

NFL NUTRIENTS FOR LIFE NFL

SPRING
2015

Fertilizer's Role in
**College
Athletics**

{ AGRICULTURE IN A }
Growing World
Essay Contest *Winner*

NEW Foundation
Resources
**Hot off
the Press**

{ from the board }



Healthy crops mean a healthy food supply, which is more important than ever as our global population continues to grow to an expected 9 billion people by the year 2050.

Like people, healthy crops need nutrients to grow and thrive. It is proven that without fertilizer, we could only produce about half as much food as we do today. The plant nutrient sector helps growers increase crop yields sustainably so that together we can provide more high-quality food to a rapidly growing population.

The Nutrients for Life Foundation (NFLF) plays a critical role in educating the public. Years of dedication has resulted in powerful, engaging and successful programs and partnerships. NFLF has had a tremendous impact in communities reaching over 18 million children with curriculum-based messages focused on the importance of agriculture, nutrient stewardship and global sustainability.

Our commitment to reducing the impact of our products on the environment is an important part of our education strategy. This is embodied in our commitment to the Global 4R Nutrient Stewardship framework—an effort that helps protect the environment, support economic vitality and enhance communities.

Building on a solid education foundation, many new tactics have been incorporated to expand NFLF's distribution and network. Regional representatives have been a huge asset in building relationships with schools, increasing support from both agriculture and non-agriculture sectors, increasing membership and continuing to target programs in areas where stakeholders have concerns. Additionally, NFLF has partnered with Discovery Education to offer middle school students, educators and families with a suite of comprehensive digital resources that provide a deeper understanding of the role crop nutrients play in everyday life and the importance of soil nutrients in agriculture. *From the Ground Up: The Science of Soil* includes dynamic interactive lesson plans, digital explorations, bilingual family activities and various agricultural career profiles.

By collaborating with multiple groups, such as Discovery Education and the Smithsonian Institution, we build long-term, impactful programs and solutions that we continually learn from and build upon. We have over 40 resources on nutrients and soil science that fit into classrooms across the country. Our industry offers a realistic solution to the challenges facing world food sustainability. Now more than ever it is time to celebrate our success, share our stories and ensure decision makers are educated and excited to join us on our journey.

Chuck Magro

Chuck Magro
President & Chief Executive Officer, Agrium Inc.

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{ from the editor }

Staying Relevant with New Strategic Plan

We've all read about the need to stay relevant. This applies to companies, individuals in the workforce and yes, teachers in the classroom. It's quite simple, if we are not relevant, we are obsolete. During the last year, the Nutrients for Life Foundation has revisited its mission, vision and strategic plan to ensure we continue to be relevant in today's science classrooms. We love creating resources to help students learn about the 17 essential nutrients all plants need to grow healthy! However, we had to ask many questions to determine what is of relevancy in today's education environment.

Our mission: educate about the importance of responsible fertilizer use in growing healthy crops, increasing food production and feeding a growing population.

Since our formation in 2004, our mission has remained relatively unchanged. However, in the past eleven years much has changed in the classroom, including the boom of digital learning. With input from many of our supporters, Nutrients for Life has identified three essential pillars of success: education and agricultural literacy, collaborative partnerships and effective outreach.

Our education pillar guides the Foundation to continue actively developing and collecting science-based plant nutrition and soil health resources based on national science standards. In addition, we will proactively educate on plant nutrient literacy and the importance of nutrients to global and local sustainability including the 4R nutrient stewardship framework (right source, right rate, rate time and right place).

Nutrients for Life's partnerships pillar states that we will continuously build and nourish individual, company and organizational relationships that add value to our resources

and increase our ability to effectively reach the Foundation's audiences including youth, teachers and the public. Partnerships include like-minded organizations, individual teachers in the classrooms, and companies and individuals that financially support our mission.

Our outreach pillar seeks diverse opportunities to educate, train and inform the public about fertilizer through science, technology and targeted outreach to a wide range of communities. Examples of these opportunities in the past have been with Discovery Education and our digital soil science partnership, and the Dig It! The Secrets of Soil exhibit at the Smithsonian Institution.

To effectively reach success for all three pillars and ultimately NFLF as a whole, we will continue to focus on fundraising both at a corporate and individual level. The donors that support the Foundation truly believe in the value of soil nutrient education.

At the end of every day, I sit down at the dinner table and know Nutrients for Life Foundation is relevant. I see my three young boys eating nutritious, delicious food, and I know that their plates would be empty if it were not for those 17 essential nutrients, including nitrogen, phosphorus and potassium. I know what we do is relevant to each and every person. With our revitalized strategic plan in place, I know we are prepared for success with great relevancy in the classroom and beyond.

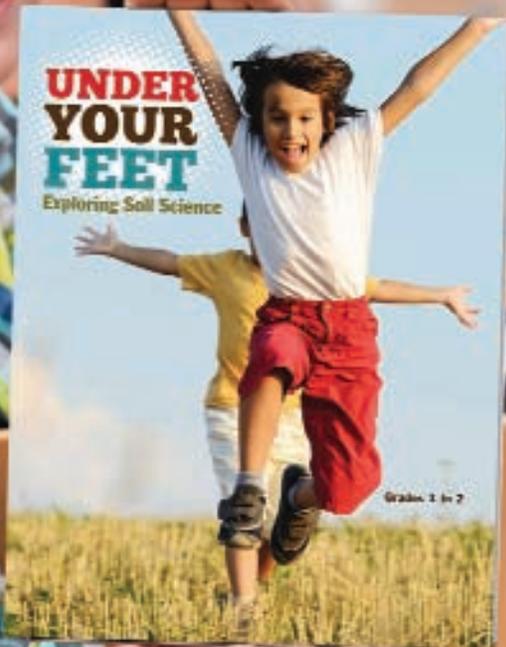
Harriet E. Wegmeyer

Harriet Wegmeyer
Executive Director, Nutrients for Life Foundation



HOT ON #PREPRESS

Nutrients for Life Foundation has an exciting set of new resources for educators: the *Under Your Feet*, *Get the Dirt on SOIL*, and *#SoilScience* readers! This series of booklets, short articles and engaging activities introduces students at various grade levels to soil and crop nutrients' role in feeding the world.



**Foundation Introduces
New Resources!**

HOT #PRESS

Introducing the basics of soil's role in producing food, the 1st and 2nd grade *Under Your Feet* reader encourages students to grow their own plants from seed and categorize fruits from vegetables. In one hands-on activity, students separate soil into piles of smaller pieces, plant material, animal material, living and non-living. What first grader doesn't like to get their hands a little dirty? Students also read correspondence between a student and farmer about growing food, plus observe with their five senses what plants need to grow. Next, a diagram outlines nitrogen (N), phosphorus (P), and potassium (K)'s role in healthy plants. Finally, students compose a few sentences about why soil is important.

