



**November 2006**

**LifeKnowledge<sup>®</sup>  
At Work**

*To advance the integration of LifeKnowledge through local teachers.*

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## LifeKnowledge AT WORK Newsletter Designed for Local Teachers

This is the sixth issue of LifeKnowledge AT WORK, a newsletter created by the National FFA Organization to advance the integration of LifeKnowledge in local agricultural education classrooms across America. Designed with local teachers in mind, LifeKnowledge AT WORK is a free electronic newsletter featuring tips from teachers, education experts, leadership gurus and a host of other resources.

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## LifeKnowledge Featured Articles

### The Influence of LK on the Teacher Prep Program at Tarleton

Dr. Kyle McGregor, professor at Tarleton State University and Delta Conference mentor, shares his insight on how Tarleton is using LK to better prepare and inspire pre-service teachers. [Click here to read article](#)

### The Value of LK During Student Teaching

First year teacher Jeffrey Spake and his cooperating teacher Stan McVey share their perspectives on the value of LK for student teachers. [Click here to read article](#)

### LifeKnowledge – Real Life and Character in the Classroom

Michael Eade, Merial's Executive Director of Large Animal and Equine, shares his perspective on the everyday skills and values that LifeKnowledge brings to the classroom. [Click here to read article](#)

## Featured Lesson

### Featured Lesson Plan – Eat Dirt!

Agriculture teacher and FFA advisor Katie McKee from Hackettstown, New Jersey shares a soil science lesson that integrates the LifeKnowledge precepts of relationships and social growth.

[Click here to read article](#)

## Sponsor Recognition

## LK in Action

### Planning for a Successful Fundraiser

When planning for a fundraiser, have you ever thought about the skills your students would gain from the activity or do you plan the activity solely on the profit margin? Why not develop a way to do both by checking out some lessons to help prepare your students to be more successful in their fundraising efforts.

[Click here to read article](#)

## Hot Tips

### If It's Worth Learning, It's Worth Celebrating!

Creating celebrations in your classroom is a great way to motivate students. Learn ways to celebrate without having to provide incentives.

[Click here to read article](#)

## LifeKnowledge News

### What's New with LK

– LifeKnowledge at the NAAE Convention in Atlanta!

– LifeKnowledge Online (3.0)

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## Chevrolet and LifeKnowledge: An American Revolution

As a founding partner for the LifeKnowledge Center for Agricultural Education, Chevrolet is helping LifeKnowledge become a revolutionary program that will take agricultural education to new heights. [Click here to read article](#)

### The Influence of LK on the Teacher Prep Program at Tarleton

**By Dr. Kyle McGregor, Associate Professor, Department of Agricultural Services & Development, Tarleton State University, Stephenville, Texas**



One of the cornerstones of agricultural education is that teachers effect change in youth because of a willingness to adopt new concepts. Instructing pre-service teachers on how to implement LifeKnowledge (LK) strategies is no different. For more than two years, we have incorporated LK components as a part of several changes in our program, and it has made a positive difference in both the attitude and preparedness of our pre-service teachers. The reason for the optimistic response? LK has the same theoretical underpinnings as agricultural education, so it has helped us bring back to the forefront what has been near and dear to agricultural education since its inception in 1917 – great teaching!

For example, our pre-service teachers complete five lesson-planning tasks over a five-week period prior to entering their student teaching centers. We allow them to count one of the assignments as two if they

implement a totally activity-based (LK-based) lesson at a high school we travel to for practice teaching. Our student teachers always opt to have four lesson-planning assignments rather than five, and therefore teach an activity-based lesson that utilizes E-Moments and other LK strategies. It is an awesome experience to be a part of their success when they see students energized and excited about what they are teaching on this one day! After using the components of LK in their lessons, most refuse to go back to a traditional style of instruction.

*"The greatness of LK lies in the fact that it is not a program that you purchase and teach to pre-service teachers as a component of FFA and agricultural education. It is a philosophy of teaching and leadership that corresponds with the theory and practice that make agricultural education a superior discipline."*

LK has also been beneficial for our faculty. As a methods instructor, I implement LK components that have to do with sound practices in teaching and learning. This includes helping teachers incorporate strategies that engage students, set context, give effective directions, deliver content utilizing multiple teaching methods, check for understanding and evaluate student learning. My colleague, Dr. Kimberly Bellah, works with pre-service teachers in a leadership development course, taught concurrently with my methods course that focuses on teaching leadership and how to be an effective FFA chapter advisor. She uses LK concepts to teach students how to create meaningful leadership experiences on a daily basis as well as how to integrate leadership into technical lessons. Both of us feel that LK has helped us be more effective in the classroom.

