All About Discovery!™ **College of Agricultural, Consumer** and Environmental Sciences

ScienceofAgriculture.org

Interactive Computer Tools to Clarify the Role of Nitrogen in Agriculture and the Environment

Introduction

- Nitrogen (N) is essential for most plant and animal life, but it can cause problems when present in excess in the environment.
- Students in agronomic and environmental sciences need to know how to calculate amounts of N for a variety of uses.

Results & Discussion

- We created three interactive educational tools suitable for use in or outside of class.
- Introducing these calculations and concepts early in students' education helps students be less intimidated by, and more engaged

Materials & Methods

- Brainstorming sessions were held to identify common miscalculations and misunderstandings evident in agricultural and environmental science classes.
- Animal, Soil, and Environmental Science faculty worked with

• There is tremendous potential for digital and interactive instruction in agricultural and environmental science education to help students visualize key chemical concepts, practice calculations, and provide tools useful in distance education.

with, chemistry and math concepts.

- Knowing how useful these topics will be in their future agricultural and environmental careers is important for students just starting out.
- Learning tools will be integrated into introductory and upper level courses. A study is underway to evaluate their effectiveness using preand post-testing.

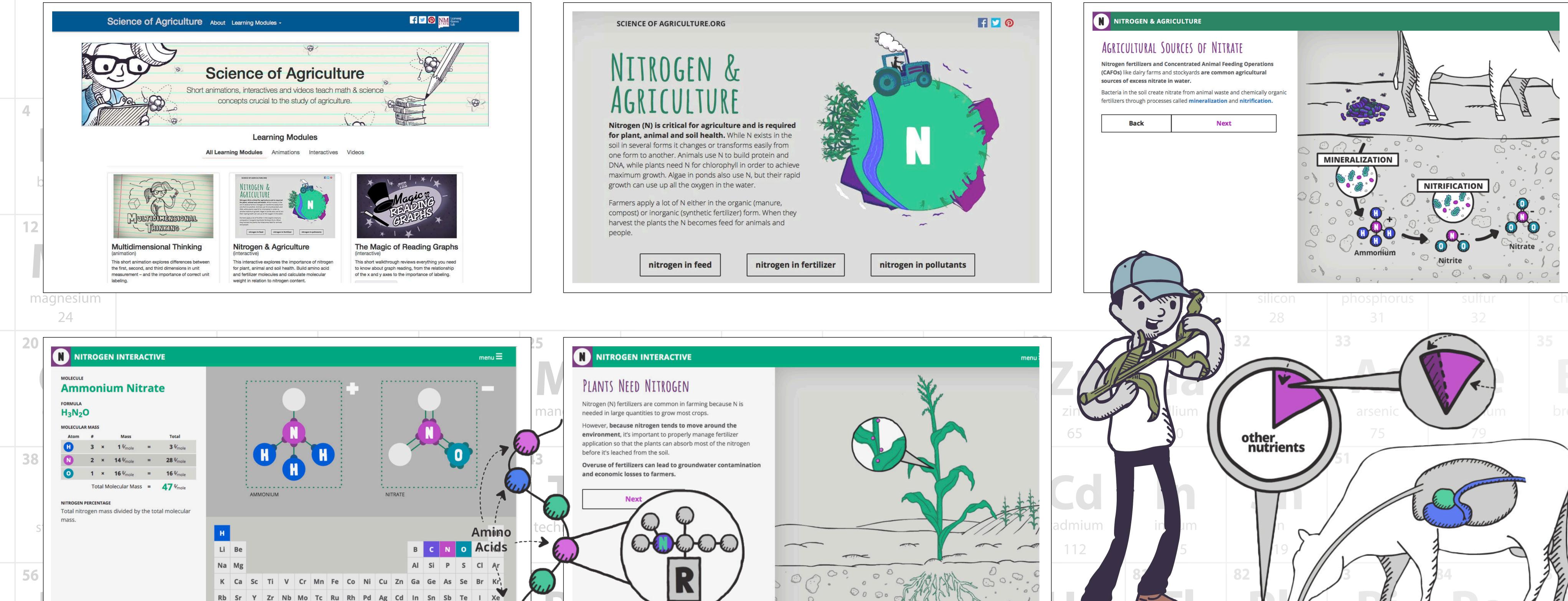
instructional designers to develop tools illustrating how the various forms of N are calculated for protein, pollutants, and fertilizers.