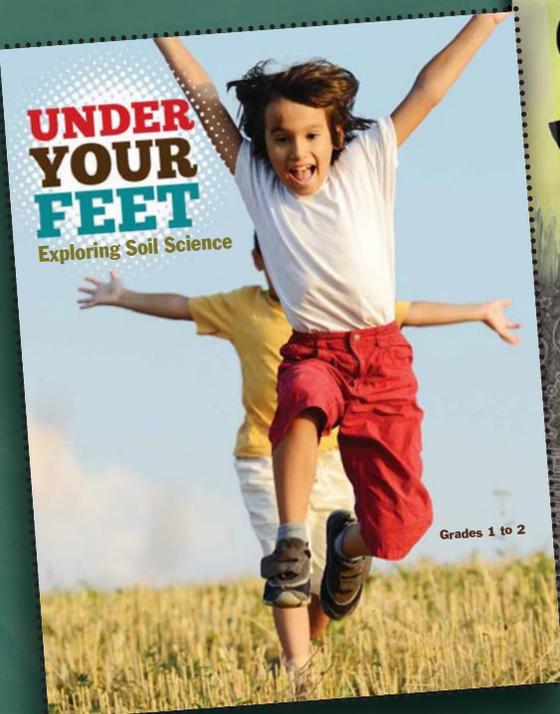
Get the Dirt on SOIL was the first installment created for the series. Geared towards 5th & 6th grade, a logic puzzle, article, and word scramble introduce the properties of soil. An interview with an agriculture engineer and environmental supervisor explores potential STEM careers and touches on the environmental safety efforts within the fertilizer industry. The next article compares nutrients in plants to nutrients in humans. For example, plants can have deficiencies that affect their health, just like humans. Short summaries spotlight N, P, and K individually. For instance, did you know potash mines are deep shaft mines, sometimes as deep as 4,400 feet underground? That's roughly the height of three Empire State Buildings stacked one atop the other! Finally, students examine nutrient deficiencies and play a review game about the main concepts found in the *SOIL* reader.

The final reader in the series is the *#SoilScience*, geared towards 7th and 8th grade science classes. *#SoilScience* begins by introducing soil formation and soil horizons with fun soil facts, an edible soil activity, and a pop quiz mixed in. Next, students read about the Dust Bowl via graphic panels (see excerpt on page 16) and then compare essential plant nutrients to essential human nutrients. Students also read about N, P and K fertilizers. The nitrogen cycle article and a fertilizer overview provide information on the 4R Nutrient Stewardship framework. Lastly, students are encouraged to explore STEM soil science and fertilizer careers with a fun mind-map.

This series complements the Foundation's preeminent curricula, *Nourishing the Planet in the 21st Century* and features several of its activities in the readers. All three readers are available for download on the Foundation website. Sign-up for the Nutrients for Life Foundation teacher newsletter to stay up-to-date on the Foundation's latest resources. 🌱



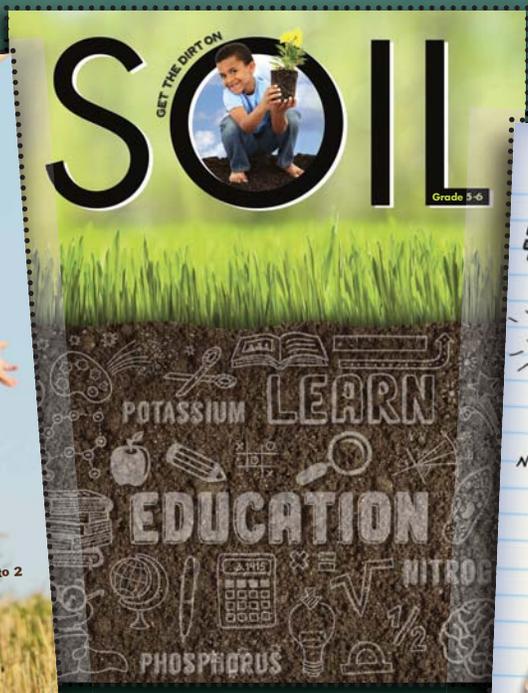
Find the reader that's best for your class!



**Under Your Feet:
Exploring Soil Science**

Grades 1 & 2

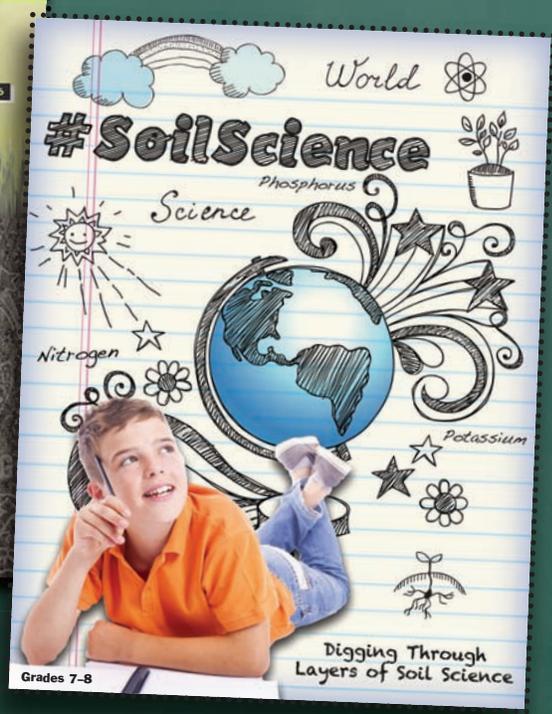
- ✦ Categorize Fruits & Vegetables
- ✦ Explore Where Food Comes From
- ✦ Grow a Seed
- ✦ Reading Activity
- ✦ Soil Separation Experiments



Get the Dirt on SOIL

Grades 5 & 6

- ✦ Properties of Soil
- ✦ Fun Soil Facts
- ✦ Photosynthesis Visual
- ✦ Interview with an Agricultural Engineer
- ✦ Soil Testing
- ✦ Puzzles and Assessments



#SoilScience

Grades 7 & 8

- ✦ Soil Horizons
- ✦ The Great Dust Bowl
- ✦ Nutrients for Plants
- ✦ Fertilizer 101
- ✦ Soil Science Careers
- ✦ Puzzles and Assessments

Agriculture in a Growing World

Essay Winner Honored

The Nutrients for Life Foundation and American Farm Bureau Foundation for Agriculture presented Alexandria Schut with first prize in the Agriculture in a Growing World Essay contest. This national essay competition for grades 9-12 requires students to have studied in a classroom that implemented “The Man Who Fed the World,” by Leon Hesser and corresponding curriculum. Essay submissions addressed modern agricultural technologies and social, political or environmental issues related to agriculture.

Harriet Wegmeyer, executive director of the Nutrients for Life Foundation, presents Alexandria Schut with first prize at the American Farm Bureau Meeting.

Harriet Wegmeyer, executive director of the Nutrients for Life Foundation, noted, “As we celebrated the 100th anniversary of the birth of Norman Borlaug and his contributions, we were proud to partner with the American Farm Bureau Foundation for Agriculture to recognize these outstanding students.”

Schut, a senior at Caledonia High School in Caledonia, Mich. is an FFA state officer and is passionate about the role food security plays in our world’s future. Her essay, entitled “Slay the Scare,” takes an in-depth look at the way population growth puts pressure on existing agricultural lands. She states that “a 57 percent increase in food production is necessary in order to feed the population by 2025... Furthermore, 70 to 80 percent of the increase must come from land already utilized for production purposes.”

