Forward Education

Wildfire detection with Autonomous Vehicles

Next Generation Science Standards (NGSS)
Science
Grade **7** - Adopted: **2013**

STRAND	NGSS.MS-PS	PHYSICAL SCIENCE
TITLE	**MS-PS3**	**Energy**
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION	MS-PS3-3	Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

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

PERFORMANCE EXPECTATION	MS-LS2-4	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
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-ESS2**	**Earth's Systems**
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION	MS-ESS2-2	Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

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

PERFORMANCE EXPECTATION	MS-ESS3-2	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
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-ESS3-5	Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

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.

Next Generation Science Standards (NGSS)
Science
Grade **8** - Adopted: **2013**

STRAND	NGSS.MS-PS	PHYSICAL SCIENCE
TITLE	MS-PS3	Energy
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION	MS-PS3-3	Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

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

PERFORMANCE EXPECTATION	MS-LS2-4	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
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-ESS2	Earth's Systems
		Students who demonstrate understanding can:

PERFORMANCE EXPECTATION	MS-ESS2-2	Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

STRAND	NGSS.MS-ESS	EARTH AND SPACE SCIENCE
TITLE	MS-ESS3	Earth and Human Activity
		Students who demonstrate understanding can:
PERFORMANCE EXPECTATION	MS-ESS3-2	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
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-ESS3-5	Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

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.