Unit 02: Diet and Health

Content Area: **Template**
Course(s):
Time Period: **Full Year**
Length: **FY**
Status: **Published**

Standards Alignment

New Jersey Student Learning Standards

Practice 4. Analyzing and interpreting data
Analyzing data in 9–12 builds on K–8 experiences and progresses to introducing more detailed statistical analysis, the comparison of data sets for consistency, and the use of models to generate and analyze data.

Consider limitations of data analysis (e.g., measurement error, sample selection) when analyzing and interpreting data.

Practice 8. Obtaining, evaluating, and communicating information
Obtaining, evaluating, and communicating information in 9–12 builds on K–8 experiences and progresses to evaluating the validity and reliability of the claims, methods, and designs.

Critically read scientific literature adapted for classroom use to determine the central ideas or conclusions and/or to obtain scientific and/or technical information to summarize complex evidence, concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

Compare, integrate and evaluate sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a scientific question or solve a problem.

Gather, read, and evaluate scientific and/or technical information from multiple authoritative sources, assessing the evidence and usefulness of each source.

HPE.2.1.12	All students will acquire health promotion concepts and skills to support a healthy, active lifestyle.
HPE.2.1.12.A	Personal Growth and Development
HPE.2.1.12.A.1	Analyze the role of personal responsibility in maintaining and enhancing personal, family, community, and global wellness.
HPE.2.1.12.A.2	Debate the social and ethical implications of the availability and use of technology and medical advances to support wellness.
HPE.2.1.12.B	Nutrition
HPE.2.1.12.B.1	Determine the relationship of nutrition and physical activity to weight loss, weight gain, and weight maintenance.
HPE.2.1.12.B.2	Compare and contrast the dietary trends and eating habits of adolescents and young adults in the United States and other countries.
HPE.2.1.12.B.3	Analyze the unique contributions of each nutrient class (fats, carbohydrates, protein, water, vitamins, and minerals) to one's health.
HPE.2.1.12.C	Diseases and Health Conditions
HPE.2.1.12.C.1	Determine diseases and health conditions that may occur during one's lifespan and identify prevention and treatment strategies.
HPE.2.1.12.C.2	Develop strategies that will impact local, state, national, and international public health

	efforts to prevent and control diseases and health conditions.

Integration of Career Readiness, Life Literacies and Key Skills

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP3	Attend to personal health and financial well-being.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP7	Employ valid and reliable research strategies.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP9	Model integrity, ethical leadership and effective management.
CRP.K-12.CRP10	Plan education and career paths aligned to personal goals.
CRP.K-12.CRP11	Use technology to enhance productivity.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.

Technology / Integration of Computer Science and Design Thinking

TECH.8.1.12	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.12.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
TECH.8.1.12.A.2	Produce and edit a multi-page digital document for a commercial or professional audience and present it to peers and/or professionals in that related area for review.

Interdisciplinary Connections: NJSLS for ELA, Social Studies, Science and/or Math Section

	Key Ideas and Details
LA.K-12.NJSLSA.R1	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
LA.K-12.NJSLSA.R2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
LA.K-12.NJSLSA.R3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
	Integration of Knowledge and Ideas
LA.K-12.NJSLSA.R7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
LA.RI.11-12	Reading Informational Text

LA.RI.11-12.1	Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of what the text says explicitly as well as inferentially, including determining where the text leaves matters uncertain.
LA.K-12.NJSLSA.W	Writing
LA.RI.11-12.2	Determine two or more central ideas of a text, and analyze their development and how they interact to provide a complex analysis; provide an objective summary of the text.
	Text Types and Purposes
LA.RI.11-12.3	Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
LA.K-12.NJSLSA.W1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
LA.K-12.NJSLSA.W2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
LA.RI.11-12.7	Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.
LA.K-12.NJSLSA.W9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
LA.W.11-12.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
LA.W.11-12.1.C	Use transitions (e.g., words, phrases, clauses) to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
LA.W.11-12.1.E	Provide a concluding paragraph or section that supports the argument presented (e.g., articulating implications or the significance of the topic).
LA.W.11-12.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
LA.W.11-12.2.A	Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
LA.W.11-12.2.B	Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
LA.W.11-12.2.F	Provide a concluding paragraph or section that supports the argument presented (e.g., articulating implications or the significance of the topic).
LA.W.11-12.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.

Integration of Diversity, Equity and Inclusion; Climate Change; Informational and Media LiteracyNew Section

see Crosswalks

21st Century Life and Careers

Stage I: Desired Results

Transfer/Overview/Rationale

Transfer / Overview / Rationale
Unit Rationale The purpose of this unit… The purpose of this unit is to analyze the nutritional content of food and learn how to make healthy choices for both diet and health

Meaning

Essential Questions

Essential Questions

- Why are proteins, carbohydrates and fats an important part of a healthy diet?
- What are the dangers of bad eating habits?
- How are fruits and vegetables an essential part of a healthy lifestyle?

