

**Crosswalk Between: Wisconsin’s Model Academic Standards for Science and
Wisconsin’s Model Academic Standards for Agricultural Education**

Instructions: Please fill out the third column illustrating how the proposed agriculture class meets the state standards in the first two columns. Information in the third column should include knowledge, concepts and skills, and a summery of the equivalent instructional time for the equivalent course. The first column lists Wisconsin’s Model Academic Standards for Science. Column two illustrates the various agriculture performance standards that have been crosswalked to the science performance standards in the first column.

A. SCIENCE CONNECTIONS	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	Biotechnology
<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will:</i>
A.12.1 Apply the underlying themes of science to develop defensible visions of the future	B.12.4 Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
A.12.2 Show how conflicting assumptions about science themes lead to different opinions and decisions about evolution, health, population, longevity, education, and use of resources, and show how these opinions and decisions have diverse effects on an individual, a community, and a country, both now and in the future	D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
A.12.3 Give examples that show how partial systems, models, and explanations are used to give quick and reasonable solutions that are accurate enough for basic needs	B.12.1 Apply knowledge of technology to identify and solve problems	Design DNA to demonstrate how translation and transcription work to make proteins necessary for the life of an organism – 4 days
A.12.4 Construct arguments that show how conflicting models and explanations of events can start with similar evidence	E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
A.12.5 Show how the ideas and themes of science can be used to make real-life decisions about careers, work places, life-styles, and use of resources	B.12.5 Explore various career opportunities in the food, fiber, and natural resources industries using available forms of technology D.12.4 Explore traditional and nontraditional food, fiber, and ornamental horticultural jobs/careers and identify the necessary skills, aptitudes, and abilities	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days

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A.12.6 Identify and replace inaccurate personal models and explanations of science-related phenomena using evidence learned or discovered	D.12.5 Describe how biotechnology can enhance food and fiber production E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
A.12.7 Re-examine the evidence and reasoning that led to conclusions drawn from investigations, using the science themes	E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact	Demonstrate how to use gel electrophoresis to identify matching DNA structures and changes in DNA – 2 days
B. NATURE OF SCIENCE	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	
<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will:</i>	
B.12.1 Show how cultures and individuals have contributed to the development of major ideas in the earth and space, life and environmental, and physical sciences	C.12.1 Demonstrate a working knowledge of leadership and leadership styles D.12.1 Describe the global utilization of Wisconsin’s food, fiber, and ornamental plant products D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries D.12.5 Describe how biotechnology can enhance food and fiber production	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days
B.12.2 Identify the cultural conditions that are usually present during great periods of discovery, scientific development, and invention	D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries D.12.5 Describe how biotechnology can enhance food and fiber production	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days Identify the major conditions during periods in history that involved some type of terrorist act – 2 days
B.12.3 Relate the major themes of science to human progress in understanding science and the world	D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days To prevent or respond to acts of terrorism within the agriscience industry – 8 days
B.12.4 Show how basic research and applied research contribute to new discoveries, inventions, and applications	B.12.4 Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology D.12.5 Describe how biotechnology can enhance food and fiber production	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days Describe how to complete an embryo transfer and how it

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	D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber	has affected society – 2 days
B.12.5 Explain how science is based on assumptions about the natural world and themes that describe the natural world	D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days
C. SCIENCE INQUIRY	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	
<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will:</i>	
C.12.1 When studying science content, ask questions suggested by current social issues, scientific literature, and observations of phenomena; build hypotheses that might answer some of these questions; design possible investigations; and describe results that might emerge from such investigations	B.12.1 Apply knowledge of technology to identify and solve problems C.12.2 Practice skills relating to communication, problem-solving, and decision-making through individual, group, and team processes	Develop a hypothesis about who has AIDS in the Aids Lab and support it with your knowledge of bioterrorism and then further test your hypothesis by back tracking through the class to determine the carrier – 2 days
C.12.2 Identify issues from an area of science study, write questions that could be investigated, review previous research on these questions, and design and conduct responsible and safe investigations to help answer the questions	B.12.1 Apply knowledge of technology to identify and solve problems C.12.2 Practice skills relating to communication, problem-solving, and decision-making through individual, group, and team processes D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources	Develop a hypothesis about who has AIDS in the Aids Lab and support it with your knowledge of bioterrorism and then further test your hypothesis by back tracking through the class to determine the carrier – 2 days
C.12.3 Evaluate the data collected during an investigation, critique the data-collection procedures and results, and suggest ways to make any needed improvements	B.12.1 Apply knowledge of technology to identify and solve problems B.12.3 Use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data C.12.2 Practice skills relating to communication, problem-solving, and decision-making	Develop a hypothesis about who has AIDS in the Aids Lab and support it with your knowledge of bioterrorism and then further test your hypothesis by back tracking through the class to determine the carrier – 2 days