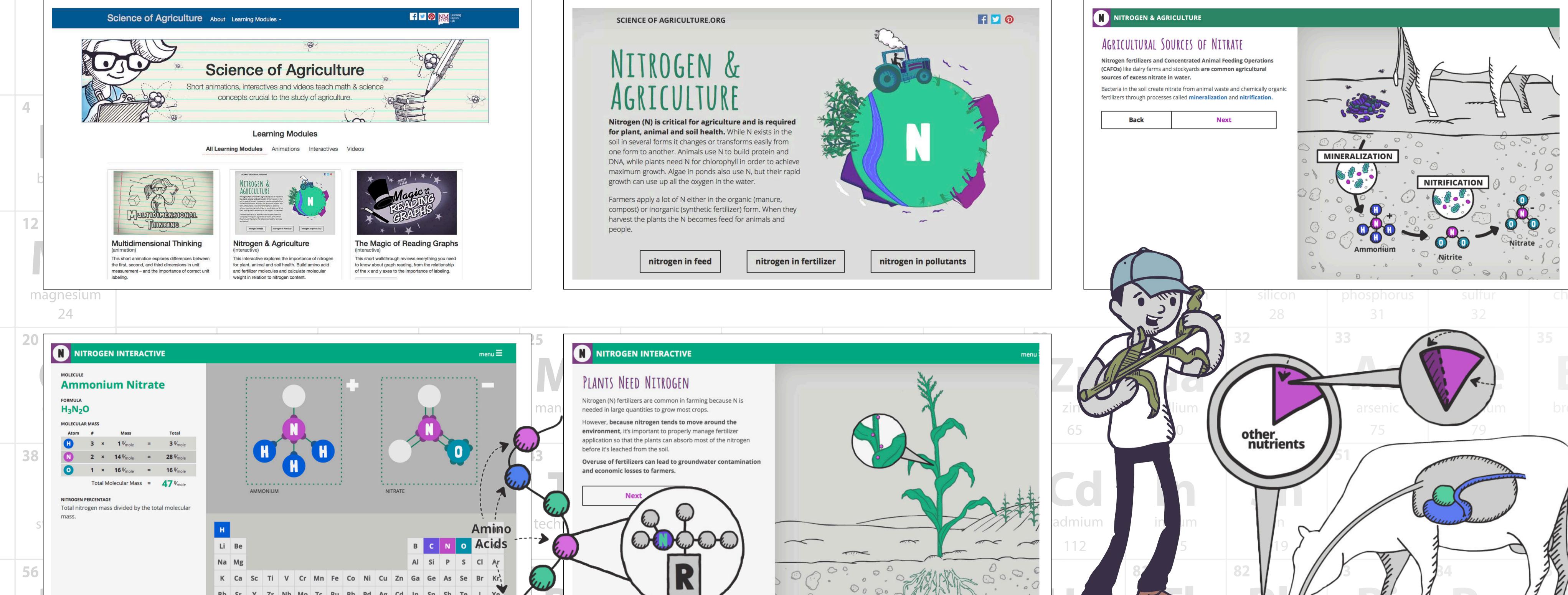
• Digital media products arose through an iterative process of assessing needs, refining learning objectives, storyboarding, prototyping, and testing with the target audience, with continuous collaboration amongst the multidisciplinary team, including chemistry faculty who helped explain various concepts to the designers.

