

Protein Please

(9th – 12th Grade Rotational Version)

Morning Learning Stations for Students –

STATION 1: Explore IQhub & Drive Tractor Simulator (Needs 2 Adults)

- (60 min) IQhub Scavenger Hunt (2 students at a time go drive tractor simulator)

STATION 2: Proteins in Cheese (Needs 2 Adults)

- (10 min) Learn about the importance of milk and cheese
 - o Learn properties of milk (water, fat, protein, carbohydrates, minerals/ other)
 - o Examine how cheese is a nutritious food
- (40 min) Cheese Making
 - o Understand the properties of acidity and pH
 - o Explore how chemical reactions can lead to healthy products
 - o Understand how enzymes act as biological catalysts in dairy industry
- (10 min) Taste Test and Wrap-Up
 - o Explore the difference of homemade cheese versus cheese from store
 - o Discuss some reasons why

LUNCH BREAK

Afternoon Learning Stations for Students –

STATION 2: Importance of Amino Acids and Proteins (Needs 2 Adults)

- (15 min) Amino Acids and Proteins
 - o Understand what is an amino acid and what is a protein
 - o Explore the role of amino acids and proteins in our body
 - o Discover the importance of the protein and dairy food groups
- (15 min) Protein Food Cards Activity
 - o Learn how amino acids are the “building blocks” for proteins
 - o Understand the difference between complete proteins and incomplete proteins
- (15 min) Protein in Your Life
 - o Understand that protein plays a large role in life
 - o Analyze the amount of protein in your life
 - o Explore ways to have an adequate amount of protein in a diet

STATION 4: Future of Food Science (Needs 2 Adults)

- (15 min) Importance of Food Science
 - o Discuss what is going on in the Food Science Industry
 - o Explore ways that food scientists increase their senses to appeal to consumers
 - o Learn how strengthen your palate and be able to identify the four main tastes
- (15 min) Triangle Test Activity
 - o Discuss the importance of triangle tests in the food industry
 - o Examine how food scientists create products to outperform their competitors
 - o Evaluate if you can tell the difference in products

- (15 min) Product Development
 - o Discuss the importance of bringing new products to consumers
 - o Explore the process of product development
 - o Present your new product to the group

Michigan Learning Standards for today's IQhub visit –

- Science Standards:
 - HS-PS1-2 Simple Chemical Reactions
 - HS-PS1-3 Electrical Forces and Bulk Scale Structure
 - HS-PS1-5 Collision Theory and Rates of Reaction
 - HS-PS1-6 Increased Products Design Solution
- Math Standards:
 - HS-S-MD Using Probability to Make Decisions
- Career Preparation for 9th – 10th Grade:
 - Target 3: Build Knowledge about Careers, Postsecondary, and Employment Opportunities
 - Soft skills/work ethics
- Career Preparation for 11th – 12th Grade:
 - Target 3: Continue to Build Knowledge about Careers, Education, and Employment Opportunities
 - Business tours
 - Soft skills/work ethics
 - Have local employers visit students to discuss top employability skills

Possible Careers Discussed in today's IQhub visit –

- Farmer
- Food Scientist
- Nutritionist
- Chemist
- Engineer
- Agronomist
- Environmentalist
- Ecologist
- Entrepreneur