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C.12.4 During investigations, choose the best data-collection procedures and materials, use them competently, and calculate the degree of precision of the resulting data	B.12.1 Apply knowledge of technology to identify and solve problems B.12.3 Use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data C.12.2 Practice skills relating to communication, problem-solving, and decision-making	Develop a hypothesis about who has AIDS in the Aids Lab and support it with your knowledge of bioterrorism and then further test your hypothesis by back tracking through the class to determine the carrier – 2 days
C.12.5 Use the explanations and models found in earth and space, life and environmental, and physical sciences to develop likely explanations for the results of their investigations	B.12.2 Select and communicate information in an appropriate format; e.g., oral, written, graphic, pictorial, multimedia C.12.2 Practice skills relating to communication, problem-solving, and decision-making	Develop a hypothesis about who has AIDS in the Aids Lab and support it with your knowledge of bioterrorism and then further test your hypothesis by back tracking through the class to determine the carrier – 2 days
C.12.6 Present the results of investigations to groups concerned with the issues, explaining the meaning and implications of the results, and answering questions in terms the audience can understand	B.12.2 Select and communicate information in an appropriate format; e.g., oral, written, graphic, pictorial, multimedia B.12.4 Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology C.12.2 Practice skills relating to communication, problem-solving, and decision-making	Design a presentation on different bioterrorist acts, what causes them, the symptoms, the treatments and how the government is protecting its citizens from such attacks – 5 days.
C.12.7 Evaluate articles and reports in the popular press, in scientific journals, on television, and on the Internet, using criteria related to accuracy, degree of error, sampling, treatment of data, and other standards of experimental design	B.12.2 Select and communicate information in an appropriate format; e.g., oral, written, graphic, pictorial, multimedia C.12.2 Practice skills relating to communication, problem-solving, and decision-making	Evaluate one article on biotechnology found in a magazine, newspaper, etc. using the rubric attached – 1 day
D. PHYSICAL SCIENCE	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	
<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will:</i>	
Structures of Atoms and Matter		
D.12.1 Describe atomic structure and the properties of atoms, molecules, and matter during physical and chemical interactions	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber	Demonstrate how to solve a crime “Who Stole the Cookies” using chemical analysis of food substances and techniques learned to solve crimes – 8 days
D.12.2 Explain the forces that hold the atom together and	No significant match found	

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illustrate how nuclear interactions change the atom		
D.12.3 Explain exchanges of energy in chemical interactions and exchange of mass and energy in atomic/nuclear reactions	E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber	Demonstrate how to solve a crime “Who Stole the Cookies” using chemical analysis of food substances and techniques learned to solve crimes – 8 days
Chemical Reactions		
D.12.4 Explain how substances, both simple and complex, interact with one another to produce new substances	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber	Demonstrate how to solve a crime “Who Stole the Cookies” using chemical analysis of food substances and techniques learned to solve crimes – 8 days
D.12.5 Identify patterns in chemical and physical properties and use them to predict likely chemical and physical changes and interactions	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber	Demonstrate how to solve a crime “Who Stole the Cookies” using chemical analysis of food substances and techniques learned to solve crimes – 8 days
D.12.6 Through investigations, identify the types of chemical interactions, including endothermic, exothermic, oxidation, photosynthesis, and acid/base reactions	D.12.5 Describe how biotechnology can enhance food and fiber production E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber	Demonstrate how to solve a crime “Who Stole the Cookies” using chemical analysis of food substances and techniques learned to solve crimes – 8 days
Motions and Forces		
D.12.7 Qualitatively and quantitatively analyze changes in the motion of objects and the forces that act on them and represent analytical data both algebraically and graphically	No significant match found	
D.12.8 Understand the forces of gravitation, the electromagnetic force, and the intermolecular force, and explain their impact on the universal system	No significant match found	
D.12.9 Describe models of light, heat, and sound and through investigations describe similarities and differences in the way these energy forms behave	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	Demonstrate how to run a gel electrophoresis and identify its use in the agricultural world – 2 days