Schut argues that the U.S. government should follow in Borlaug’s footsteps whose “faith in American agriculture and research set the face of changing the odds” for developing



Essay Winner Honored

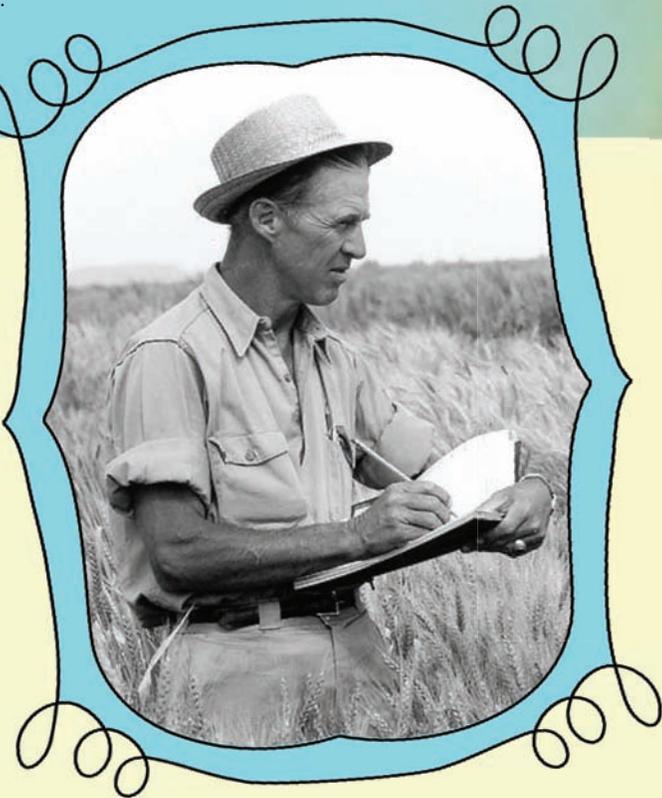
countries. She points out that “until recent years, very little attention has been paid to America’s foreign policies regarding agricultural aid because [of] Borlaug’s accomplishments...” Schut’s passion for agriculture and feeding a growing world is evident in her plea for “every country, agricultural scientist, and farmer [to] come to the table” to address world hunger.

When asked, Schut says, “I plan to continue the fight for food insecurity through endless advocacy for the topic. Through FFA, the Michigan State Officer team has made a commitment to partake in a monthly service project to give back to those seeking aid in our communities. Additionally, I have presented to multiple agriculture sectors to guide them in realizing their role in this issue as our industry must work together if we want to fight this epidemic. In the future, I would like to take my efforts to a global level by visiting third world countries with a purpose to gain a better understanding of their struggles. In my opinion, efforts must be made on every level because food insecurity daunts every community.”



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The Nutrients for Life Foundation is delighted to honor Schut, a student that exemplifies the importance of soil science education and advocacy, one century after Borlaug’s birth.

Haden Meagher, a student at Powell County High School in Deer Lodge, Montana, placed second in the competition. Third place was awarded to Kirsten Forester, a student at Rocky Mountain High School in Meridian, Idaho. As first place winner, Schut received \$500 from Nutrients for Life. Meagher and Forester were awarded \$250 and \$100, respectively.

The Nutrients for Life Foundation also sponsors the winning teacher’s trip to the National Science Teachers Association Conference and grants to further agricultural literacy projects at the winning schools. The first-place school receives \$1,000, second place is awarded \$500 and the third-place winner receives \$250. 🌱

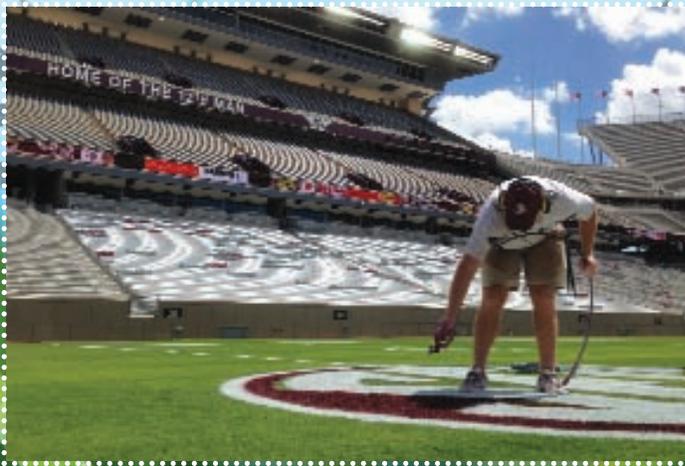


She poignantly ends her article with the question “If you are fortunate enough to go home with food in the pantry, ask yourself, how will you make your difference?”



**CAREER SPOTLIGHT:
NICK MCKENNA**

GAME ON



Nick McKenna always loved spending time outdoors playing sports and working on his family's farm. In college, he found the perfect major to fit his two passions, sports and agriculture. Nick earned a degree in horticulture from Iowa State University and became the Assistant Athletic Field Manager for the Texas A&M Athletic Department. Today, he is one of less than 200 Certified Sports Field Managers in the nation. Read on to find out what it's like to care for collegiate athletic fields and the role soil nutrients plays in creating manicured turf.

The Role Fertilizer Plays in College Athletics

I consider myself lucky to have been able to find a career that combines my passion for agriculture with my love of athletics.



GAME ON

Q What are your responsibilities as Assistant Athletic Field Manager? // My primary responsibility is the daily care and maintenance of Olsen Field at Blue Bell Park, home of the Texas A&M baseball team. Together, the Texas A&M Athletic Department field managers oversee the maintenance of all the NCAA intercollegiate athletic fields, including football, baseball, softball, soccer, track, tennis, and exterior landscape areas.

Q What led you to this career? // I grew up on a hog farm in Iowa and during the summers I made money by mowing lawns with my father. I always knew that I wanted to do something in the agriculture industry. I also had a natural love for sports after participating in various ones while growing up. It took me a while to figure out exactly what I wanted to focus on in college, but eventually I found myself majoring in Horticulture with a turf grass emphasis. At the time, the majority of students in my major were focusing on the golf course industry, so I decided to take the path less traveled and focus on sports fields. Plus, athletic fields were a natural fit with my enthusiasm for sports. I consider myself lucky to have been able to find a career that combines my passion for agriculture with my love of athletics. Rarely do I feel like I'm going to work; I'm simply going to the ballpark to get to farm the grass and watch sports!

Q What education did you need to become an Assistant Athletic Field Manager? // I have a Bachelor of Science degree in Horticulture with a turf grass emphasis from Iowa State University and actually have all the credits I need towards my Master's degree in the same area from Virginia Tech, I just haven't quite finished it, yet! I also attend conferences, workshops and field days every year to further my education and keep up with current trends in our industry.

Q What does a typical day look like for you? // My typical day begins between 7-8 AM, depending what sports are in season and what we have going on that day. In Texas, the climate allows us to play many sports almost year round, so there isn't a lot of down time for our fields and facilities. On a normal non-game day, I spend most the morning around the baseball field, working to prepare everything for that day's team activities. This involves patching and repairing the pitcher's mound and batter's boxes and maintaining the infield dirt. Depending on the time of year and weather, the grass on our fields gets mowed anywhere from once a week to everyday. When a sport is "in-season," we mow every day.