Enduring Understanding/Indicators of Understanding

Enduring Understanding/Indicators of Understanding

Students will understand that:

- Proteins, carbohydrates and fats are essential nutrients that each serve a specific role in the functioning of the human body

- An unhealthy diet is one of the major risk factors for a range of chronic diseases, including cardiovascular diseases, cancer, diabetes and other conditions linked to obesity
- Vitamins and nutrients found in fruits and vegetables provide nutrients vital for health and maintenance of your body

Acquisition (Student Learning Objectives)

Knowledge

Knowledge

Students will know…

- The key to eating well is to enjoy a variety of nutritious foods from each of the Five Food Groups
- Foods are grouped together because they provide similar amounts of the key nutrients of that food group
- To meet the nutrient requirements essential for good health, you need to eat a variety from each of the five food groups daily, in the recommended amounts
- Five food groups: Vegetables and legumes/beans; Fruit; Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties; Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans; Milk, yoghurt cheese and/or alternatives, mostly reduced fat
- The amount of food servings of each food group may be influenced by different ages, life stages and gender
- The average American consumes too much saturated fat, added salt, added sugars and alcohol; Decreasing the intake of these substances can help us manage our weight better and reduce our risk of chronic diseases like heart disease, stroke, Type 2 diabetes, some cancers and chronic kidney disease
- Carbohydrates are most abundantly found in sugars, fibers, and starches
- Carbohydrates are an important part of a healthy diet, however not all carbohydrates are nutritious
- Good carbs versus bad carbs
- Unused carbohydrates are stored in the body as fat; insufficient amounts of carbohydrates will result in the body using its protein storage for fuel
- Fiber, which is found in carbohydrates, helps to promote healthy bowel movements and decrease the risk of chronic diseases such as coronary heart disease and diabetes
- Fat are an essential part of our diet and is important for good health
- Saturated fats can come from animal based products such as dairy foods like butter, cream, full fat milk and cheese. Red meats, manufactured and packaged foods such as chips, cakes and fried foods can also contain large amounts of saturated fats
- Unsaturated fats help reduce the risk of heart disease and lower cholesterol levels
- Polyunsaturated fats contain omega-3 fats which are found in fish, especially oily fish and omega-6 fats which are found in some oils such as safflower and soybean oil, along with some nuts, including brazil nuts
- Monounsaturated fats can be found in olive and canola oil, avocados and some nuts, such as cashews and almonds
- It is great for health to replace saturated and trans fats with mono and polyunsaturated fats
- Eating trans fats increases the levels of ‘bad’ cholesterol and decreases the levels of ‘good’ cholesterol in the body which is a major risk factor for heart disease
- Trans fats are found in many packaged foods and also in butter and some margarines
- Cholesterol is a type of fat found in food, but also in our blood
- Cholesterol can be classified as either "bad" and "good." LDL cholesterol is the bad kind. HDL is the good kind. Too much of the bad kind — or not enough of the good kind — increases the chances that cholesterol will start to slowly build up in the inner walls of arteries that feed the heart and brain.
- Cholesterol is a waxy substance. It’s not “bad”: your body needs it to build cells. But too much can be a problem
- Together with other substances, cholesterol can form a thick, hard deposit that can narrow the arteries and make them less flexible. This condition is known as atherosclerosis

- If a clot forms and blocks a narrowed artery, a heart attack or stroke can result
- High cholesterol is one of the major controllable risk factors for coronary heart disease, heart attack and stroke; risk factors such as smoking, high blood pressure or diabetes can increase chances
- HDL cholesterol is “good” cholesterol, high levels are better
- LDL cholesterol is called “bad” cholesterol, it causes high build up of fatty substances in the arteries (atherosclerosis)
- Triglycerides are the most common type of fat in the body; they store excess energy from your diet
- The American Heart Association recommends all adults age 20 or older have their cholesterol, and other traditional risk factors, checked every four to six years
- All foods made from meat, poultry, seafood, beans and peas, eggs, processed soy products, nuts, and seeds are considered part of the Protein Foods Group
- Seafood is an excellent way to get protein. It contains a range of nutrients, notably the omega-3 fatty acids, EPA and DHA. Eating about 8 ounces per week of a variety of seafood contributes to the prevention of heart disease.
- Many teenage girls and women in their child-bearing years have iron-deficiency anemia. They should eat proteins high in heme-iron (meats) or eat other non-heme iron containing foods along with a food rich in vitamin C, which can improve absorption of non-heme iron
- B vitamins found in protein serve a variety of functions in the body. They help the body release energy, play a vital role in the function of the nervous system, aid in the formation of red blood cells, and help build tissues. Iron found in protein is used to carry oxygen in the blood
- Protein foods that contain all essential amino acids are called complete proteins, foods that include complete proteins include meat and dairy products, quinoa, hemp seeds, chia seeds and soy
- Greek yogurt undergoes a multiple-strain process, resulting in a product that is thicker, more dense, and double the protein
- Evidence-based reviews indicate that certain strains of probiotics contribute to the microbial balance of the gastrointestinal tract—supporting the immune system and reducing inflammation in the gut. Health conditions that can benefit from probiotics therapy include diarrhea, gastroenteritis, irritable bowel syndrome, inflammatory bowel disease and cancer.
- Junk food is term for food that has little nutritional value. This kind of food often has high amounts of fat, sugar, salt, and calories
- The history and effects of junk food - How and why junk food originated
- Effects of junk food on the brain/Addiction
- How the food companies use marketing and propaganda techniques to advertise to children
- Benefits of vitamins and nutrients found in fruits and vegetables
- Importance of washing fruits and vegetables