Dr. Bellah and I have further added to our program by adopting the Essential Elements Cognitive Coaching Model developed by Bruce Joyce and Beverly Showers, the same model used at the National FFA Organization's Delta Conference. This model enables students to learn sound theory, see methods modeled appropriately and have an opportunity to rehearse these methods, and finally, receive feedback on their performance. Because of this, we have witnessed our pre-service teachers gaining a firm grasp on the theory that serves as a foundation for the methods taught, including those related to LK. Many of our students who are now in their first and second year of teaching have contacted us to let us know how well they are doing because of their experiences rooted in philosophies that parallel LK.

There is no question that our student teachers are performing better, there are fewer questions about student discipline and students are learning more. As tangible evidence to this fact, we have an assessment completed by cooperating teachers relative to the effectiveness of our student teachers. From 2005 to 2006, our student teachers scored higher in 16 of 19 assessment areas, including the ability to plan classroom work, use supplementary material, motivate students and communicate effectively. Granted, I cannot give all the credit to LK as we have several other parts to our program, but I can say that LK was a significant part of it.

Equally as important to this data is the fact that our pre-service teachers are on the edge of their seats, ready to jump into the arena. They are always willing to take risks and try new methods. They are excited to teach agricultural education! By using components of LK, we are able to place young teachers in a position to be successful early on in their careers. The positive feedback about our program is also generating considerable interest among prospective teachers. It may be coincidence (and probably a combination of several factors), but our fall '06 freshman numbers are up 24 percent!

We are also hearing positive feedback from our cooperating teachers. Each June we host a cooperating teacher workshop in order to give updates and provide information on new practices and programs. This year we decided to engage the group in the same way we do our pre-service teachers. The results were grand! They had a great time laughing, smiling and learning about what their student teachers would be doing for their students. Many have contacted us to let us know that they like what they see. Some are using the methods themselves while others want to learn more.

The greatness of LK lies in the fact that it is not a program that you purchase and teach to pre-service teachers as a component of FFA and agricultural education. It is a philosophy of teaching and leadership that corresponds with the theory and practice that make agricultural education a superior discipline. For all of us in agricultural education, that's something to capitalize on and learn from.

## The Value of LK During Student Teaching

By Jeffrey Spake, First Year Teacher, R.C. Loflin Middle School, and Stan McVey, Assistant Principal, Joshua High School, Joshua, Texas



### Jeffrey's Perspective as a Student Teacher/First-Year Teacher

When asked about the value of LK in my student teaching experience, I can honestly say that it made my life as a student teacher easier and my transition to the full-time classroom less stressful. I feel more confident as a teacher and have a better understanding of how to address various learning styles and engage those different styles. As I write this article, I am just a few months into my first year of teaching and feel like I'm doing fine. I teach six classes of Introduction to World Agricultural Science Technology and use LK in all of them at least three times a week. Each day is trial and error, but I know if I only lectured I would have perhaps five of my 130 students paying attention. With LK, I feel like I have all of them. My students are learning, class is fun, and I'm thoroughly enjoying my initial teaching experience.

One of the best things LK did for me as a student teacher is it helped make my lessons flow better. I

would teach a piece of information and then let students take that information and either perform the skill or teach it to someone else. As an example, I used LK to help me prepare lessons on welding. I used the "little professor" moment to help me teach a skill and as follow-up, I used an actual welder to demonstrate the skill. Then, I had the students try it. LK also taught me to use different methods to help students retain information. My visual learners found value in PowerPoint presentations. My artistic learners did well by drawing pictures about the topic. Something as simple as allowing my students to listen to the radio during an assignment helped aid them in the learning process.

*"Each day is trial and error, but I know if I only lectured I would have perhaps five of my 130 students paying attention. With LK, I feel like I have all of them. My students are learning, class is fun, and I'm thoroughly enjoying my initial teaching experience." – Jeffrey Spake*

I also used and continue to use E-Moments and go-get-it moments to get students moving and consume energy they have from sitting in other classes. They seem to learn more because the lessons are fun and they get to move around and talk (which all of them like to do). I find it intriguing that during a LK lesson, I am asking more of them and they like it. But when I use a straight lecture, I seem to bore them and they don't seem as interested. Plus, they don't get to review or use the information right away, so they seem to forget everything by the next day. Right now, I'm showing a film on rabbits. Instead of playing the movie and expecting the students to retain the information, I'm having them do a film forum. This way, they are actually thinking about and discussing the information as the movie plays.

The most important advice I can give pre-service teachers is to not be afraid of something new even if you don't know what it is. Try it and if it doesn't work, move on to something else. Initially, I was afraid that some middle school students would find a few of the LK lessons a bit childish. But they didn't because it kept them moving, active, and learning. Each one of my classes is very different and what works in one class may not work in another. You just have to keep on trying. For me, LK has been very beneficial in that process.