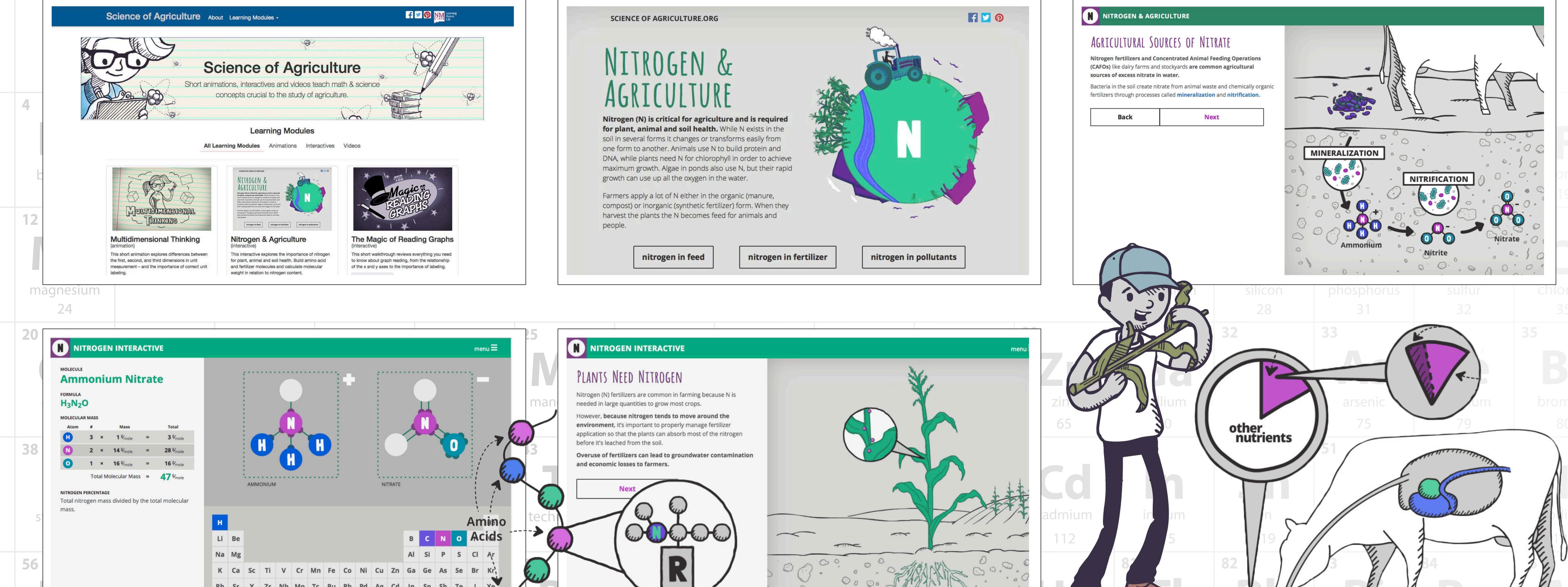
• The N interactive module works on Mac or PC via major web browsers. Programmed in HTML5, it can also be accessed via tablet. Other modules on the website are Adobe Flash-based and require that Flash player be enabled in the browser. Flash-based modules are generally not accessible via mobile device.

Chemistry is everywhere, but students in agriculture may not prioritize understanding chemistry because they don't grasp its importance to their majors and careers.

Modules are freely available at ScienceofAgriculture.org







			Ku			60		A& K	E		Multimer and a second second		
barium	hafnium	tantalum	tungsten	enium	osmium	iridium	platinum	gold	mercury	thallium	lead	bismuth	
137	178	181	184	186	190	192	195	197	201	204	207	209	

April Ulery, PhD	Laura White, PhD	Kenneth Carroll, PhD	Jeanne Gleason, EdD	Barbara Chamberlin, PhD
575-646-2219	575-646-5595	575-646-5929	575-646-5658	575-646-2848
aulery@nmsu.edu	lmwhite@nmsu.edu	kccarr@nmsu.edu	jgleason@nmsu.edu	bchamber@nmsu.edu



http://MediaProductions.nmsu.edu

© 2017 NMSU Board of Regents. All rights reserved. This material is based upon work supported by the President's Fund at New Mexico State University. Any opinions, findings, conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the US Department of Agriculture. New Mexico State University is an equal opportunity/affirmative action employer and educator. NMSU and the US Department of Agriculture cooperating.