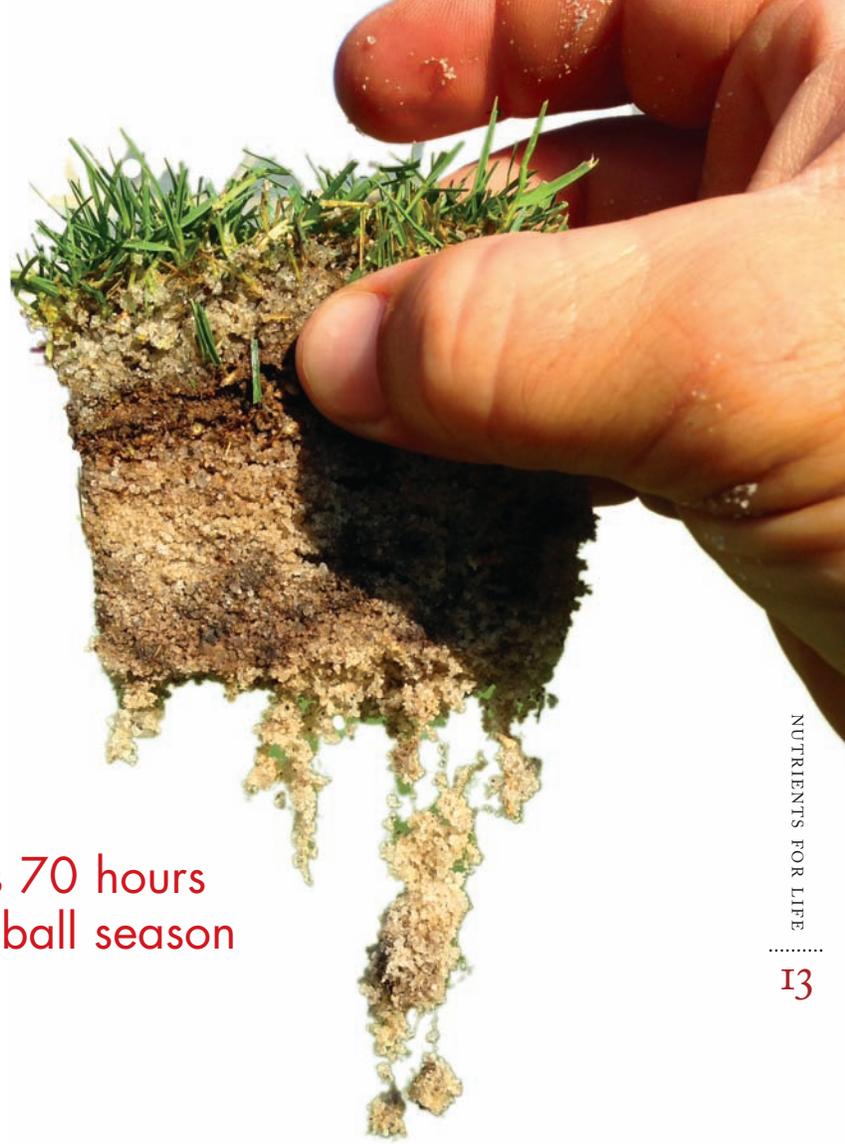
An interesting fact about the baseball field is that I spend just as much time working on the dirt areas as I do on the grass! While the baseball team practices on the field, I help at one of our other facilities. On game days, our work is



Did you know: patterns in the grass are created by the direction it is mowed, not changes in heights or fertilizer rates

more meticulous. For a baseball game, we do all the same things that we would for a normal practice day with a few extra tasks like washing bases, painting and chalking foul lines and the batter's box. We make our best effort to make the field look perfect for every game. One of the great things about my job is that I usually have some work to do after an event so I essentially get paid to stick around and watch the games!

Football games are different than baseball since the majority of our work on the field is done during the days leading up to the game. We still do all the mowing daily, but due to the time required to be game ready, we have to paint all the logos, yard lines, hashes and numbers a day or two before the game. On game day, we come in early, set up the sideline areas for the teams along with a few other miscellaneous jobs. We then get to watch the game and will clean up postgame. On average, we will work between 10-16 hours on game days depending on the sport and length of the event itself.



Nick commonly works 70 hours per week during baseball season

Q What role do nitrogen, phosphorus, and potassium play preparing the fields for game day? //

Turf grass is like most other plants in that it needs a constant supply of food, water and light to maintain growth and life. Obviously, N, P, and K don't have much to do with the water and light part, but they are the essential building blocks as a food source for our grass. Because our fields are constantly used, we need to maximize growth and develop a strong and sustainable plant that can withstand and recover from constant traffic. Nitrogen is the primary driving force behind plant growth and therefore our main area of emphasis. Because our fields are built on a sand root zone to ensure drainage, we fertilize lighter and more frequently than your typical homeowner would. Our general rule is to apply approximately 1 lb/N per 1000 sq. ft. (roughly 43 lb/acre) during each of the ten months per year when our turf grass is growing. Potassium is our second heaviest applied nutrient following nitrogen as it helps the stress tolerance of the grass plant and therefore helps us to withstand the constant use that our fields are continually under. We apply phosphorus in very limited quantities or not at all depending on what our soil test reports show. We apply other nutrients as necessary, but only after conducting a soil test to verify there is a deficiency. We time our fertilizer application either a few days before or right after events to maximize the color and growth response we get to promote plant recovery.



Q How often do you perform a soil analysis? //

I pull samples and have a soil test analysis done at least 3-4 times per year to accurately assess nutrient needs.

Q What methods do you use for adding nutrients to the soil? //

The primary method I use to add nutrients is through granular fertilizers. Depending on the time of year and the growth response I am looking for, I will use different nitrogen sources (slow release vs. quick release, water soluble vs water insoluble, etc.). Additionally, I supplement my granular fertilization program with liquid/foliar applied fertilizers so that I can apply lighter, more precise application when desired.

Q Do you have any guidelines and restrictions for fertilizer use? //

We are very fortunate at this time that we do not have any local, state, or federally mandated restrictions on our fertilizer use. That being said, after spending four years managing athletic fields in Virginia where we did have regulations, I am extremely conscientious of how,

Essentially, I'm a farmer, but instead of growing corn, soybeans or wheat, I grow grass which is its own form of specialty crop.



GAME ON

when, where and why I apply fertilizers. Part of the reason I do frequent, light applications of fertilizer is because with our sand based root zone, leaching or waste of fertilizer through over-application is a distinct possibility. **Just like farmers, I have a responsibility to be a steward of our environment for future generations.**

Q Do coaches have an opinion on how you prepare the field for play? // I consult with the coaches throughout the year to make sure the field is playing as they like or in the way that best fits their team. Most of the time, they allow me to maintain the playing surface as I deem fit. On rare occasions, coaches will make a special request to do something different like make the field or a particular area hard or soft, mow higher or lower, or water extra.