### Stan's Perspective as a 20-Year Ag Science Teacher and Cooperating Teacher

I taught agriculture for 20 years and Jeffrey was my first exposure to LK. I was extremely impressed with how LK made a difference in all the material presented and how much the students enjoyed learning. I observed through Jeffrey how LK is not only a way to vary instruction, but also a way to encourage students to "buy in" and have ownership in the topic or curriculum being taught. An example is when Jeffrey was teaching a topic on arc welding. He used LK to reinforce safety skills and create team safety with all students going to the shop. The E-Moments portion of LK was used daily while Jeffrey was teaching welding shop safety. I was amazed at how ALL students from low to high ability took an active leadership role, from the classroom to the shop.

Although Jeffrey is a "rookie," his personality and desire to make students successful will enable him to become an outstanding educator. I observed that when

his students were having difficulty with a topic, he would vary his instruction and approach the topic in a different way. LK was a very effective tool for Jeffrey in this way. In my mind, Jeffrey has a God-given ability to teach, and LK is helping him capitalize on and strengthen that ability. So much so, that when Jeffrey completed his student teaching, we wanted to keep him in our school district.

Watching LK in action was also a lesson in not being "set in your ways" and to embrace new ideas and curriculum. Our students are changing so our teaching strategies much also change to meet those needs. I especially see the value of delivering leadership through technical course content now that I have moved from the role of teacher into the role of assistant principal. My advice to other cooperating teachers as well as pre-service teachers after my experience with Jeffrey is to look at LK, embrace it, and most importantly, use it! You won't be disappointed.

*"I was extremely impressed with how LK made a difference in all the material presented to students and how much the students enjoyed learning. I observed through Jeffrey how LK is not only a way to vary instruction, but also a way to encourage students to 'buy in' and have ownership in the topic or curriculum being taught." – Stan McVey*

# LifeKnowledge – Real Life and Character in the Classroom

By Michael Eade, Executive Director, Large Animal and Equine, Merial



Throughout my career, I have had the pleasure of serving on advisory boards for several schools with FFA as part of their program. I have always been impressed by FFA's capability to develop young people by getting them involved in career related activities and by teaching leadership skills. In that regard, LifeKnowledge is a natural extension of what FFA has always promoted, but with the added benefit that it is an all encompassing program that offers educational and leadership opportunities to the entire student population in agricultural education. This is especially exciting to us at Merial because LifeKnowledge further enhances agricultural education and FFA's ability to develop youth with an interest in agriculture.

Specifically, we feel LifeKnowledge does a great job of helping students take the new science and theory of today's field of agriculture and apply them to everyday situations. The premise and the examples relate to real life, which means students in agricultural education will not only be able to apply technical knowledge, but they

are learning how to apply decision making, problem solving, teamwork, and creative thinking. They are learning skills that will enable them to be productive citizens and assets to our workforce, which translates into a positive outlook for all of us in agriculture. More students are being exposed to leadership, communication, entrepreneurship and high values among peers, traits that private industry sincerely appreciates.

We also like the fact that the objectives of LifeKnowledge parallel our corporate values at Merial. These values include:

- Focusing on the customer.
- Respecting people.
- Acting with integrity.
- Promoting innovation.
- Fostering empowerment.
- Supporting teamwork.
- Committed to performance.

These values are an integral part of our everyday development plan for our employees and the primary reason we have such a leading presence in the animal health industry worldwide. Similarly, LifeKnowledge brings these same types of values to the classroom on a daily basis. Not only does LifeKnowledge enable the utilization of these values by every student, but it promotes the demonstration of these values on an ongoing basis. In this way, LifeKnowledge is putting character at the forefront of a quality education.

We are excited to be a supporting partner of LifeKnowledge and even more excited about where this program will take agricultural education and the young people enrolled in it. Through the many videos and testimonials I have seen and the positive feedback I have received, it is evident that LifeKnowledge is bringing real life into the classroom. On behalf of all of us at Merial, we are proud to support such an outstanding program and wish to extend our thanks to all of you who are making it happen.

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## Featured Lesson Plan – Eat Dirt!

Katie McKee, Agriculture Teacher, Hackettstown, New Jersey



Katie McKee, an agricultural educator from Hackettstown, New Jersey, has developed a lesson to get students actively involved in learning about soil science. In this lesson, Katie has incorporated the LifeKnowledge precepts of relationships and social growth into her lesson titled Eat Dirt! McKee developed this lesson for her Introduction to Agricultural Science classes and she shared that the students just "loved it." She believes that her "prejudices" and "stereotypes" about soil particles gave her an opportunity to check what the students learned and provided a connection to real life issues. The students left her class not only knowing about soils but also with a plan to help correct prejudices and stereotypes existing within the school and elsewhere. McKee states that the students "enjoyed the energy and engagement of the lesson, and of course, the candy was a hit." To view a complete version of this lesson, click on the link provided.

