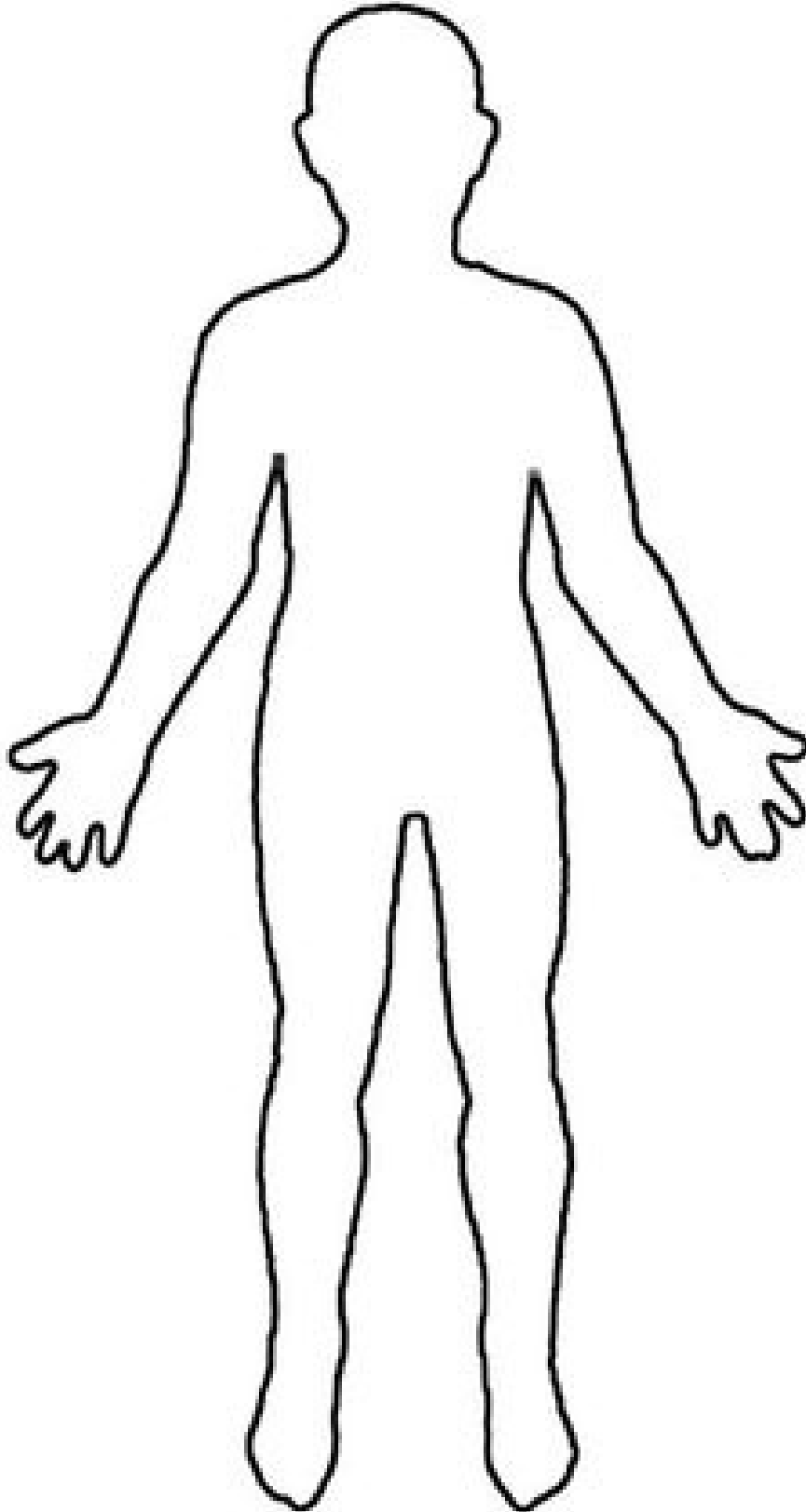
Maintains heart and brain health and also supports good gut bacteria to keep our digestive system happy.





Pytonutrient Body Outline Worksheet

- Using the "The Vegetable and Fruit Rainbow Chart", review the phytonutrient colors and which parts of the body they support.
- Next, draw or match vegetables and fruits to the body parts that they support. For example, draw apples near the brain, broccoli near the eyes, and garlic near the stomach.
- Circle the vegetables and fruits you like to eat. Notice that there are many different vegetables and fruits you can eat to support each part of your body.



Recipe for: VEGETABLE & FRUIT RAINBOW SMOOTHIE

Serves 10-20 students a sample size portion or 2-3 full portions

INGREDIENTS

- 4-5 medium strawberries (or blackberries or raspberries)
- 1/2 of an orange, peeled
- 1/2 of a medium yellow squash (or carrot, cucumber, zucchini)
- 2 handfuls of greens (try spinach, kale, collards, or chard)
- 1 cup of ice
- 1/3 cup milk or water (both dairy or non dairy milk will work)
- 1/3 cup plain Greek yogurt (optional for added thickness)

*You can sub any of the above ingredients based on season and availability. Just make sure it's colorful!

DIRECTIONS

1. Put all ingredients in a blender and pulse 5-7 times.
2. Scrape down the sides and let blender run until all ingredients are combined and mixture is smooth.
3. Pour rainbow smoothie in a cup and enjoy!



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