Conneaut School District — Agriscience Curriculum Map

Grade 9-10Science	Grades 9-10 *(45mb period day for full year)*
Unit One: Introduction of Agriculture (15 days (&, 45 min./day) American Agriculture Milestones in Agriculture World Agriculture S11.A.1.1.1 Compare and contrast scientific theories, scientific laws, and beliefs. 511.A.1.1.5 Analyze or compare the use of both direct and indirect observations as means to study the world and the universe. Unit Two: Soils (20 days (2i 45 min./day) Rocks and Minerals Earth's Resources Soil Horizons Physical Properties of Soil S11.A.1.3.3 Describe how changes in physical and biological indicators of water systems reflect changes in these systems. S11.A.1.3.4 Compare the rate of use of natural resources and their impact on sustainability. S11.A.2.2.1 Evaluate appropriate methods, instruments, and scale for precise quantitative and qualitative observations S11.B.3.1.1 Explain the significance of diversity in ecosystems S11.B.3.2.3 Explain how natural processes impact the environment over time. S11.D.1.1.1 Classify and describe major types of rocks and minerals by their origin and formation. S11.D.1.3.1 Explain the multiple functions of different water systems in relation to landforms.	Link to Pennsylvania Standards for Science http://www.pdesas.org http://www.pearsonsuccessnet.com **(this link is comprehensive and contains National and Pennsylvania Standards as well as additional information (standards available in Word or PDF)** A course syllabus will be developed and posted on the Conneaut School District Web Site for this course. : will include unit outline as listed on this page : will also include student learning expectations, and assessments

Unit Three Plant Science (48 days @ 45 min./day) Plant reproduction
Plant systems
Plant growth
Plant and animal diseases
Weed science
Integrated pest management
Science of forestry
Producing organically grown projects
Science of fiber production

Sl1A.1.3.3 Describe how changes in physical and biological indicators of water systems reflect changes in these systems.
SI IA.1.3.4 Compare the rate of use of natural resources and their impact on sustainability.
S11.A.3.3.2 Compare stationary physical patterns to the object's properties.
S 11.B.1.1.2 Compare and contrast the structural and functional similarities and differences among the living things.
SI I .B.I.1.3 Compare and contrast cellular processes.
S11.B.2.2.2 Compare and contrast mitosis and meiosis in passing on genetic information
SI I.B.3.1.5 Predict how limiting factors can affect organisms
S 1 1 .B.1.1.1 Explain how structure determines function at multiple levels of organization
511.D.1.1.3 Explain the impact of obtaining and using natural resources for the production of energy and materials

Unit Four: Animal Science (48 days @ 45 min./day)
Animal systems
Animal reproduction
Animal growth
Animal diseases
Animal nutrition
Science of aquaculture
Entomology

S11.A.3.2.1 Compare the accuracy of predictions represented in a model to actual observation and behavior.
S11.A.3.2.3 Describe how relationships represented in models are used to explain scientific of technological concepts.
S11.B.1.1.2 Compare and contrast the structural and functional similarities and differences among living things.
511.B.2.1.3 Explain the role of selective breeding and biotechnological in changing the genetic make-up of a population.
S11.B.2.2.1 Describe how genetic information is expressed.
S11.B.3.1.3 Describe how living organisms affect the survival of one another.
S11.B.3.3.2 Compare the impact of management practices in meeting the need for commodities locally and globally.

Unit Five: Food supply and careers (48 days @ 45 min./day) Science of food preservation
Agriculture and the environment
Safe food supplies
Science of genetics
Genetic engineering
New direction
Careers in agriculture

S11.A.1.1.4 Explain how specific scientific knowledge or technological design concepts solve practical problems.
S11.A.1.2.1 Explain and apply scientific concepts to societal issues using case studies.
S11.A.1.3.2 Describe or interpret dynamic changes to stable systems.
S11.A.1.3.4 Compare the rate of use of natural resources and their impact on sustainability.
S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.
S11.B.2.2 Describe how genetic information is inherited and expressed
S11.B.3.2 Analyze patterns of change in natural or human-made systems over time.
S11.B.3.3 Explain how human-made systems impact the management and distribution of natural resources.
S11.C.2.2.2 Explain the practical use of alternative sources of energy to address environmental problems.
S11.D.1.3 Explain the significance and contribution of water as a resource to living things and the shaping of the land.