Skills

Skills

Student will be skilled at …

- Examine the five food groups and provide examples of benefits of each group
- Differentiate how many servings of each food group should be consumed each day and calculate total amount of calories needed to maintain a healthy lifestyle
- Identify the correlation between a diet high in saturated fat, trans fat, sugar and salt and causes in heart disease, stroke, diabetes, kidney disease and some cancers
- Describe the benefits of carbohydrates in a balanced diet
- Compare and contrast good complex carbohydrates and bad simple sugars
- Analyze the importance of fiber found in some carbohydrates
- Describe the benefits of fats in a balanced diet
- Compare and contrast saturated and unsaturated fats
- Identify the connection between trans fats and heart disease and/or stroke
- Analyze the importance of good HDL cholesterol in a healthy diet and the dangers of high levels of LDL cholesterol
- Explain how a unhealthy diet can cause a clot in an artery, leading to heart attack or stroke
- Describe the importance of getting lab work to check cholesterol levels during regular yearly check-ups

- Describe the benefits of proteins in a balanced diet
- Explain the connection between amino acids and proteins, and how proteins must be consumed for proper body functioning
- Identify foods that contain high amounts of proteins
- Differentiate between regular and greek yogurt and discuss benefits of greek yogurt, including less sugar, more protein and probiotics from lactic acid fermentation
- Describe benefits of probiotics
- Discuss what is meant by the term "junk food" and how junk food originated
- Analyze how food companies market junk food to attract children and misinform consumers
- Examine the effects of junk food and how processed junk food can affect the brain
- Classify fruits and vegetables by their nutrients and identify the benefits of each nutrient
- Discuss the importance of properly washing fruits and vegetables and possible consequences of not cleaning them before consumption

Stage 3: Learning Plan

Resource and Mentor Texts

Resources and Mentor Texts

- **Powerpoint presentations**
- **Scienceworld Magazines**
- **Nutrition Magazines**
- **Recipe Magazines**
- **Articles related to topics**
- **Youtube videos**
- **Materials for labs**
- **Journals**
- **Science Buddies https://www.sciencebuddies.org/teacher-resources/lesson-plans/modeling_blood_flow#teacherprep**
- **Science Buddies https://www.sciencebuddies.org/science-fair-projects/project-ideas/FoodSci_p077/cooking-food-science/how-much-fat-is-in-your-food**
- **Scientific American https://www.quickanddirtytips.com/health-fitness/healthy-eating/ask-the-diva/how-fake-nutrition-news-hurts-us-all?utm_source=sciam&utm_campaign=sciam**

Formative Assessment Strategies

Formative Assessment Strategies

- Nutrition and Health Portfolio
- Food Quiz - https://www.choosemyplate.gov/quiz
- Healthy Heart Quiz- http://www.heart.org/HEARTORG/Conditions/Cholesterol/AboutCholesterol/Cholesterol-IQ-

Quiz_UCM_305563_Article.jsp#.W0P25qdKjI

- Nutrition Quiz
- Vitamin Chart - benefits of food
- Graphic Organizers
- Quick Thoughts
- Exit Slips
- Kahoot
- Bingo
- White Board Participation
- Homework
- Teacher Check
- Thumbs up/thumbs down
- Create a Test/Take a Test
- Whole class questioning and answering

