

THE SCIENCE OF ENERGY BALANCE: CALORIE INTAKE AND PHYSICAL ACTIVITY		
Maryland Voluntary State Curriculum – Science – Grades 6 - 8		
Lesson	Standard	Description
1, 2, 3, 4	1.A.1	Design and carry out simple investigations and formulate appropriate conclusions based on data obtained.
3	1.A.1.a	Explain that scientists differ greatly in what phenomena they study and how they go about their work.
1, 2, 3, 4	1.A.1.b	Develop the ability to clarify questions and direct them toward objects and phenomena that can be described, explained, or predicted by scientific investigations.
1, 2, 3, 4	1.A.1.c	Explain and provide examples that hypotheses are valuable, even if they turn out not to be true, if they lead to fruitful investigations.
1, 2, 3, 4	1.A.1.d	Locate information in reference books, back issues of newspapers, magazines and compact disks, and computer databases.
1, 2, 3, 4	1.A.1.e	Explain that if more than one variable changes at the same time in an investigation, the outcome of the investigation may not be clearly attributable to any one of the variables.
1, 2, 3, 4	1.A.1.h	Use mathematics to interpret and communicate data. Determine what units to use, express findings in several forms, decide what degree of precision is adequate, and estimate probabilities of outcomes.
1, 2, 3, 4	1.A.1.i	Use ratios and proportions in appropriate problems.
1, 2, 3, 4	1.B.1	Review data from a simple experiment, summarize the data, and construct a logical argument about the cause-and-effect relationships in the experiment.
1, 2, 3, 4	1.C.1.a	Organize information in simple tables and graphs and identify relationships they reveal.
All lessons	1.C.1.b	Read simple tables and graphs produced by others and describe in words what they show.
3, 4	1.C.1.c	Give examples of how scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way.
2, 4	1.C.1.e	Explain how different models can be used to represent the same thing. What kind of a model to use and how complex it should be depend on its purpose. Choosing a useful model is one of the instances in which intuition and creativity come into play in science, mathematics, and engineering.
All lessons	1.C.1.f	Participate in group discussions on scientific topics by restating or summarizing accurately what others have said, asking for clarification or elaboration, and expressing alternative positions.
2, 4	1.D.1.a	Explain that the kind of model to use and how complex it should be depends on its purpose and that it is possible to have different models used to represent the same thing.

MARYLAND ALIGNMENT FOR NIH SUPPLEMENT THE SCIENCE OF ENERGY BALANCE: CALORIE INTAKE AND PHYSICAL ACTIVITY

2, 4	1.D.1.b	Explain, using examples, that models are often used to think about processes that happen too slowly, too quickly, or on too small a scale to observe directly, or that are too vast to be changed deliberately, or that are potentially dangerous.
2, 4	1.D.1.c	Explain that models may sometimes mislead by suggesting characteristics that are not really shared with what is being modeled.
1	3.B.1.b	Based on data from microscopic studies, readings and designed investigations, cite evidence illustrating that the cell- tissue-organ systems of multicellular organisms (plant and animal) carry out the life functions of those organisms: extracting energy from food, getting rid of wastes, and making new materials. (Grade 7)
3, 4	3.C.1.e	Identify evidence to support the idea that there is greater diversity among offspring of organisms that reproduce sexually than among those that reproduce asexually. (Grade 7)
3, 4	3.D.1.a	Cite examples and describe that small differences between parents and offspring can accumulate (through selective breeding) in successive generations so that descendants are very different from their ancestors. (Grade 6)
3, 4	3.D.1.b	Recognize that adaptations may include variations in structures, behaviors, or physiology, such as spiny leaves on a cactus, birdcalls, and antibiotic resistant bacteria. (Grade 8)
3, 4	3.D.1.c	Recognize and describe that adaptation involves the selection of natural variations in a population. (Grade 8)
1, 2, 3, 4	3.E.1.a	Cite evidence from research and observations that food provides molecules that serve as fuel and building materials for all organisms. (Grade 7)
1, 2, 3, 4	3.E.1.b	Cite evidence from research and observations that organisms that eat plants or animals break down what they have consumed (food) to produce the materials and energy they need to survive or stored for later use. (Grade 7)
1, 2	4.A.1.c	Cite evidence to explain that all living and non-living things can be broken down to a set of known elements. (Grade 7)
1, 2, 3	5.B.2.a	Identify and describe the various forms of energy that are transformed in order for systems (living and non-living) to operate. (Flashlight, pulleys, solar calculator, plant cells.) (Grade 8)
Maryland Voluntary State Curriculum – Mathematics – Grades 6 - 8		
Lesson	Standard	Description
2	1.B.1.a	Write an algebraic expression to represent unknown quantities.
2	1.B.2.a	Write equations and inequalities to represent relationships.
1, 2, 3	1.B.2.e	Apply given formulas to a problem-solving situation.
1, 2, 3, 4	1.C.2.a	Identify and describe the change represented in a table of values. (Grades 6 & 7)

MARYLAND ALIGNMENT FOR NIH SUPPLEMENT THE SCIENCE OF ENERGY BALANCE: CALORIE INTAKE AND PHYSICAL ACTIVITY

1, 2, 3	3.B.1.a	Select and use appropriate tools and units. (Grade 6)
1, 2, 3, 4	4.A.1	Organize and display data.
1, 2, 3, 4	6.A.1.a	Read, write, and represent whole numbers.
1, 2, 3	6.C.1.a	Add, subtract, multiply, and divide integers.
1, 2, 3, 4	6.C.3	Analyze ratios, proportions, or percents.
1, 2, 3	7.C.1.a	Use multiple representations to express concepts or solutions.
1, 2, 3, 4	7.C.1.b	Express mathematical ideas orally.
1, 2, 3, 4	7.C.1.c	Explain mathematically ideas in written form.
1, 2, 3, 4	7.C.1.e	Express solutions using pictorial, tabular, graphical, or algebraic methods.
1, 2, 3, 4	7.C.1.f	Explain solutions in written form.
1,2, 3	7.C.1.g	Ask questions about mathematical ideas or problems.
1, 2, 3	7.C.1.h	Give or use feedback to revise mathematical thinking.
1, 2, 3, 4	7.D.1.b	Identify mathematical concepts in relationship to other disciplines.
1, 2, 3, 4	7.D.1.c	Identify mathematical concepts in relationship to life.