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Conservation of Energy and the Increase in Disorder		
D.12.10 Using the science themes, illustrate the law of conservation of energy during chemical and nuclear reactions	No significant match found	
Interactions of Matter and Energy		
D.12.11 Using the science themes, explain common occurrences in the physical world	D.12.2 Discuss the impact that climate and water have on the food, fiber, and ornamental horticulture production cycles throughout the world D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources	Design a presentation on different bioterrorist acts, what causes them, the symptoms, the treatments and how the government is protecting its citizens from such attacks – 5 days.
D.12.12 Using the science themes and knowledge of chemical, physical, atomic and nuclear interactions, explain changes in materials, living things, the earth's features, and stars	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources	Design a presentation on different bioterrorist acts, what causes them, the symptoms, the treatments and how the government is protecting its citizens from such attacks – 5 days.
E. EARTH AND SPACE SCIENCE	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	
<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will::</i>	
Energy in the Earth System		
E.12.1 Using the science themes, distinguish between internal energies (decay of radioactive isotopes, gravity) and external energies (sun) in the earth's systems and show how these sources of energy have an impact on those systems	D.12.2 Discuss the impact that climate and water have on the food, fiber, and ornamental horticulture production cycles throughout the world. E 12.3 Explain the impact of climate change on existing agricultural systems	
Geochemical Cycles		
E.12.2 Analyze the geochemical and physical cycles of the earth and use them to describe movements of matter	D.12.2 Discuss the impact that climate and water have on the food, fiber, and ornamental horticulture production cycles throughout the world E 12.3 Explain the impact of climate change on existing agricultural systems	
The Origin and Evolution of the Earth System		
E.12.3: Using the science themes, describe theories of the origins and evolution of the universe and solar system,	E.12.2 Analyze benefits, costs, and consequences of land use	

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including the earth system as a part of the solar system, and relate these theories and their implications to geologic time on earth	E.12.3 Explain the impact of climate change on existing agricultural systems. E.12.4 Analyze practices used by farmers to reduce erosion and runoff to maintain soil fertility and productivity	
E.12.4 Analyze the benefits, costs, and limitations of past, present, and projected use of resources and technology and explain the consequences to the environment	B.12.4 Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology D.12.5 Describe how biotechnology can enhance food and fiber production. D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources. E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact. E.12.2 Analyze benefits, costs, and consequences of land use E.12.4 Analyze practices used by farmers to reduce erosion and runoff to maintain soil fertility and productivity E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment.	
The Origin and Evolution of the Universe		
E.12.5 Using the science themes, understand that the origin of the universe is not completely understood, but that there are current ideas in science that attempt to explain its origin	No significant match	
F. LIFE AND ENVIRONMENTAL SCIENCE	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	
<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will:</i>	
The Cell		
F.12.1 Evaluate the normal structures and the general and special functions of cells in single-celled and multiple-celled organisms	D.12.5 Describe how biotechnology can enhance food and fiber production. D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have	Identify and describe the major parts of a cell and their function – 4 days

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	on the food and fiber industries and natural resources.	
F.12.2 Understand how cells differentiate and how cells are regulated	D.12.5 Describe how biotechnology can enhance food and fiber production. E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact	Demonstrate the process of mitosis and meiosis and how organisms continue to reproduce and maintain themselves – 4 days Design DNA to demonstrate how translation and transcription work to make proteins necessary for the life of an organism – 4 days
The Molecular Basis of Heredity		
F.12.3 Explain current scientific ideas and information about the molecular and genetic basis of heredity	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources. E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days
F.12.4 State the relationships between functions of the cell and functions of the organism as related to genetics and heredity	D.12.5 Describe how biotechnology can enhance food and fiber production. D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources. E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days Design DNA to demonstrate how translation and transcription work to make proteins necessary for the life of an organism – 4 days
Biological Evolution		
F.12.5 Understand the theory of evolution, natural selection, and biological classification	D.12.5 Describe how biotechnology can enhance food and fiber production. D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources.	Identify major individuals who were involved in the history of biotechnology and what their involvement consisted of - 2 days
F.12.6 Using concepts of evolution and heredity, account for changes in species and the diversity of species, including the influence of these changes on science, e.g., breeding of plants or animals	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources	Demonstrate how to use a punnett square to show multiple crosses of traits that organisms might acquire – 2 days Demonstrate how restriction enzymes are used to cut