[To view a complete version of Katie's lesson click here.](#)

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# Chevrolet and LifeKnowledge: An American Revolution

On New Year's Eve 2003, Chevrolet launched a new ad campaign with the tagline, "An American Revolution." The company's idea was to show America how Chevrolet has been a part of America's past and how it will be a part of America's future.

Chevrolet's employees have deep-rooted pride and take leadership in their company. After seeing the impact FFA and LifeKnowledge have had on students, it was only fitting that in 2006, Chevrolet would become a founding partner of the LifeKnowledge Center for Agricultural Education. Chevrolet has been a major supporter of the FFA since 1945, providing funding for many key initiatives throughout the years. Company leadership recognized the potential that LifeKnowledge has as a program that will revolutionize the leadership abilities of young people, and Chevrolet is proud to support this life-altering educational program.

Founded in 1910 by race car driver Louis Chevrolet and William Durant, founder of General Motors, Chevrolet quickly became one of the leading car manufacturers. In 1911, the innovative pair entered the auto market to compete against the Ford Model T, and in 1912, they introduced the Classic Six, the first car to reach speeds of 65 mph. By 1917, William Durant became president of General Motors Corp. and Chevrolet merged with GM to become a separate division of the world's largest automaker.

Today, Chevrolet remains part of GM and is America's number-one selling automobile brand. The brand is known for delivering expressive design, spirited performance and great value. Their product line offers 19 different vehicles, including the number-one-selling car and number-one-selling SUV in America.

Not only is Chevrolet committed to developing great cars, but it is committed to the people who drive them. Chevrolet's 60-plus-year relationship with FFA has always been a top priority, and the company is dedicated to assisting FFA members achieve premier leadership, personal growth and career success.

"LifeKnowledge is taking agricultural education to new levels," says Stu Pierce, Chevrolet director, advertising and sales promotion. "It gives students a disciplined, practical approach to leadership, and it promotes leadership all the time, not just during FFA activities or competitive events.

"LifeKnowledge transfers leadership to other parts of life, and it is applicable to any student in any situation. LifeKnowledge will help prepare our youth for a better, brighter future," says Pierce. "Chevrolet's commitment to LifeKnowledge will help members become better citizens, not only professionally but personally as well, and Chevrolet is proud to know that we had a hand in molding our country's future."

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## LifeKnowledge in Action – Planning for a Successful Fundraiser

**By Christine White, Education Specialist, LifeKnowledge Center for Agricultural Education**

Over the last seven years as an agricultural educator and FFA advisor, I have been involved in various fundraisers. During that time, my students sold citrus fruit, cheese, jerky, candy, plants, and the list goes on. My situation is probably very similar to a lot of agriculture teachers in that we participate in fundraisers not for the experience that a student will gain from the activity, but we do it because we need the funds to keep our program running.

Looking back at my fundraising history, I can honestly say that I just focused on the logistics: the product, the price, the time frame, pick-up schedules, packets, advertising and the fine details that surrounded the fundraiser. I never formally positioned my students for success by helping them develop the skills that they needed to be successful during the fundraising activity.

This point really hit home when I had a student come to me and say, "Mrs. White – I quit! I cannot sell fruit!" After visiting with the student, I discovered that he had a bad experience when he went to his first customer to sell fruit. His neighbor – an older lady – chewed him out because last year she had ordered fruit from another organization in the school and the fruit was half rotten. At that point, I realized that I had failed him because I did not equip him with the skills to be successful in handling that situation.

LifeKnowledge has a few lessons that are a natural fit to help train students to be successful in handling difficult situations as well as developing the skills that are necessary to be prosperous during a fundraising activity.

Below are just a few of the LifeKnowledge lessons available to help start the process of teaching the intentional skills students will need during a fundraiser:

- MS.14 Developing Goals
- MS. 33 Approaching New People
- HS. 22 Motivating Factors
- MS. 42 Responding to Audience Feedback
- HS. 84 The need for communication to influence others
- MS. 41 Forming Key Messages
- MS. 43 Answering Questions from Others
- HS.54 First Impressions
- HS.61 Earning Trust



## If It's Worth Learning, It's Worth Celebrating

**From Quantum Teaching, by DePorter, Reardon and Singer–Nourie**

Providing celebrations for your students encourages them to take more ownership and initiate their own learning. It teaches them about intrinsic motivation with out "incentives." Students look forward to learning, making their education into something more than just grades.