Q Which sport is toughest on the turf? // Each sport has its unique challenges. In football for example, you have 200-300 pound athletes running at full speed and then changing directions quickly or pushing against one another and their success or failure can entirely depend upon how well the grass is able to hold up to those actions. The most worn out area on a football field is between the hash marks and along the team areas on the sidelines from having so many people on it. Baseball and softball, on the other hand, don't get a lot of large worn areas, but a few small spots like in front of the pitcher's mound or around the home plate circle. All the spots where players stand get worn down over the course of a season. On the soccer field, the hardest area to keep grass growing is in the goalkeeper's box. A lot of people compare an athletic field to a golf course, but the primary difference is on a golf course you can move the target or goal (the

"hole") and rotate where traffic and wear occurs. On an athletic field, our dimensions and goals can't be moved so wear occurs in the same spots day after day.

Q What parts of your job do you love? // There are a lot of aspects that I really enjoy about my job. To be able to find a job where I get to work outside and be actively involved in sports is a joy. Realistically, I have one of the few jobs besides being a coach or athlete, that has a direct impact on the outcome of a game. On some days that is a lot of pressure, but most of the time it's fun to be involved at that level. I'm very lucky in the fact the coaches here treat me like I'm a part of their team. It makes me enjoy going to work every day on their behalf. We are very fortunate at Texas A&M to have some phenomenal athletes play here, but even better than that, they are outstanding people! They always keep me entertained and young at heart! I also feel that my job keeps me connected to agriculture, even if it's in a remote way. **Essentially, I'm a farmer, but instead of growing corn, soybeans or wheat, I grow grass which is its own form of specialty crop.**

Q What advice would you give to someone interested in this career? // This is a great career that will truly reward and challenge you at the same time. Like any job, it can be stressful and require long hours, but it's a great career that allows you to be outdoors in an agricultural sense and be connected to sports. For me it was a natural fit. It combined my passion for all of those things. I'm very fortunate to say that I rarely feel like I'm going to work. Every day, I'm part of America's favorite pastime. 🍀



Painting the lines, numbers and logos on a football field requires 120 gallons of paint and over 100 man hours!

{ teachers }

MEET YOU THERE

- Nebraska FFA Convention, April 8-10
- Idaho FFA Convention, April 19-21
- Iowa FFA Convention, April 30-May 1
- Ohio FFA Convention, May 14-16
- Kansas FFA Convention, May 27-29
- Louisiana FFA Convention, June 1-4
- Colorado FFA Convention, June 2-4
- Illinois FFA Convention, June 9-11
- Ohio Assoc. of Ag. Educators, June 9-11
- National Ag in the Classroom (AITC), Louisville, June 15-19
- Colorado AITC, June 15-19
- Southern Colorado AITC, June 15-19
- Florida FFA Convention, June 29-July 3
- Iowa AITC, July 13-14
- Louisiana Ag Teachers Association, July 21-24
- Nebraska Science Teachers Conference, September 26-28
- World Fertilizer Conference, Boston, September 27-29
- California Science Teachers Meeting, October 2-4
- National Science Teachers Association (NSTA) Conference, Reno, October 22-24
- National FFA Convention, Louisville, October 28-31
- Louisiana LSTA, November 9-11
- Texas CAST, November 12-14
- NSTA Philadelphia, November 12-14
- National Association of Ag Educators, November 18-20
- Colorado Science Teachers Convention, November 19-21
- Agricultural Retailers Association, December 1-3
- NSTA Kansas City, December 3-5
- Colorado Ag Classic Convention, Dec 9-10

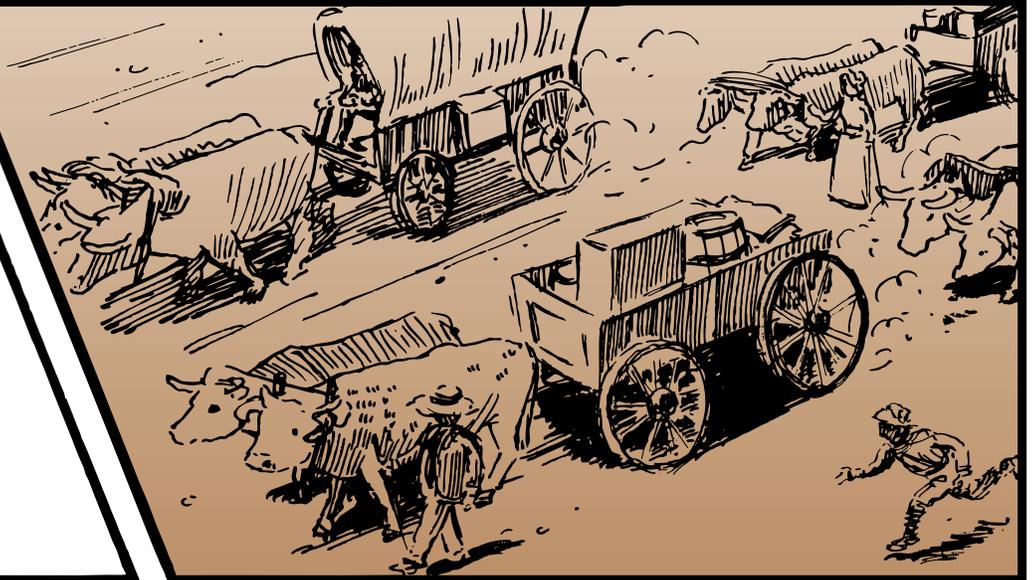
2105 MEETINGS CALENDAR

During the late 1800s, an unusual amount of rain fell on the Great Plains. Farmers and agricultural experts expected the rain to continue for many years.



Learning from the Dust Bowl

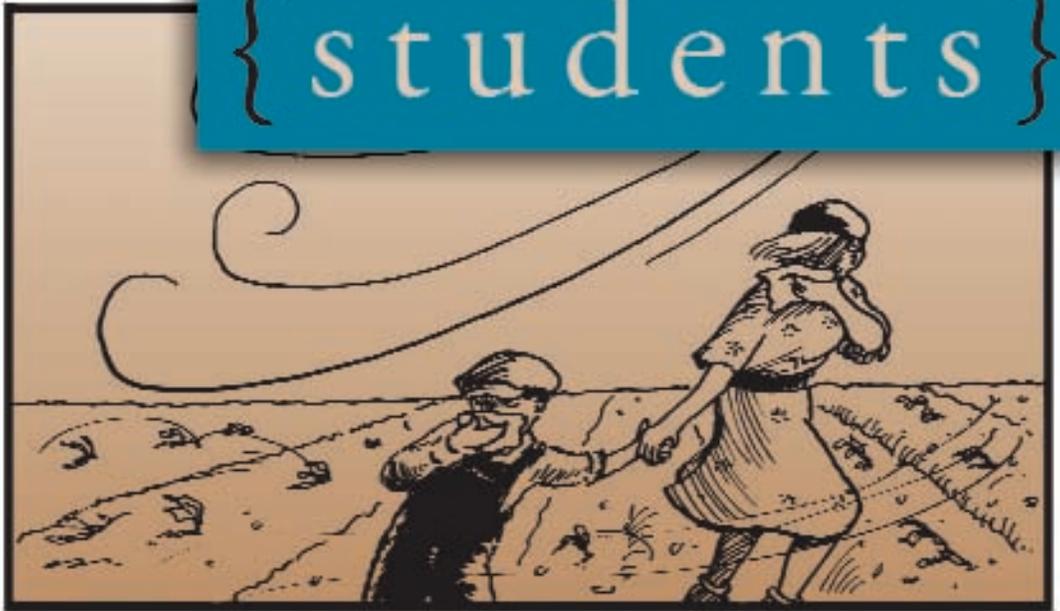
The moist, productive soil encouraged people to settle in the Great Plains and begin farming. As demand for wheat increased, farmers increased their profits by cultivating more and more land.