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	E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact	DNA to determine certain characteristics and match DNA samples – 2 days Demonstrate how to use gel electrophoresis to identify matching DNA structures and changes in DNA – 2 days
The Interdependence of Organisms		
F.12.7 Investigate how organisms both cooperate and compete in ecosystems	E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact E.12.2 Analyze benefits, costs, and consequences of land use E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
F.12.8 Using the science themes, infer changes in ecosystems prompted by the introduction of new species, environmental conditions, chemicals, and air, water, or earth pollution	D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources. E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact E.12.2 Analyze benefits, costs, and consequences of land use E.12.3 Explain the impact of climate change on existing agricultural systems E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
Matter, Energy, and Organization in Living Systems		
F.12.9 Using the science themes, investigate energy systems (related to food chains) to show how energy is stored in food (plants and animals) and how energy is released by digestion and metabolism	D.12.1 Describe the global utilization of Wisconsin’s food, fiber, and ornamental plant products E.12.3 Explain the impact of climate change on existing agricultural systems	
F.12.10 Understand the impact of energy on organisms in living systems	No significant match found	
F.12.11 Investigate how the complexity and organization of	D.12.5 Describe how biotechnology can enhance food and	Identify and describe the major parts of a cell and their

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organisms accommodates the need for obtaining, transforming, transporting, releasing, and eliminating the matter and energy used to sustain an organism	fiber production.	function – 4 days
The Behavior of Organisms		
F.12.12 Trace how the sensory and nervous systems of various organisms react to the internal and external environment and transmit survival or learning stimuli to cause changes in behavior or responses	D.12.2 Discuss the impact that climate and water have on the food, fiber, and ornamental horticulture production cycles throughout the world D.12.5 Describe how biotechnology can enhance food and fiber production	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
G. SCIENCE APPLICATIONS	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	
By the end of Grade 12 students will:	By the end of Grade 12 students will:	
G.12.1 Identify personal interests in science and technology; account for implications that these interests might have for future education, and options to be considered	D.12.4 Explore traditional and nontraditional food, fiber, and ornamental horticultural jobs/careers and identify the necessary skills, aptitudes, and abilities B.12.5 Explore various career opportunities in the food, fiber, and natural resources industries using available forms of technology B.12.6 Access information identifying the postsecondary education programs, both in and outside of Wisconsin, leading to careers in the food, fiber, and natural F.12.4 Research a career in agricultural business marketing and management	Identify a career that interests you in the biotechnology field and research that career in its entirety and present it to the class – 4 days
G.12.2 Design, build, evaluate, and revise models and explanations related to the earth and space, life and environmental, and physical sciences	D.12.2 Discuss the impact that climate and water have on the food, fiber, and ornamental horticulture production cycles throughout the world E.12.3 Explain the impact of climate change on existing agricultural systems E.12.4 Analyze practices used by farmers to reduce soil erosion and runoff to maintain soil fertility and productivity	
G.12.3 Analyze the costs, benefits, or problems resulting from a scientific or technological innovation, including implications for the individual and the community	A.12.3 Describe how global interdependence benefits the production and distribution of food and fiber B.12.4 Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology D.12.5 Describe how biotechnology can enhance food and	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days

