

Main Criteria: Forward Education
Secondary Criteria: Next Generation Science Standards (NGSS)
Subjects: Mathematics, Science, Technology Education
Grades: 5, 6, Key Stage 2

Forward Education

Smart Farming with Automated Watering

Next Generation Science Standards (NGSS)

Science

Grade 5 - Adopted: 2013

STRAND	NGSS.5-LS	LIFE SCIENCE
TITLE	5-LS1	From Molecules to Organisms: Structures and Processes
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION 5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water.

STRAND	NGSS.5-ESS	EARTH AND SPACE SCIENCE
TITLE	5-ESS3	Earth and Human Activity
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION 5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

STRAND	NGSS.3-5-ETS	ENGINEERING DESIGN
TITLE	3-5-ETS1	Engineering Design
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

PERFORMANCE EXPECTATION 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

PERFORMANCE EXPECTATION 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Next Generation Science Standards (NGSS)

Science

Grade 6 - Adopted: 2013

STRAND	NGSS.MS-LS	LIFE SCIENCE
TITLE	MS-LS2	Ecosystems: Interactions, Energy, and Dynamics
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION MS-LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

STRAND	NGSS.MS-ESS	EARTH AND SPACE SCIENCE
TITLE	MS-ESS3	Earth and Human Activity
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

PERFORMANCE EXPECTATION MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

STRAND	NGSS.MS-ETS	ENGINEERING DESIGN
TITLE	MS-ETS1	Engineering Design
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

PERFORMANCE EXPECTATION MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

PERFORMANCE EXPECTATION MS-ETS1-4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.