



A LEARNING EXPERIENCE FOR GRADE 8 SCIENCE

project AGRICULTURE Activity	GRADE 8 SCIENCE
	CONCEPTUAL KNOWLEDGE
LEARNING SOURCE How is innovation making agriculture smarter?	Unit D: Mechanical Systems 4. Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices - Evaluate the design and function of a mechanical device in relation to its efficiency and effectiveness, and identify its impacts on humans and the environment - Develop and apply a set of criteria for evaluating a given mechanical device, and defend those criteria in terms of relevance to social and environmental needs - Illustrate how technological development is influenced by advances in science, and by changes in society and the environment
	PROCEDURAL KNOWLEDGE
BUILD COMPETENCIES Innovative science 	Ask questions about the relationships between and among observable variables, and plan investigations to address those questions - Identify practical problems (e.g., identify problems related to the effectiveness or efficiency of a mechanical device) - Identify questions to investigate arising from practical problems (e.g., "what is the efficiency of this device?") Analyze qualitative and quantitative data, and develop and assess possible explanations - Evaluate designs and prototypes in terms of function, reliability, safety, efficiency, use of materials and impact on the environment (e.g., test and evaluate the efficiency and reliability of a prototype device to lift a given mass from the floor to a tabletop) - Identify and evaluate potential applications of findings (e.g., identify possible applications of a simple machine or mechanical system they have studied)



This **LEARNING SOURCE** and **BUILD COMPETENCIES** activity can meet specific learning outcomes in the Grade 8 Science curriculum. Have students do a quick search for examples of machines used in agriculture and describe the function and design of one. Encourage students to compare how technologies and innovations have changed the efficiency of farming.