You're watching an intense professional football game. The teams work the ball back and forth. One team scores, then the other, then the first again. As the pressure mounts, you watch the teams and notice that for each completed pass, each yard gained, each sack, the players celebrate widely: they dance, yell, pat, hug. Why? Because they know that every step counts.

Those professional players (in fact, championship teams of all kinds) know that each success, each step on the way to the win, accelerates them when it is anchoring a heightened, resourceful state of performance. The high five he gets puts him back to that resourceful state. Then the next time a player goes for a tough play, the positive association of celebration pushes him on.

Most often when we accomplish something, we just move on to the next thing, creating no special impetus to go for it again. As a teacher, you plant seeds of success, always connecting learning and celebrations.

Celebration builds the desire for success, so celebrate often. Here are some fun forms of celebration to use:

- Applause: A tried-and-true technique, it never fails to inspire. Try variations like "round of" applause (clap in a circle).
- Hooray! Hooray! Hooray!: On cue, everyone hops to their feet and yells as loud as they can, "Hooray, Hooray, Hooray!" At the same time they yell, they fling their arms forward and up. This works fantastically when done in a "wave" across the room.
- Whooshes: On cue, everyone claps three times in unison and then sends all of their positive energy to a designated person. This looks like pushing the hands, after the claps, toward the person, yelling "whoosh" at the same time.
- Finger Snap: When you need a quiet acknowledgement, use continuous finger snaps instead of applause.
- Toasts: Just like a party, the whole class toasts someone, celebrating his or her doing or sharing something great (use invisible drinks and glasses).
- Public Posters: To acknowledge individuals or the entire class, like "3rd Period's Genius Rocks!"
- Private Notes: To individual students, acknowledging great efforts, contributions to class, great behavior or acts of kindness.

These are just a few ways to create celebrations in your classroom. If you are interested in learning about some other ways to create celebrations, check out the book *Quantum Teaching* authored by DePorter, Reardon and Singer–Nourie, available online and in bookstores nationwide.

## What's New with LK

### LifeKnowledge at the NAAE Convention in Atlanta!

Want to learn more about LifeKnowledge and how to create an engaging learning environment in your classroom? The LifeKnowledge Center for Agricultural Education will be conducting two workshops on Wednesday, Nov. 29, at the NAAE Convention. Listed below are the times, locations and workshop descriptions.

- **LifeKnowledge and Leadership – Myth vs. Reality**

*Delta II Agriculture Teachers*

**Wednesday, Nov. 29, 2006**

**Session I: 1:30 – 2:45 p.m.**

**Hilton Atlanta – Fayette/Newton**

So you are an agricultural education instructor. You provide leadership training to students and there are plaques on the classroom wall to prove it. If you get a cut, you bleed blue and gold. Do you know leadership? Of course you do. Or do you? Come take a look at what LifeKnowledge is really about and find out if the leadership training you provide is the leadership the world is expecting from all of your students.

- **Do You Orchestrate Learning or Shovel Information?**

*Delta II Agriculture Teachers*

**Wednesday, Nov. 29, 2006**

**Session II: 3:15 – 4:30 p.m.**

**Hilton Atlanta – Fayette/Newton**

Which best describes you as an educator?: A) I orchestrate a symphony of learning, or B) I shovel information? You have watched "teachers" distribute information for years, but how often have you been involved in learning experiences that create "Ah–hah" Moments? Do your lessons capture the attention of students and focus their thinking on the topic? Do you set the context in a global perspective that causes students to see a future value

of the information? Does your language propel learning or inhibit learning? Are your students engaged in learning activities? This workshop will showcase methods to do those very things in your classroom. The presenters will apply the LifeKnowledge lesson format to technical instruction.

## **LifeKnowledge Online (3.0)**

LifeKnowledge Online made its debut at the 79th National FFA Convention. If you were not able to visit the LK interactive classroom, stay tuned to future issues of the LK At Work Newsletter to learn more about LK Online, the new tools, and ways to incorporate them into your program. You will be able to subscribe to LK Online starting January 1, 2007, for \$59 per chapter. LifeKnowledge Online Contact: Christine White, [cwhite@ffa.org](mailto:cwhite@ffa.org) or 317-802-4212.

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# **Eat Dirt!**

**Katie McKee, Agriculture Teacher  
Hackettstown, New Jersey  
2006**

## **Student Objectives:**

### **Objective 1:**

Students will describe the three soil particles which contribute to soil texture

### **Objective 2:**

Students will demonstrate texture changes through changing ratios of particles

### **Objective 3:**

Students will list things found in the organic matter

### **Objective 4:**

Students will demonstrate the action of soil microorganisms

### **Objective 5:**

Students will identify the different categories of how people are classified in our society.

### **Objective 6:**

Students will discuss ways to expand personal understanding of people who seem different.

