2024 FFA ANRAD Food Science CDE Product Development Scenario

Memorandum

To: Research & Development Group
From: Market Research & Development Group
Subject: Breakfast Cereal for Kids ages 4-12

Task: Using data provided, along with the ingredients options and the nutrition information, design a kids (age 4-12) breakfast cereal formulation to be marketed to health conscious parents.

The consumption of added sugar in the American diet is a topic of rising concern. Excessive sugar consumption is linked to serious health issues such as obesity, heart disease, and diabetes[1]. One notable source of excess sugar consumption for children comes from breakfast cereals. An article published on a dental website explains that many favorite breakfast cereals contain 12 grams of sugar per 30 gram serving[2]. However, USDA guidelines for the Child and Adult Care Food Program suggest that healthy breakfast cereals should be about half this amount, not to exceed 6 grams of sugar per ounce[3].

As our Marketing Division was researching a way to get into this market sector, they came across the following information from an article titled, "Reducing Sugar in Kids' Cereals"[4]:

> [T]here are some other effective ways to lower sugar content. One method is to opt for less refined grains and other forms of nutritive sweeteners that add body and depth to the flavor profile rather than simple sweetness. Malted grain syrups (such as from barley or sorghum), maple, and even less-refined sugars, such as jaggery (also called "panela"), and sugar from dried fruits such as dates, carob, and coconut. They have the same caloric value and sweetness as refined fructose and sucrose, but their added flavor notes enhance the perception of sweetness, allowing for a reduction in total sugar content.

From the data provided, one can conclude that there are alternatives to the way kids' cereals have been manufactured and marketed in the past several decades. The amount of added sugar in the diet has become more of a concern in recent years, and some parents are taking steps to ensure their children develop healthier eating habits at a young age.

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[1] Centers for Disease Control and Prevention. (2022, January 13). *Know Your Limit for Added Sugars*. https://www.cdc.gov/healthyweight/healthy_eating/sugar.html

[2] Dental Review.News. (2017, March 17). *How much sugar is in your child's cereal bowl?* https://www.dentalreview.news/dentistry/19-dental-health-hygiene/1990-how-much-sugar-in-your-child-s-cereal-bowl

[3] United States Department of Agriculture. (2019, October). *Calculating Sugar Limits for Breakfast Cereals in the Child and Adult Care Food Program*. https://www.fns.usda.gov/tn/cacfp/calculating-sugar-limits-breakfast-cereals

[4] Shelke, K. (2024, February 15). *Reducing Sugar in Kids' Cereals*. Prepared Foods. https://www.preparedfoods.com/articles/128959-reducing-sugar-in-kids-cereals

We are confident that there is a market with strong potential for an appealing, healthier kids breakfast cereal. You are tasked with formulating and designing a cereal incorporating more wholesome ingredients and less added sugar. The target market of this product will likely desire a formulation with fewer artificial ingredients and components that are less refined. While the target market's desires must be considered, you should also create a formulation with ingredients that are palatable for children of varying ages. The serving size of this product will be 1 ¼ cups (60g) and a standard box of this product will contain 8 servings. As with other cereals, the information panel for this product must also include a column of nutrition information for a serving of this product with ½ cup of fat free (skim) milk. The nutritional values of ½ cup skim milk are provided on the ingredients list.

Your formulation should be comprised of the following:

- One cereal base (30 grams)
- Two dried fruits (10 grams each)
- One added sweetener (6 grams)
- One added flavor (4 grams)

You have four tasks to complete:

1. Design a Principal Display Panel (PDP,) with all legal requirements, and marketing design. This will be on a piece of 8.5 x 11 paper. You may use any of the supplies in the box provided for you.

2. Sketch on a separate piece of paper where the Information Panel is, in relation to the PDP.

3. Design an Information Panel using the piece of paper that has the blank Nutrition Facts panel provided. Include all legally required parts of the Information Panel. **Round all final calculated grams and percentage values to the nearest whole number (ex: 4.7 grams rounds to 5 grams, 5.3% rounds to 5%, etc.). If a nutritional component would round to 0 using this rule, signify on the nutrition label with "< 1" in the appropriate unit.**

4. Answer the questions at the end of this document.

Once completed, place ALL paperwork and scratch paper in the provided envelope and turn in to the judges table. Additionally, place all markers and pencils back in their packaging, and place other equipment and unused material in the plastic bin at your table.

Good Luck!

Information Panel

Nutrition Facts

_____ servings per container

Serving size _____ (____g)

	Cereal	with 1/2 cup skim milk
Calories		
	% DV*	**% DV***
Total Fat		
Saturated Fat		
Trans Fat		
Cholesterol		
Sodium		
Total Carb.		
Dietary Fiber		
Total Sugars		
Incl. Added Sugars		
Protein		
Vitamin D		
Calcium		
Iron		
Potassium		

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

PREVIEW
www.nutritionfacts-labels.com

INGREDIENTS:

CONTAINS:

DISTRIBUTED BY:

Principal Display Panel (PDP)

Package Sketch

Written Response Questions

1. Justify your choice of ingredients. How does your choice of ingredients reflect your target market?

2. What safety issue(s) may be associated with your selections?

3. What quality issue(s) may be associated with your selections?

4. In detail, explain how this product will be packaged.

5. Explain the distribution process for this product.

6. Who is your target market?

7. What protocol will be in place to ensure you are producing a safe product?

8. When receiving ingredients from suppliers, what will be done to ensure that safe, high quality ingredients will be used in your product?

9. Where will this product be displayed in a store?

10. Describe the plant and process for manufacturing this product.

Scratch Paper

Scratch Paper

Scratch Paper

Scratch Paper