Mechanized equipment allowed for more efficient farming over an ever-expanding area. Farmers practiced "deep plowing" that removed native grasses in the fields before they began planting. This left the soil barren for months until the next planting.

{ students }

When the weather was wet, deep plowing worked well. However, in 1930 an extended drought began and crops failed. The dry soil was over-plowed into fine particles that were easily blown away by the near-constant winds.



High winds carried massive amounts of topsoil eastward. Dust was carried all the way to Chicago and eventually Cleveland, Boston, and New York City.

LEARN MORE: Research crop rotation, strip farming, and contour farming.

The cruel lesson of the Dust Bowl is that topsoil is a precious resource that must be protected. Challenges associated with maintaining healthy soils include nutrient depletion, erosion, and water runoff. Different farming practices now address these challenges, like crop rotation, strip farming, and contour farming.



PLANT NUTRIENTS ON THE FARM STATION

To request your station, contact Debra Kearney, (641) 891-4182 or dkearney@nutrientsforlife.org.

STEM-BASED Education Station



THE KIT INCLUDES:

- First grade script
- Third grade script
- Large magnetized board
- Corresponding magnets
- 3 Child-sized hat props

Educate students visiting your farm with STEM and a science-based activity!

Sign-up today and receive the “Plant Nutrients on the Farm” interactive station and become a member of the Nutrients for Life Foundation. During the station activity, elementary students learn about plant nutrients’ important role in growing healthy crops. Teachers will appreciate that the standards-based station is a STEM activity emphasizing agriculture science!

Price...\$750

Script Sample:

- Plants need nitrogen to be green and healthy. Without nitrogen, plant leaves will be weak and yellow. Who can spot a pumpkin plant that needs Mr. N to come to the rescue? *(Find the yellow leaf.)*
- Does anyone have Mr. N? *(Have a student add Mr. N near the yellow leaves. Let one of the students wear the N hat.)*
- Now that we have added Mr. N, let us fix this plant. Who has a better-looking leaf? Please hold it up in the air. *(Green leaves - Have the students with the green leaves cover the yellow, sickly leaves.)*



{ industry }

Eleventh Annual Golf Tournament
Raises Over **\$112,000** to
Support Education Efforts

Nutrients for Life **Golf Tournament**



Left: Chris Jahn, The Fertilizer Institute President, with the winning team from Shrieve Chemical Company: Jack Weaverling, Greg Tholen, Craig Utterson, and Foundation Chairman Garrett Lofto.

The fertilizer industry, suppliers, and customers came together in support of soil science education for the exciting annual Nutrients for Life Foundation golf tournament fundraiser. Twenty-one talented teams competed in the challenge that included 13 hole sponsorships on the beautiful Westin Kierland Golf Course in Scottsdale, Arizona. Perfect weather conditions resulted in a day of great golf and fun. We'd like to congratulate the team on their win and players, Randy Nickle, Greg Tholen, Craig Utterson, and Jack Weaverling (Shrieve Chemical) on their impressive performance that earned them the coveted Fertilizer Cup!

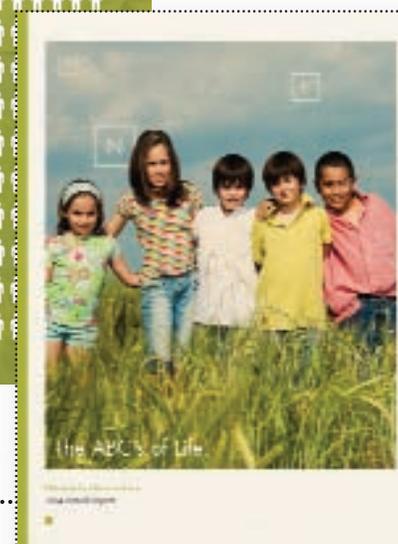
The generous support of each team and sponsor provides benefit to the Foundation's many ongoing efforts, including the Discovery Education partnership, *The Science of Soil*, resource development, *Helping Communities Grow* FFA outreach program, and regional representative positions. The tournament netted over \$112,000 to benefit the Foundation! The Foundation will hold the 2016 Nutrients for Life Golf Tournament on Feb. 8th at the Golden Bear Golf Club in Orlando, Fla. Mark your calendar to participate!



{ industry }



2014 Annual Report



Thank You 2014 Donors

Through the support of generous donations, Nutrients for Life has reached an unprecedented number of students in the classroom.

Mission: Educate about the importance of responsible fertilizer use in growing healthy crops, increasing food production and feeding a growing population.

Vision: The Nutrients for Life Foundation is a global organization consisting of members and collaborative partners that develops and distributes science-based materials to improve plant nutrient literacy, soil health knowledge and promotes fertilizer's role in sustaining a growing population.

View our complete Annual Report at www.nutrientsforlife.org/for-everyone

Donor's Corner

Yes! I want to donate to the Nutrients For Life Foundation! Please complete this form, and return it with your payment, payable to the **Nutrients For Life Foundation**
425 Third Street, S.W., Suite 950, Washington, D.C. 20024 // Fax to: 202.962.0577

Name (name as you wish to be listed): _____

Address: _____

City, State, Zip Code: _____

Phone Number: _____

Company: _____

E-mail: _____

I/We would like to support the Foundation as a/an:

- | | |
|---|--|
| <input type="checkbox"/> Leadership Circle (\$100,000 and above) | <input type="checkbox"/> Sustaining Sponsor (\$2,500 to \$4,999) |
| <input type="checkbox"/> Nutrient Network (\$10,000 to \$99,999) | <input type="checkbox"/> NFL Foundation Champion (\$501 to \$2,499) |
| <input type="checkbox"/> N, P, K Booster (\$5,000 to \$9,999) | <input type="checkbox"/> Fertilizer Friend (up to \$500) |

Amount enclosed: \$ _____

Is this donation being made in memory or in honor of someone special? If so, please complete the following:

In Memory of: _____

In Honor of: _____

Please send an acknowledgement card to:

Name: _____

Address: _____

City, State, Zip Code: _____

We are making this gift by Check Visa MasterCard

Card #: _____

Expiration Date: _____

Signature: _____

The Nutrients For Life Foundation is a 501(c)(3) nonprofit organization under the regulations of the Internal Revenue Service. All contributions to the Foundation are tax-deductible to the extent provided by law.

Thank you!

www.nutrientsforlife.org



To request the complementary items featured, please visit the Nutrients for Life Foundation website's teacher section:

www.nutrientsforlife.org/for-teachers.

1

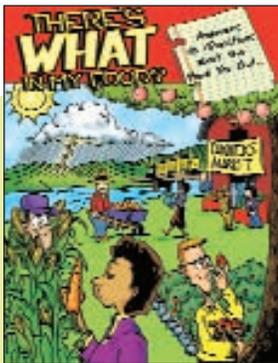
Fertilizer Is Life's Main Ingredient Posters

AUDIENCE: GENERAL

A series of four educational campaign posters.