## **Background:**

Unit: Soil Science

LifeKnowledge Precept(s): Relationships  
Social Growth

LifeKnowledge Lesson: MS.36 Understanding the ways people are different

### **New Jersey's Academic Standard. 5.8: (Earth Science)**

All students will gain an understanding of the structure, dynamics, and geophysical systems of the earth.

### **Key Terms:**

Sand, Silt, Clay, Soil Texture, Organic Matter, Soil Microorganism

## **Logistical Information:**

Time: 80 minutes

Resources: Soil triangle, The Science of Agriculture: A biological approach, Ray V. Herren, Exploring Agriscience, Ray V. Herren, Agriscience, Taped segment of the nightly weather report.

### **Tools, Equipment, Supplies:**

Soil particle samples

Peanut butter (clay) – ask ahead of time about allergies, and nut butter will work or student can have a clay-free soil

Brown sugar (sand)

Cocoa powder (silt)

Gummy bears (dead animals)

Gummy worms (microorganisms)

**2006 Katie McKee**





Pretzel sticks (dead plants)  
Chocolate covered raisins (animal feces)  
Spoons – minimum 1 plastic per student and 1 metal per ingredient  
Bowls – one per student plus ~10 for passing out ingredients  
Napkins  
Note cards prepared with information about soil texture and soil particles  
Lysol Wipes

### **Interest Approach:**

Good morning! Show me your pen, notebook, and shoes! Now that we're all in our seats and ready to start the day, let's settle in and take a deep breath. We're going to take a trip in our heads today.

Allow your eyes to close and imagine you are digging a hole in your backyard. Put your hands in the hole and squish your fingers around the soil. Focus on how the soil feels in your hands. Open your eyes, turn to your neighbor and tell him/her what the soil felt like.

What did you feel that was different from what your neighbor felt? Were you digging in the same kind of soil?

*Allow time for students to share their thoughts after each question.*

Yesterday we talked about the ways soils form. This week we are going to work on how soils affect agriculture so that we can provide a great environment for our plants. Today, we are going to taste what you felt, that's right, we're eating dirt!

### **Summary of Content, Instructional Sequence, Activities, and Strategies:**

**Objective 1:** Students will describe the three soil particles which contribute to soil texture

**Go Get It!** Note cards have been placed around the room. There is one note card that has your name on it. Find the card with your name and bring it back to your seat.

Take a minute and read your card to yourself.

*Allow time for the students to read the card silently to themselves. While students are reading, pass out the note sheet for students to use.*

Use the information on your note card to help complete the note sheet found on your desk. Be prepared to share your information with the rest of your team.

*Allow time for the students to complete the note sheet*

Let's share our information and capture the information from our teammates in our notes.

**2006 Katie McKee**



As each team shares, check your answers against each the responses given.

Team 1: Share your responses to the questions about sand

Team 2: Share your responses to the questions about silt

Team 3: Share your responses to the questions about clay

Team 4: Share your responses to the questions about organic matter

Look at a teammate and say "we did an Awesome Job!" When your table is called, wash your hands completely – remember Happy Birthday! *Humming tune while washing hands ensures long enough washing* Wipe off your table with the Lysol wipes provided while you wait for your table to be called.

Table 1! Table 2! Table 3! Table 4!

*Continue to call tables until all the tables have been called.*

**Objective 2:** Students will demonstrate texture changes through changing ratios of particles

Think back to the beginning of the block when we felt soil and what you just heard about the three soil particles. How would each soil particle feel?

*Allow the students to call out answers in a popcorn response manner.*

There are edible soil particles under this box. We are going to eat soil and enjoy it! But, we can't eat until the end of the block!

*Lift the cover from box to expose the edible soil particles.*

Which item could we use as clay?

*Students should respond with Peanut butter*

Why?

*Possible responses would be because it's smooth, small particles, sticky etc.*

Which could we use as sand?

*Students should respond with brown sugar*

Why?

*Possible responses would be because it's rough, large particles etc.*

Which could we use as silt?

*Students should respond with cocoa powder*

Why?

*Possible responses would be because medium size, smooth/soft etc.*

At your table you will find an envelope. When I say "Go," the team foreperson will open the envelope and read the recipe to the group, and then gather the first ingredient and bring it to your table. Begin distributing it among team members. What questions do you have?

**2006 Katie McKee**



GO!

Raise your hand when you have your first soil particle in your cups. Remember, no eating!

Pass the particle to the table to your right.

The particle you hold now is your second ingredient. Distribute it among your team according to your recipe.

Raise your hand when everyone in your team has the first and second ingredient in his/her cup.

Pass the particle to the table to your right.

The particle you hold now is your third ingredient. Distribute it among your team according to your recipe.

Raise your hand when everyone in your team has the first, second, and third ingredient in his/her cup. Remember, no eating!