General Syllabus for Agriscience in Conneaut School District

Text Information: The Science of Agriculture, A Biological Approach 3rd Edition
Ray V Herren, Thomson/Delmar Publisher
Online Text Book: www.pearsonsuccessnet.com

Course Description: Agriscience is meant to give students an opportunity to study science with an emphasis on the world related to agriculture. An in depth study of soils, plants, and animals as well as new technology will be explored with an emphasis on agriculture and food science career training.

Objectives:

- to advance student understanding of the disciplines of science
- to demonstrate knowledge of the scientific method
- to comprehend nonfiction text
- Understand the food and fiber system in a scientific way
- Complete scientific experiments
- Explain why plants are essential for life
- Discuss the importance of animals to humans and the environment

Course Content:

Introduction of Agriculture (approximately 10 hours)

- American Agriculture
- Milestones in Agriculture
- World Agriculture

Soils (approximately 20 hours)

- Rocks and Minerals
- Earth's Resources
- Soil Horizons
- Physical Properties of Soils

Plant Science (approximately 48 hours)

- Plant reproduction
- Plant systems
- Plant growth
- Plant and animal diseases
- Weed science
- Integrated Pest Management
- Science of forestry
- Producing organically grown projects
- Science of fiber production

Animal Science (approximately 48 hours)

- Animal systems
- Animal reproduction
- Animal growth
- Animal diseases
- Animal nutrition
- Science of aquaculture
- Entomology

Food supply and careers (approximately 48 hours)

- Science of food preservation
- Agriculture and the environment
- Safe food supplies
- Science of genetics
- Genetic engineering
- New directions
- Careers in Agriculture

Instructional Outline:

Term 1

Week	Topics Covered	PA anchors
1	Science of Agriculture	S1 1 .A. 1 . 1
2	Global Agriculture	. 1 -4
3	Rocks and Minerals	S11.A.2.2.1-3
4	Earth's Resources	S11.D.3.1.1-3
5	Soils/ Horizons, make-up	
6	Physical Properties of soil/texture, structure	

Term 2

Week	Topics Covered	PA anchors
7	Plant reproduction/sexual vs assexual	S11.D.3.1.1-3
8	Plant systems/leaves, stems, roots	
9	Plant growth/nutrition	
10	Plant diseases	S11.C.2.1,2
11	Weed science	SI I.C.2.2.1
12	Integrated Pest Management	S11.C.3.1-3

Term 3

Week	Topics Covered	PA anchors
13	Science of forestry	S11.C.2.1,2 511.C.2.2.1 S11.C.3.1-3
14	Organically grown products	S11.D.2.1.1-3
15	Food and fiber production	
16	Animal systems/ skeletal system and muscular systems	
17	Animal systems/digestive systems	
18	Animal systems/digestive and respiratory systems	

Term 4

Week	Topics Covered	PA
19	Animal reproduction/Male and female parts	S11.D.2.1.1-3
20	Animal reproduction/mating, AI, Embryo Transfer and Cloning	511.D.1.1.2-4
21	Animal growth/ Growth process	
22	Animal nutrition	
23	Animal diseases/diseases and immunity	
24	Agricultural entomology/classification and characteristics	

Term 5

Week	Topics Covered	PA
25	Science of aquaculture	S11.D.1.3.1-4
26	Science of food preservation	
27	Agriculture and the environment	
28	A safe food supply/inspections, hormones, labeling	S11.B.2.1.2,5 S11.B.3.1.1-3 S11.B.3.2.1-3 S11.B.3.3.1-4 S11.D.1.2.1,2
29	Science of genetics	
30	Genetic engineering	

Term 6

Week	Topics Covered	PA anchors
31	New directions in agriculture/renewable resources	S11.B.2.1.2,5 S11.B.3.1.1-3 S11.B.3.2.1-3 S11.B.3.3.1-4 511.D.1.2.1,2
32	New directions in agriculture/sustainable agriculture	
33	Careers in Agriculture/plants and animals	
34	Career in Agriculture/natural resources and food sciences	
35	**PSSA Testing and review(week may vary)**	
36	**Wrap up and finals**	