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	<p>fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment</p>	
G.12.4 Show how a major scientific or technological change has had an impact on work, leisure, or the home	<p>B.12.4 Access and use information for a class presentation about the impact of new technologies on the products manufactured and produced; e.g., biotechnology D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources</p>	Describe how to complete an embryo transfer and how it has affected society – 2 days
G.12.5 Choose a specific problem in our society, identify alternative scientific or technological solutions to that problem and argue its merits	B.12.1 Apply knowledge of technology to identify and solve problems	Debate the best way organisms should reproduce - 2 days
H. SCIENCE IN SOCIAL AND PERSONAL PERSPECTIVES	Agricultural Education Standards	Crosswalk of Local School Curriculum
Performance Standards	Performance Standards	
<i>By the end of Grade 12 students will:</i>	<i>By the end of Grade 12 students will::</i>	
H.12.1 Using the science themes and knowledge of the earth and space, life and environmental, and physical sciences, analyze the costs, risks, benefits, and consequences of a proposal concerning resource management in the community and determine the potential impact of the proposal on life in the community and the region	<p>A.12.1 Identify how political policies and issues shape and influence food and fiber systems A.12.3 Describe how global interdependence benefits the production and distribution of food and fiber D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries cite examples of conflicts between environmentalists and producers of food and fiber E.12.1 Understand the application of agricultural technologies that can sustain production while reducing environmental impact E.12.2 Analyze benefits, costs, and consequences of land use</p>	Debate the best way organisms should reproduce - 2 days

**Crosswalk Between: Wisconsin’s Model Academic Standards for Science and
Wisconsin’s Model Academic Standards for Agricultural Education**

Instructions: Please fill out the third column illustrating how the proposed agriculture class meets the state standards in the first two columns. Information in the third column should include knowledge, concepts and skills, and a summary of the equivalent instructional time for the equivalent course. The first column lists Wisconsin’s Model Academic Standards for Science. Column two illustrates the various agriculture performance standards that have been crosswalked to the science performance standards in the first column.

	E.12.5 Analyze the impact and use of chemicals in the production and processing of food and fiber E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment	
H.12.2 Evaluate proposed policy recommendations (local, state, and/or national) in science and technology for validity, evidence, reasoning, and implications, both short and long term	A.12.1 Identify how political policies and issues shape and influence food and fiber systems B.12.1 Apply knowledge of technology to identify and solve problems C.12.2 Practice skills relating to communication, problem-solving, and decision-making through individual, group, and team processes	Design a presentation on different bioterrorist acts, what causes them, the symptoms, the treatments and how the government is protecting its citizens from such attacks – 5 days.
H.12.3 Show how policy decisions in science depend on many factors, including social values, ethics, beliefs, and time-frames, and considerations of science and technology	A.12.1 Identify how political policies and issues shape and influence food and fiber systems D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries E.12.2 Analyze benefits, costs, and consequences of land use E.12.6 Analyze benefits, costs, and consequences of processing food and fiber on the environment F.12.1 Describe how the production, distribution, and marketing of food and fiber is part of a complex economic system	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
H.12.4 Advocate a solution or combination of solutions to a problem in science or technology	D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries D.12.5 Describe how biotechnology can enhance food and fiber production D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources	Identify ways in which biotechnology is used in food, plants, animals and the environment through textbook readings, a cloning webquest and a lab on bioluminescence – 5 days
H.12.5 Investigate how current plans or proposals concerning resource management, scientific knowledge, or technological development will have an impact on the environment, ecology, and quality of life in a community or region	A.12.1 Identify how political policies and issues shape and influence food and fiber systems A.12.3 Describe how global interdependence benefits the production and distribution of food and fiber B.12.1 Apply knowledge of technology to identify and solve problems D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries	Debate the best way organisms should reproduce - 2 days

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	D.12.6 Understand the impact emerging technologies within hydroponics, aquaculture, and biotechnology have on the food and fiber industries and natural resources	
H.12.6 Evaluate data and sources of information when using scientific information to make decisions.	B.12.3 Use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data	Evaluate hair specimens from different animal and human sources and identify the difference between hair types of animals and humans based on hair structure – 2 days
H.12.7 When making decisions, construct a plan that includes the use of current scientific knowledge and scientific reasoning.	B.12.3 Use technology to acquire, organize, and communicate information by entering, modifying, retrieving, and storing data D.12.3 Understand how public policy affects the food, fiber, and ornamental plant industries	When making decisions, students will construct a plan that includes the use of current scientific knowledge and scientific reasoning – 2 days

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