Available Resources



2 There's What in My Food?

AUDIENCE: GENERAL

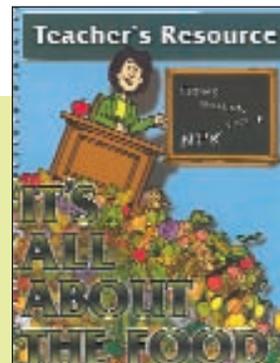
A fun and valuable resource for teenagers and adults, *There's What in My Food?* offers insight to improve understanding about modern production agriculture and why it is so important in assuring plentiful, affordable and safe food supplies.



3 Fun With the Plant Nutrient Team

AUDIENCE: K-3

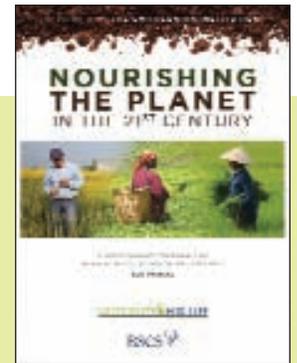
An activity book to help children understand the basic of crop nutrition.



4 It's All About the Food

AUDIENCE: SECONDARY

A resource for high school teachers that focuses on problem solving and critical thinking in relation to food. *It's All about the Food* is divided into three sections to teach students about food production, plant nutrients, and fertilizer.



5 Nourishing the Planet in the 21st Century High School Curriculum

Now in the second edition, the supplement offers six lesson plans designed to teach students about soil science and crop nutrients' role in feeding a growing world.

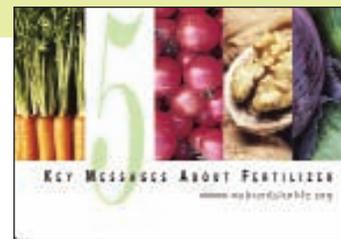


12

Recipe Cards

AUDIENCE: GENERAL

A series of eight recipe cards. Recipes include *pumpkin soup*, *chocolate chip cookies*, *raspberry crumb bars*, *moist carrot cake*, *apple cookies*, *baked spaghetti cakes*, *broccoli quiche*, and *vegetable soup*.



11

5 Key Message Cards

The wallet-sized card concisely states five of the top truths about fertilizers.

13

Cross-curricular Magnets

AUDIENCE: 5TH TO HIGH SCHOOL

Simultaneously promote language arts and science skills with this word magnet. Make sentence with soil science and agriculture buzz words color-coded by the part of speech.

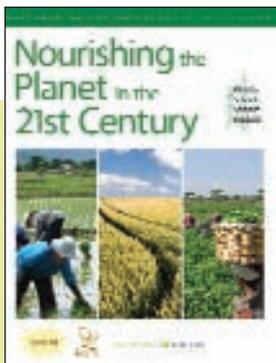


10

Phosphate Mining Video

AUDIENCE: MIDDLE/HIGH SCHOOL

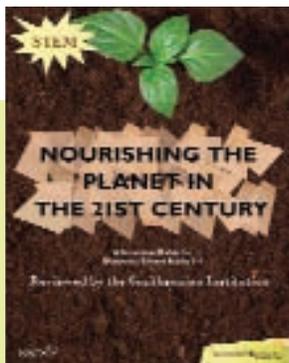
This lively video shows students the amazing process of mining phosphate and its relevance in global food security. Available to stream online!



6

Nourishing the Planet in the 21st Century Middle School Curriculum

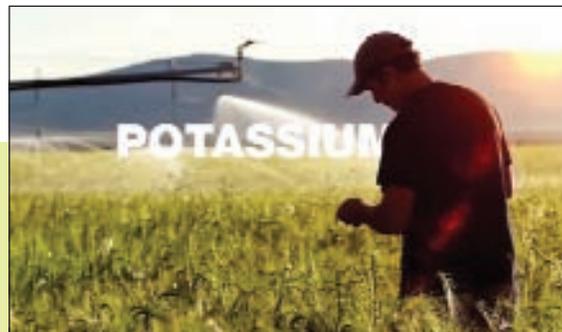
A middle school supplemental curriculum with six science-based lessons about soil science. All three levels of curriculum were favorably reviewed by the Smithsonian Institution.



7

Nourishing the Planet in the 21st Century Elementary Curriculum

Smithsonian-approved, these five STEM-based, supplemental lessons teach plant and soil science, while using gardening to make the lessons fun, interactive, and educational.



9

Potash Video

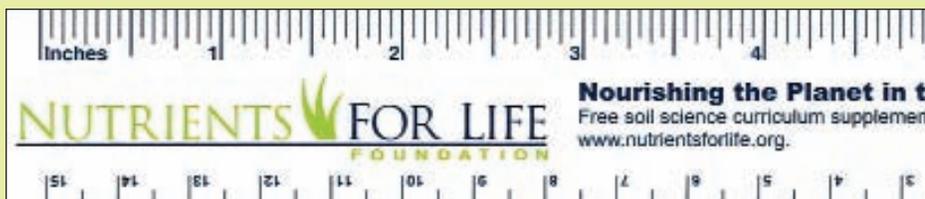
AUDIENCE: MIDDLE/HIGH SCHOOL

Learn where potash fertilizer comes from and how it helps feed the world in this short video. Available to stream online!

8

Ruler

Six-inch ruler that publicizes the *Nourishing the Planet in the 21st Century* curriculum.



More Available Resources



23

Curriculum and Virtual Classroom Videos USB Flash Drive

AUDIENCE: ELEMENTARY/MIDDLE/HIGH SCHOOL
Includes all three levels of curriculum, the virtual classroom videos, and pre- and post-test assessments. Introduce lessons from the *Nourishing the Planet in the 21st Century* curriculum with the short, interest grabbing Virtual Classroom videos, featuring spokesperson Dee McKenna. Also available online.

14

NPK Soccer Poster

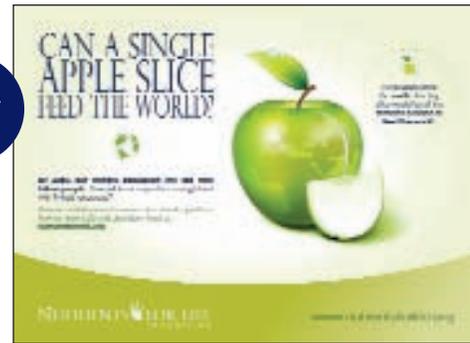
AUDIENCE: ELEMENTARY/MIDDLE SCHOOL
Plants, like humans, need nutrients. This resource poster is a great addition to your classroom showing the basics of primary nutrients. *(Also available in Spanish.)*



15

Apple Poster-New design!

AUDIENCE: MIDDLE/HIGH SCHOOL
Can a single apple slice feed the world? This resource poster for teachers provides a visual aid as they address the challenges of feeding a growing population. *(Also available in Spanish.)*



24

SPRING 2015



16

Nitrogen Cycle Poster

AUDIENCE: HIGH SCHOOL
So many of our planet's systems are cyclical, including one of the most recognizable cycles: nitrogen. Use this colorful visual to help teach about nitrogen's role in plant growth.



17

Phosphorous Cycle Poster

AUDIENCE: HIGH SCHOOL
Perfect for the science classroom, this poster focuses on the movement of phosphorus.



