



February 2017 – Southwest Pinto Dip

Mini-lesson Ideas: Science and Math

1. EDIBLE PLANT PARTS: Southwest Pinto Dip is made using a number of ingredients – all of which come from plants! *Can you match the ingredient with the part of the plant it comes from?*

Pinto bean	Bulb & leaves
Cilantro	Fruit
Green onion	Seed
Chili peppers	Seed, ground
Cumin	Fresh leaves

2. TYPES OF PEPPERS: Chipotle peppers, a type of chili pepper, belong to the group of plants with the Latin name *Capsicum*. The *Capsicum* genus (group) contains around 25 different types of peppers, all with varying amounts of **capsaicin**. Capsaicin is the *bioactive compound* (a component that affects living organisms) that gives a pepper its spiciness! A high amount of capsaicin protects the pepper from being consumed by hungry insects and mammals, however birds are unaffected by capsaicin. *Can you match these peppers with their pictures?*

(A)



(B)



(C)



_____ **Chipotle Pepper:** A dried & smoked jalapeño pepper. It takes about 10 pounds of jalapeño peppers to produce 1 pound of chipotle peppers. Medium-hot pepper.

_____ **Serrano Pepper:** One of the most used peppers in Mexican food. Spicier than a Jalapeño pepper. Each plant can grow about 50 Serrano peppers.

_____ **Bell Pepper:** This pepper does not contain capsaicin, so it's not considered spicy! This pepper contains almost 2 times more Vitamin C than an orange!

_____ **Bonus** Which pepper varieties above start green and mature to a red color?

3. EXPERIMENT: Did you know you could re-use green onions? By cutting off the green part of the plant, then placing the white part with the roots attached into a glass of water, the green onions will continue to regenerate! Make sure to change the water daily and place the glass on the windowsill so it gets sun. Place a ruler near the glass so you can measure and record the daily growth! Record your estimations and actual measurements in a table.





4. **RECIPE MATH:** Let's do some math to learn more about how Southwest Pinto Dip is made.

a) The Southwest Pinto Dip recipe calls for 2 teaspoons of lime juice. A lime contains about 2 tablespoons of juice. How many recipe batches could you make with 4 limes? ____ **batches**
(Hint: 3 teaspoons = 1 tablespoon)

b) Canned beans contain both beans & water. By making the number of batches in part a, how many cups of drained pinto beans would you have if each 16 ounce can contained 57% pinto beans by weight? (Hint: 1 cup = 8 ounces) _____ **cups of drained Pinto beans**

c) Assuming each batch of Southwest Pinto Dip takes 10 minutes to make, how many batches of dip could culinary services produce between 7:00am and 1:00pm?
_____ **batches of dip**

BONUS: How many fewer batches would they produce if they stop making dip between 11:20am and 12:00pm to serve lunch? _____ **batches of dip**

5. **NUTRITION FACTS:** Circle the recipe ingredient that contains the highest amount of the specified nutrient per gram of ingredient.

Proteins function to build bone, muscle, cartilage, skin and blood, and also provide energy.

- A) Pinto bean B) Honey C) Cilantro

Vitamin K plays an important role in helping blood clot and building healthy bones.

- A) Pinto bean B) Cilantro C) Lime juice

Potassium is crucial for proper heart function and for normal digestive and muscular function. It is an important mineral that all cells, tissues, and organs need to function regularly.

- A) Green onion B) Cilantro C) Pinto bean

Dietary fiber includes parts of plant foods, which are not digested by the body. It promotes movement through the digestive system and helps lower blood cholesterol.

- A) Chipotle pepper B) Pinto bean C) Cilantro

Answers:
1) Pinto Bean = Seed; Cilantro = Fresh leaves; Green onion = Bulb & leaves; Chili peppers = Fruit; Cumin = Seed.
2) Chipotle pepper = B, Serrano peppers = C, Bell peppers = A, Bonus = A & B
3) A, B, B, B, B
4) a—12 batches, b—27.36 cups of drained beans, b—36 batches, BONUS—4 batches
5) A, B, B, B, B

Sources:
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Green onions: <https://s-media-cache-ak0.pinimg.com/736x/cf/98/6d/cf986d644b0fba01bdd6824999e20300.jpg>