AQUAPONICS

Course Description:

This semester course is designed for students with an interest in science and agriculture. This course will focus on managing the aquaponics system in the greenhouse. We cover the topics in aquaponics including aquaponic methods and applications, crop choices and recommendations, water quality, daily operation and growing techniques, greenhouses and environmental control, fish biology and feeds, plant care and health, and the economics of aquaponics. Students will also be growing food that will be used by the school lunch program. Units in this course will include introduction to aquaponics, water chemistry, horticulture, aquaculture and possibly others.

***Not an NCAA approved course**

As evidenced based on classroom assessments, the student is able to:

AQ1.1	Differentiate between hydroponics, aquaculture, and aquaponics [AFNR.PS.5]
AQ.1.2	Identify important milestones and locations in the history of aquaponics [AFNR.ALLR.1.A]
AQ1.3	Describe the components of an aquaponics system [AFNR.PS.5.]
AQ1.4	Explain the requirements necessary to run the aquaponics system [AFNR.ENR.7]
AQ 2.4	Identify the roles of fish, bacteria, and plants in a balanced aquaponics ecosystem [AFNR.ENR.7]
AQ 2.5	Explain the nitrogen cycle and how it functions in an aquaponics system [AFNR.ENR.7]
AQ 2.6	Explain human impacts on fish populations around the world [AFNR.ENR.1.B]
AQ.3.1	Identify the major anatomical structures of a fish [AFNR.ENR.7.D]
AQ.3.2	Identify and explain the functions of the body systems of a fish [AFNR.ENR.7.D]
AQ.3.3	Identify the components required to provide fish with proper nutrition [AFNR.AS.4.B]
AQ.3.4	Explain seasonal feeding behaviors of fish [AFNR.AS.4.A]
AQ.4.1	Identify and maintain proper conditions for germination and root development [AFNR.PS.2.D]
AQ.4.2	Demonstrate how to propagate plants using seeds, cuttings, and division [AFNR.PS.4]
AQ4.3	Explain the differences between sexual and asexual propagation [AFNR.PS.4.A]
AQ4.4	Describe different pre-treatments required for germination of seeds [AFNR.PS.4]
AQ 5.1	Define horticulture and explain its role in agriculture and society [AFNR.ALLR.1]

AQ 5.2	Manage temperature, light, and humidity in a greenhouse environment [AFNR.PS.5.]
AQ 5.3	Describe how environmental factors affect plant growth [AFNR.PS.3.A]
AQ 5.4	Identify how soil composition affects plant health [AFNR.ENR.4.A]

AQ.6.1	Label the parts of a plant and describe their functions [AFNR.PS.2.B]
AQ.6.2	Classify agricultural plants according to taxonomy systems [AFNR.PS.2.A]
AQ.6.3	Distinguish between different types of stems, leaves, flowers, and roots [AFNR.PS.2.B]
AQ.6.4	Identify Primary, Secondary, and Micronutrients [AFNR.PS.3]

AQ 7.1	Describe proper watering, pruning, and pest management techniques [AFNR.PS.5.C]
AQ 7.2	Test soil pH and recommend soil amendments [AFNR.BT.4.A]
AQ 7.3	Identify signs of common plant pests and diseases [AFNR.PS.4.B]
AQ 7.4	Identify major local weeds, greenhouse pests, and greenhouse weeds [AFNR.PS.4.B]
AQ 7.5	Apply integrated pest management (IPM) principles [AFNR.PS.4.C]

West Salem High School is a Target-Based Grading and Reporting School. The learning targets above appear in the Skyward gradebook. Teachers provide feedback on each learning target to parents and students via the Skyward gradebook using a score of 3 (Proficient), 2 (Approaching), 1 (Needs Support), or 0 (No Evidence).