Stir!

Odd numbered teams, on “go”, take your cups, move to an even numbered table, and compare your soil to the other teams. Prepare to answer how the soil texture is different. What questions are there?

GO!

What did the soil from the even numbered teams look like?

*Allow time for the students to discuss the question as a group or as a class.*

What did the soil from the odd numbered teams look like?

*Allow time for the students to discuss the question as a group or as a class.*

Why were there differences?

*Allow time for the students to discuss the question as a group or as a class.*

Which soil would hold more water?

*Allow time for the students to discuss the question as a group or as a class. The students should answer with Clay Loam.*

Which soil would have greater pore space?

*Allow time for the students to discuss the question as a group or as a class. Possible answer would be a sandy loam, which would have lower water and nutrient holding capacities but would probably be more permeable and better aerated.*

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Which soil is closest to our soil in Warren County?

*You should adapt this question to reflect the type of soils found in the county you live in. Allow time for the students to discuss the question as a group or as a class.*

What makes an ideal soil for agriculture?

*Allow time for the students to discuss the question as a group or as a class. Possible answers would be holds water w/o becoming waterlogged, enough sand/silt to prevent hardpan when drying out, and silt to increase ability to hold nutrients.*

### **LifeKnowledge Big Picture:**

We've just discussed the components that make soils different. As I look around the room, I see students who are different, and this affects the "texture" of our classroom. Take a look around the room.

Let's think to ourselves for a moment, what makes a person the ideal student? List these traits on a sheet of paper.

*Allow the students to have one minute to create a list.*

When I say "go," share your list with your neighbor. Choose three traits to share with the group. You have two minutes. What questions are there? Go.

Allow the students to have two minutes to discuss their lists. Make an announcement when the students have one minute left.

One minute remaining.

What traits did you list? What are some similarities in the answers shared? In thinking of the ideal student, did you visualize a specific face?

*Have the students share their answers and capture the answers on the board.*

Each of us is different because of our history, upbringing, and physical attributes. None of these traits determines what the ideal student is. In fact, those differences make our classroom and school stronger.

Each of the soils we created is different because of its texture, water holding capacity, and fertility. Just as many traits blend to create the ideal student, the different particles blend to create different types of soils, ideal for different situations.

Using the soil triangle, locate the soil that you created. Share your answer with your neighbor. Have an answer ready to share with the class when you are called on.

*Solicit answers. (Students should recognize the soil types they have been assigned. I use a clay loam and a sandy loam because they are common to our state.)*

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What crops grow well in the clay loam?

What crops grow well in the sandy loam?

Do crops that do well in clay loam thrive in a sandy loam? Why?

**Objective 3:** Students will list things found in the organic matter

Think back to earlier in the week when we talked about what is found in soil. We've used sand, silt, and clay so far today. What part of soil are we missing?

*Students should answer Organic matter. You might need to ask additional questions to prompt the students' thinking such as what is the living part of the soil?*

What is found in the organic matter?

*Possible answers might be dead plants, dead animals, and feces*

Which of the materials on the table could represent dead plants?

*Students should answer Pretzel sticks*

Dead animals? *Students should answer gummy bears*

Animal feces? *Students should answer raisinettes*

*Pass out the items to each of the teams. Remember, no eating!*

Think about what the organic matter does for the soil. Turn and share your ideas with your neighbor.

**Objective 4:** Students will demonstrate the action of soil microorganisms

Think about what is already in your cup. Share with your neighbor.

What have we added to the cup?

*Make sure everything from the cup is on the board - sand, silt, clay, plant matter, animal matter, feces*

What has to happen to the organic matter?

*Students should answer with decomposition*

What helps the OM decompose?

*Possible answers are worms, microorganisms*

How do they help it break down?

*Possible answers are chew and digest*

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What do we need to add to our soil?

*Students should answer with a worm*

As the worms are being passed around when we receive our worm, let's set it on top of your organic matter.

Raise your hand when you have your worm.

What do worms do to the organic matter?

*Possible answers are breaking it down, stir it up*

When I say "decompose," you and your spoon become the worm. Stir with your spoon while making a chewing motion with your mouth. "Decompose!"

Congratulations! You have created and analyzed soil! Think about how we created a different texture from the other teams.

Consider what we learned about water holding and texture.

Write one sentence that explains what the worm does for the soil in your notes.

*Allow the students to have time to capture their sentence in their notes.*

**Bob the Weather Guy:** We've covered sand, silt, and clay, and soil texture, water holding capacity, and organic matter today. Shift your attention to the television while we watch a weather report. Pay attention to phrases used in the report.

*Show a taped copy of the local weather report*

What phrases did you hear?

