**Subject area/course**: Math/Science

**Grade level/band**: 7

**Task source**: Summit Public Schools

**Creating the Ultimate Health Smoothie**

**TEACHER'S GUIDE**

1. **Task overview**:

Students will create the ultimate health smoothie, made of real foods, that has the right proportion of all the major nutrients needed to live a healthy life. Then, students will design and write the recipe others should follow to make the health smoothie.

1. **Aligned standards:**
2. **Primary Common Core State Standards**

CCSS.Math.Content.7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems.

CCSS.Math.Content.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

CCSS.Math.Content.7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them.

CCSS.Math.Practice.MP2 Reason abstractly and quantitatively.

CCSS.Math.Practice.MP5 Use appropriate tools strategically.

CCSS.Math.Practice.MP6 Attend to precision.

1. **Critical Abilities**

Communication in Many Forms:Use oral and written communication skills to learn, evaluate, and express ideas for a range of tasks, purposes, and audiences. Develop and strengthen writing as needed by planning, revising, editing, and rewriting while considering the audience.

Use of Technology:Present information, findings, and supporting evidence, making strategic use of digital media and visual displays to enhance understanding. Use technology, including the Internet, to research, produce, publish, and update individual or shared products in response to ongoing feedback, including new arguments or information.

Interpersonal Interaction and Collaboration:Develop a range of interpersonal skills, including the ability to work with others, to participate effectively in a range of conversations and collaborations.

Modeling, Design, and Problem Solving**:** Use quantitative reasoning to solve problems arising in everyday life, society, and the workplace, e.g., to plan a school event or analyze a problem in the community, to solve a design problem or to examine relationships among quantities of interest. Plan solution pathways, monitoring and evaluating progress and changing course if necessary, and find relevant external resources, such as experimental and modeling tools, to solve problems. Interpret and evaluate results in the context of the situation and improve the model or design as needed.

1. **Time/schedule requirements:**

This task will take approximately 2-3 weeks to complete.

1. **Materials/resources:**

* Internet access
* Students will need ingredients for their sample smoothies.
* PowerPoints, handouts, and readings are separated by day and accompany this task and help provide structure for guiding students through the task.

1. **Prior knowledge:**

None listed.

1. **Connection to curriculum:**

None listed.

1. **Teacher instructions:**

DAY 1

* Launch Activity using *Launch Health Smoothies PowerPoint* to introduce the task.
  + Hook students with current Men's Health Issue about Ultimate Smoothies (<http://contentviewer.adobe.com/s/Men's%20Health/a7a0b9ce5c64438389e43600ae76ae7d/Men's%20Health%20September%202014/2150_MH0914_DEPTNutrition.html>)
  + Introduce students to project
  + Go over necessary project time expectations, etc.
* First Activity - Point of View (POV) Workshop: “Before you endeavor to create the ultimate health smoothie, it’s important to understand that many people have different points of view about what is healthy.”
  + Introduce first cognitive skill, POV, and show students the rubric.
  + Students read Men’s Health article and practice identifying POV using the *Nutrition Readings Purpose Worksheet*.
  + Students identify their own point of view about health in reflection questions
* Introduce Nutrition Information Tracker (teachers will have to save a copy of this Google doc): <https://docs.google.com/document/d/1-b3Kx-3BgCdg_VzpNZ0p27S7bknad4ORaoDpFxkjpDM/edit>

DAY 2

* Point of View Workshop II:
  + Students read Juices and Smoothies May Not Be As Healthy as We Think (<https://newsela.com/articles/juice-danger/id/726/>)
  + Have students record their thoughts in the *Nutrition Readings Purpose Worksheet*.
  + Then compare this article with the first one they read.
* Discussion of Nutrition - “Now that you have read at least 2 articles about health, it’s time to discuss your new POV. What do you think makes for a healthy diet?” [Teacher explains how we will be looking for active listening in discussion. Passes out *Discussion Prep Page Handout* and *Recorder Sheet* for team to record group discussions]
* Questions for discussion (groups of 4 w/ roles: facilitator, recorder, materials manager, and harmonizer):
  + How healthy are you currently? Why?
  + What do you need to have a healthy diet?
  + To what extent are smoothies healthy?
  + If you were to make a health smoothie, what should be included and why?

DAY 3

* POV Quiz: <https://docs.google.com/forms/d/1yp5w4QurNBWecNVwTKqkM9a1AST52COCbQYJJskspWg/viewform>
  + Student Discussion
  + Student Reflection
* Food Data Analysis
* Look at foods eaten and Input Nutrition Information into Tracker
* Figure out amounts of vitamins and minerals eaten based on the foods with Fitbit or MyFitnessPal <http://www.fitbit.com/foods/categories/Entrees/12>
* Modeling Cognitive Skill Workshop Part I: Graphs. Make table and graph of total intake of nutrients from 3 meals on Google excel.

DAY 4 - Person Food Graphs and Calculations

* Compare their graph and totals to daily recommended nutrients. Calculate the proportion of recommend value they ate (by hand).
* Calculate the proportion of one of their meals to recommended amount.
* Math Workshop as needed

DAY 5 - Checking Calculations and Tables Workshop on Precision in math (i.e., checking your answer and writing answers fully)

* Students finish handwritten calculations and Google Excel graphs
* Students complete ratio calculations (ex: strawberries/meal, calories/day)

Mini Discussion (groups of 4 w/ roles):

*Explain parameters of restaurant’s smoothie.*

* What foods do you believe will need to be in a health smoothie to make it both healthy and tasty?
* What were you lacking in your diet that your smoothie could make up for?

DAY 6

Final Group of 4 Discussion:

* Finalize name of smoothies and ingredients (groups of 4 w/ roles)

Precision Workshop II Precise for a Purpose: Fitting a design with the stated parameters

* 32 ounces or 720 mL
* At least 20% of each daily recommended value of the nutrients. You have one freebee that can be less.
* Must come from whole foods (No vitamin supplements)
* At least 5 different ingredients
* You may use computer calculator to check answers

DAY 7 - Workday

DAY 8 - Modeling Workshop using

* Visual representation of proportions using the *Modeling Your Smoothie PowerPoint*
* Students work on their model of smoothie ingredients and nutrients

DAY 9 - Peer review and revision

DAY 10 - Final brochure due (see recommended guidelines in Day 10 materials folder)

1. **Student support:**

See SPED resources folder that provides condensed readings and materials.

1. **Extensions or variations:**

Possible extensions include:

* Students could compare their smoothie to a Jamba Juice smoothie: <http://tinyurl.com/denalijamba>
* Students could write an article about their smoothie and argue that while some critics say smoothies aren’t healthy, theirs is.
* Students could create a commercial to advertise their smoothie.

1. **Scoring:**

Student work can be scored using the Summit Public Schools Ultimate Health Smoothie Rubric.