18

Potash Poster

AUDIENCE: HIGH SCHOOL
Enforce biogeochemical cycle concepts with this poster about the potassium cycle. A great visual aid for the high school classroom.



To request the complementary items featured, please visit the Nutrients for Life Foundation website's teacher section: www.nutrientsforlife.org/for-teachers.



22

Apple, Air and Ocean Postcards

AUDIENCE: GENERAL

A series of three postcards highlighting the origins of nitrogen, potash, and phosphate.

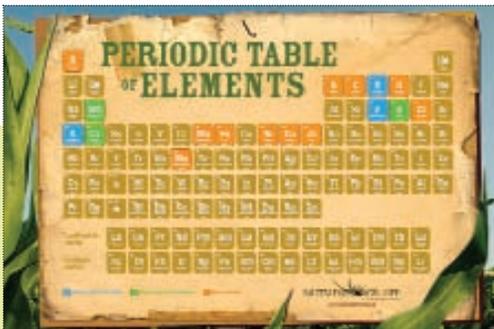


21

Flashcards

AUDIENCE: MIDDLE/HIGH SCHOOL

Play fun games (Around the World, Beat the Clock, or Circle Up) and test your students' plant and soil science knowledge. Or use the set to review concepts from the middle and high school curriculum, *Nourishing the Planet in the 21st Century*.



19

Periodic Table of Elements Poster

AUDIENCE: MIDDLE/HIGH SCHOOL

Connect biology to chemistry with this colorful periodic table of elements poster. This piece highlights the primary macronutrients, secondary macronutrients, and micronutrients; all of which are essential for plants.



20

From the Ground Up: The Science of Soil website

AUDIENCE: MIDDLE SCHOOL

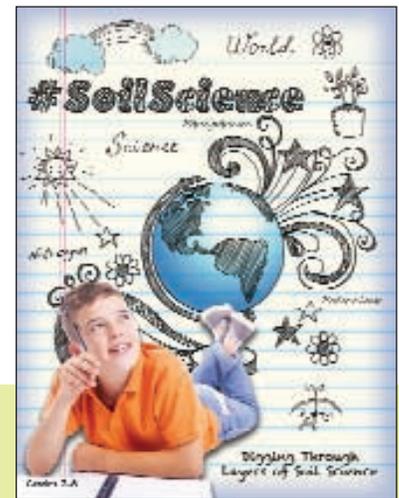
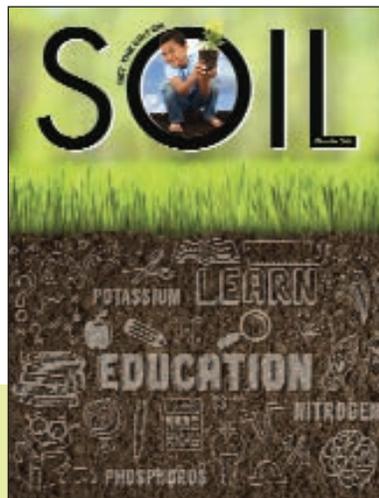
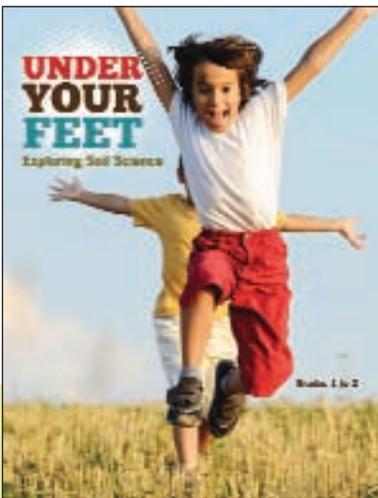
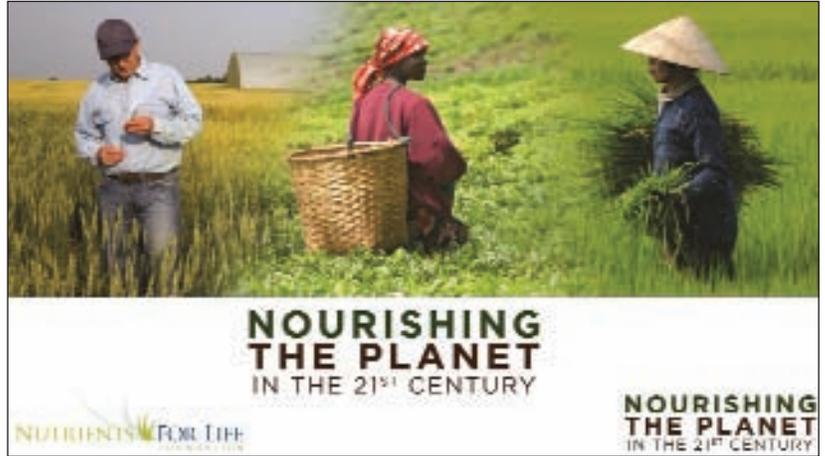
Through a partnership with Discovery Education, this microsite provides a collection of digital resources about soil science, including career spotlights, interactive lessons, digital exploration, and family activities. Visit www.thescienceofsoil.com.

More Available Resources

24

Interactive Lesson Plans

AUDIENCE: 3rd & 4th, 7th & 8th, 9-12th
Download ready-to-go PowerPoint slides that correspond with *Nourishing the Planet in the 21st Century* curriculum. Access the middle school slide deck on www.thescienceofsoil.com and download the elementary and high school slide decks on the teacher's section www.nutrientsforlife.org.



25

Under Your Feet reader

AUDIENCE: 1ST & 2ND
This activity reader introduces soil and its role in producing food. Written for grades 1 & 2.

Download from the teacher's section at www.nutrientsforlife.org.

26

SOIL reader

AUDIENCE: 5TH & 6TH
This 18 page booklet contains articles, like "Properties of Soil" and "Soil Testing Your Yard," and activities about soil science written specifically for grades 5 & 6.

Download from the teacher's section at www.nutrientsforlife.org.

27

#SoilScience reader

AUDIENCE: 7TH & 8TH
Introduce soil formation, the nitrogen cycle, and fertilizer basics with the activity booklet designed for grades 7 & 8.

Download from the teacher's section at www.nutrientsforlife.org.



To request the complementary items featured, please visit the Nutrients for Life Foundation website's teacher section: www.nutrientsforlife.org/for-teachers.



THIS L.O.L. MOMENT
brought to you by

N.P.K.

To some, it's a place to play. To others, a place to think. And on those lazy days, even a place to sleep. It's our lawn. And it's a place made beautiful thanks to the main ingredients of fertilizer – N (Nitrogen), P (Phosphorus) and K (Potassium). Together, they're helping grow beautiful lawn and gardens, and in turn, priceless moments as well. Learn more at NutrientsForLife.org.

fertilizer

LIFE'S MAIN INGREDIENT™



parting shot

Behind the scenes look! Last fall, Jason Bomke of Bomke Farm was filmed by Discovery Education in preparation of The Science of Soil Virtual Field Trip. Viewed in classrooms across the nation on April 23, the field trip engaged middle school students in STEM topics through a real-world look at the innovative technologies and scientific practices used during the harvest and planting seasons.