Maryland Voluntary State Curriculum – Reading/English Language Arts – Grades 6 - 8

Lesson	Standard	Description
1, 2, 3, 4	1.D.1.a	Acquire new vocabulary through listening to, independently reading, and discussing a variety of literary and informational texts.
1, 2, 3, 4	1.D.1.b	Discuss words and word meanings daily as they are encountered in texts, instruction, and conversation.
1, 2, 3, 4	1.D.3.d	Use new vocabulary in speaking and writing to gain and extend content knowledge and clarify expression.
All lessons	1.E.3.a	Select and apply appropriate strategies to make meaning from text during reading
All lessons	1.E.4.b	Identify and explain information directly stated in the text.
All lessons	1.E.4.c	Draw inferences and/or conclusions and make generalizations.
All lessons	1.E.4.e	Summarize or paraphrase.
All lessons	1.E.4.f	Connect the text to prior knowledge or personal experience.
1, 2, 3, 4	4.A.1.a	Use a variety of self-selected prewriting strategies to generate, select, narrow, and develop ideas.

MARYLAND ALIGNMENT FOR NIH SUPPLEMENT THE SCIENCE OF ENERGY BALANCE: CALORIE INTAKE AND PHYSICAL ACTIVITY

1, 2, 3, 4	4.A.1.b	Select, organize, and develop ideas appropriate to topic, audience, and purpose.
1, 2, 3, 4	4.A.2.c	Compose to inform using relevant support and a variety of appropriate organizational structures and signal words within and between paragraphs.
3, 4, 5	4.A.2.d	Compose to persuade by supporting, modifying, or disagreeing with a position, using effective rhetorical strategies.
1, 2, 3, 4	4.A.4.a	Use precise word choice, formal to informal, based on audience, situation, or purpose.
All lessons	4.A.7.a	Identify, evaluate, and use sources of information on a self-selected and/or given topic.
All lessons	4.A.7.b	Use various information retrieval sources (traditional and/or electronic) to obtain information on a self-selected and/or given topic.
All lessons	6.A.1.a	Attend to the speaker. (Grade 6)
All lessons	6.A.1.b	Ask appropriate questions. (Grade 6)
All lessons	6.A.1.c	Contribute relevant comments. (Grade 6)
All lessons	6.A.1.d	Relate prior knowledge. (Grade 6)
All lessons	6.A.1.e	Use note taking to assist listening when appropriate. (Grade 6)
All lessons	6.A.1.f	Maintain visual contact with the speaker. (Grade 6)
All lessons	6.A.1.g	Maintain focus by identifying and managing barriers to listening. (Grade 6)
1, 2, 3, 4	7.A.1	Demonstrate appropriate organizational strategies and delivery techniques to plan for a variety of oral presentation purposes.

Maryland Voluntary State Curriculum – Health – Grades 6 - 8

Lesson	Standard	Description
1, 2, 3, 4	1.A.1	Recognize and apply effective communication skills.
3	1.A.2	Describe how emotions influence behavior.
2, 3, 4, 5	1.A.3	Identify components to promote personal well-being.
2, 3, 4, 5	1.A.3.a	Review components of personal well-being. (Grade 8)
2, 3, 4, 5	1.A.3.b	Explain the importance of assuming responsibilities of personal health behavior. (Grade 8)
5	1.A.3.d	Develop a plan that addresses personal strengths, needs, and health risks. (Grade 8)
1, 2, 3, 5	1.A.4.a	Predict how decisions regarding behavior have consequences for self and others. (Grade 6)

MARYLAND ALIGNMENT FOR NIH SUPPLEMENT THE SCIENCE OF ENERGY BALANCE: CALORIE INTAKE AND PHYSICAL ACTIVITY

All lessons	1.A.4.b	Analyze how decisions are influenced by external conditions including culture and the media. (Grade 6)
3, 5	3.A.1	Demonstrate the ability to access, describe, and evaluate health information, products, and services in order to become health literate consumers. (Grade 7 & 8)
2, 3, 5	3.A.2	Demonstrate the ability to identify and practice health-enhancing behaviors and reduce health risks to live safer, healthier lives. (Grades 6 & 8)
2, 3	6.A.1.a	Identify and define the six major nutrient groups: carbohydrate, protein, fat, vitamins, minerals, and water. (Grade 6)
2, 3, 4	6.A.1.c	List and explain how nutrient intake can contribute to being overweight or obese. (Grade 7)
2, 3, 4, 5	6.A.2	Explain the relationship among food intake, physical activity, and weight management. (Grades 6 & 7)
3	6.A.12.a	Distinguish among the three most common eating disorders: bulimia nervosa, anorexia nervosa, binge eating disorder. (Grade 7)
3, 4, 5	7.A.5.a	Identify risk factors that impact on non-communicable diseases: family history, lifestyle choices, and the environment. (Grade 8)
3, 4, 5	7.A.5.c	Identify the protective factors that decrease the occurrence of non-communicable diseases: regular medical check-ups, immunizations and screening, diet and weight management, exercise and rest, and environmental exposure. (Grade 8)