Learning Activities/Unit of Study

Learning Activities/Unit of Study

- Nutrition and Health Portfolio - Students will build a nutrition and health portfolio throughout the entire school year. Students will continuously add information
- RACE prompt: Cereal for Breakfast? https://www.parents.com/recipes/scoop-on-food/cereal-for-breakfast-a-good-or-bad-idea-for-kids/
- RACE prompt: Sports Drinks for non-athletes? https://www.insidescience.org/news/sports-drinks-non-sporty-cause-weight-gain
- Create a Healthy Recipe using your favorite food
- Track nutrition for a day - keep a log of amount of calories, carbohydrates, saturated fat, sodium and protein
- The Sneaky Chef - find your favorite unhealthy meal and create an alternative recipe to cook it in a healthier way
- Effects of Unhealthy Eating Habits: Student powerpoint presentations
- Student Lab: Modeling Blood Flow
- Thinking Critically: Fake Nutrition News Article Read and Respond
- Student Lab: Extracting Fats from Various Brands of Potato Chips

Modifications and/or Accommodations

Suggested Modifications (ELL, Sp. Ed, GIfted, At-risk of Failure)

English Language Learners

Native language support: The teacher provides auditory or written content to students in their native language.

Adjusted Speech: The teacher changes speech patterns to increase student comprehension. This could include facing the students, paraphrasing, clearly indicating the most important ideas, and speaking more slowly.

Visuals: The teacher uses graphics, pictures, visuals, and manipulatives. This helps ELL students better understand and comprehend the subjects at hand.

Front-Loading Vocabulary: The teacher front loads vocabulary. This means providing students with a list of important vocabulary words they will need to know for a book, lesson, etc. prior to the lesson being taught. Including pictures to go with the vocabulary words is also very beneficial for the students.

Special Education Students

Chunking: The teacher presents information in a way that makes it easy for students to understand and remember. Chunking is based on the presumption that our working memory is easily overloaded by excessive detail. The best way to deliver information is to organize it into meaningful units. Because students with special needs get overloaded easily, chunking is an effective strategy to use with them.

Checking for Understanding: It is important to constantly check for understanding, especially for students who have accommodations. Teachers want to make sure students understand the concepts being covered in a way that makes sense to them.

Extra time: The teacher provides students with special needs extra time to complete work or answer questions. It is important to give students enough time to process their thoughts.

Oral Reading: The teacher will read work orally to students. Class work such as tests and literature circles may need to be read aloud to the student.

Timers: The teacher will use timers as an instructional tool. The use of timers is beneficial for students who have trouble completing tasks. Timers can be helpful so the student is aware of how much time they have to complete an assignment.

Students with 504 Plans

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Gifted & Talented Strategies

Extensions/Enrichments: Teachers will provide gifted and talented students with extension/enrichment projects. Students will be challenged to further their understanding, to apply acquired knowledge, and/or to produce something in reference to acquired knowledge.

Modify/Change Activities: Teachers will monitor and modify activities to accommodate those students who need to be challenged further. Additional reading, problem-solving, writing, or project work is necessary for those students who are ready to move on at a rate more accelerated than their peers. In this way, G & T students are provided the same opportunity for support as special needs students.

Students at Risk of School Failure

Directions or Instructions: Make sure directions and/or instructions are given in limited numbers. Give directions/instructions verbally and in simple written format. Ask students to repeat the instructions or directions to ensure understanding occurs. Check back with the student to ensure he/she hasn't forgotten.

Peer Support: Peers can help build confidence in other students by assisting in peer learning. Many teachers use the 'ask 3 before me' approach. This is fine, however, a student at risk may have to have a specific student or two to ask. Set this up for the student so he/she knows who to ask for clarification before going to you.

Alternate or Modified Assignments: Always ask yourself, "How can I modify this assignment to ensure the students at risk are able to complete it?" Sometimes you'll simplify the task, reduce the length of the assignment or allow for a different mode of delivery. For instance, many students may hand something in, the at-risk student may jot notes and give you the information verbally. Or, it just may be that you will need to assign an alternate assignment.

Increase One to One Time: When other students are working, always touch base with your students at risk and find out if they're on track or needing some additional support. A few minutes here and there will go a long way to intervene as the need presents itself.

Contracts: It helps to have a working contract between you and your students at risk. This helps prioritize the tasks that need to be done and ensure completion happens. Each day write down what needs to be completed, as the tasks are done, provide a checkmark or happy face. The goal of using contracts is to eventually have the student come to you for completion sign-offs.

Hands On: As much as possible, think in concrete terms and provide hands-on tasks. This means a child doing math may require a calculator or counters. The child may need to tape record comprehension activities instead of writing them. A child may have to listen to a story being read instead of reading it him/herself.

Tests/Assessments: Tests can be done orally if need be. Break tests down in smaller increments by having a portion of the test in the morning, another portion after lunch and the final part the next day.

Seating: Seat students near a helping peer or with quick access to the teacher. Those with hearing

or sight issues need to be close to the instruction which often means near the front.