



Food for the Future: Learning at a Glance
Intermediate Age (youth ages 11-13 or grades 6th-8th)

Lesson	4-H Science Abilities	National Learning Standards*	Life Skill	Success Indicator
What is Plant Breeding?	Collaborate, research, collect data, organize	NSES: Science in personal and social perspectives; history and nature of science NTES: Research and information fluency	Decision making, critical thinking	Recognizes that plant breeding touches their everyday lives
History of Plant Breeding	Build/construct, collaborate, organize	NSES: Life science; history and nature of science	Teamwork, cooperation, communication, contributions to a team effort	Can discuss how the science of plant breeding has evolved over the years.
Genetics of Plant Breeding	Collaborate, communicate/demonstrate; design solutions, model	NSES: Life science	Teamwork and communication	Can discuss how plant breeders use genetics to solve real world problems
Plant Breeding Ethics	Collaborate, communicate, interpret/analyze	NSES: Science in personal and social perspectives	Communication and critical thinking	Can recognize that ethical decisions are based on personal viewpoints in addition to scientific data
Food for the Future	Collaborate, problem solve, research	NSES: Life science, science and technology, science in personal and social perspectives NTES: Communication and collaboration, research and information fluency, critical thinking, problem solving, and decision making	Teamwork, decision making	Can explain the importance of saving seeds for future generations.

Senior Age (youth ages 14-18 or grades 9th-12th)

Lesson	4-H Science Abilities	National Learning Standards*	Life Skill	Success Indicator
What is Plant Breeding?	Collaborate, communicate, analyze, research	NSES: Science and technology, science in personal and social perspectives, history and nature of science NTES: Creativity and innovation, research and information fluency, critical thinking, problem solving, and decision making	Decision making, critical thinking, team work, and communication	Recognizes that plant breeders work to solve problems that affect our world
History of Plant Breeding	Collaborate,	NSES: Life science	Cooperation and	Can discuss how the science



	communicate		communication	of plant breeding has changed over the course of history
Genetics of Plant Breeding	Predict, investigate, hypothesize	NSES: Life science	Teamwork, communication	Can demonstrate how to use a Punnett Square to predict the probability of inheritance of specific plant genes.
Plant Breeding Ethics	Collaborate, communicate, analyze, problem solve	NSES; Science in personal and social perspectives NTES: Digital citizenship	Communication and critical thinking	Can recognize that ethical decisions are based on personal viewpoints in addition to scientific data
Food for the Future	Collaborate, research, communicate, implement solutions	NSES: Science in personal and social perspectives NTES: Communication and collaboration, research and information fluency, critical thinking, decision making, and problem solving	Teamwork, decision making, problem solving	Can explain that over time, resistant plants can become susceptible to disease as pathogens mutate.