*Possible responses might be front, moving in, highs, lows, we'll expect etc. Capture the answers on the board or on a flip chart.*

Use these terms and the definitions we captured for soil texture, sand, silt, clay, and organic matter and create a 30 second weather report that explains what we've learned today. You will have ten minutes. What questions do you have?

Work with your neighbor to create the weather report. Begin.

*After ten minutes have passed allow the students to share the weather reports that they created with the rest of the class. The students may eat the soil your soil while each pair presents their report*

### **LifeKnowledge Big Picture:**

Who has a favorite sports team? Which team?

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If soil was a sport, I would be a season ticket holder for the sandy soils team. I would be at every game in a team jersey. I would jump up and down and knock over the drinks and popcorn of the people sitting next to me every time sandy soils scored. I grew up with those South Jersey sandy soils and our peaches and blueberries loved sandy soils. I thought sandy soils were awesome, the best soils ever! I had a prejudice toward sandy soils.

Think about prejudice. What is a prejudice?

Do not write as I write, Focus on your ideas instead. What is a prejudice?

*Possible answer might be an opinion/judgment that causes an unfair attitude about an individual, race, group of people, bias. Write answers on board*

Pick up your pen, hold it in front of you and say “Pen, don’t fail me now! Work quickly!”

Capture our class definition in your notes.

Hold your pen out in front of you and say, “Pen, you were awesome!”

Put your pen down and give it a nap while we discuss some more.

In high school, I took Ag classes and my agriculture teacher tried to tell me that clay and silt were important to our soils too. She told us that clay and silt helped the soil hold water and nutrients. I wouldn’t even write that down! She would say that sandy soils lost water quickly and tended to be low in nutrients. I stopped listening. No one could trash my sandy soils! I had developed a stereotype about sandy soils.

Think about stereotypes. What is a stereotype?

*Possible answers might be an idea you hold on to, ignoring information, or a rigid belief – capture the students’ ideas on the board.*

Pick up your pen, hold it in front of you and say “Pen, don’t fail me now! Work quickly!”

Capture our class definition in your notes.

Hold your pen out in front of you and say, “Pen, you were awesome!”

Put your pen down for a nap.

What is the difference between a stereotype and a prejudice?

*Possible answers might be prejudices are based on ignorance and stereotypes develop when we ignore information, stereotypes assume an entire group is similar*

What harm can stereotypes cause?

Stereotypes happen when we don’t think about individual differences within the group.

Prejudices are based on ignorance. When we don’t know, we make up information. One way to solve this is to learn more about others. Let’s discuss ways to increase our knowledge of people different from us just as we’ve increased our understanding of different soils.

We can increase our understanding of others by doing three things:

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Meet and get to know people who are different from themselves.  
Find ways to stop people from placing prejudices on another.  
Find ways to stop harmful stereotypes against others.

When I say “go,” your team will choose one of these actions and develop a few strategies to do one of them. As a team, pick one of these actions. Develop ways that you can carry out that action. Each group will share strategies. You will have five minutes. What questions do we have?

“GO”

*Allow the students time to work when one minute is left make an announcement.*

One minute.

Hug your pen tightly in your hand.  
Capture the strategies in your notes.  
What strategies did you develop?

You shared great ideas today about how to maximize getting to know people who are different from yourselves.

Think about prejudice and stereotypes. Write two sentences about prejudice and stereotypes in your notebook. Be prepared to share.

What did you learn about prejudice and stereotypes today?

We’ve experienced different types of soil today and celebrated the differences among soils and the differences among the people in the classroom. Focus on the differences among soil particles and how they affect soil texture.

Review your notes and highlight what you think is important.

What questions do you have?

Great! Now that you have reviewed your notes, let’s close our notebooks and complete the quiz. Turn your quiz over when finished and sit quietly until all students are finished.

*When all students are finished, collect the quizzes and go over answers.*

*Have the students clean up by putting all of containers and spoons in the trash. Instruct the forepersons – wipe the desks down with the Lysol wipes.*

Have your best day yet!

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Name: \_\_\_\_\_

## Soil Texture Quiz

### **Part One: Matching**

*Write the letter of the correct term next to the definition*

a. water-holding capacity                      b. soil texture                      c. textural triangle

- \_\_\_\_\_ 1. The fineness or coarseness of soil particles.  
\_\_\_\_\_ 2. The ability of soil to retain moisture for plants.  
\_\_\_\_\_ 3. A chart used to classify soil according to its coarseness or fineness.

### **Part Two: Short Answer**

*Instructions: Use the space provided to answer the following questions:*

4. Classify the following soil particles as small, medium, or large in comparison to each other and on how they feel:

a. sand –

b. clay—

c. silt—

*Answers:*

1. *b*

2. *a*

3. *c*

4. *Short Answer*

*a. sand –large rough particles, feels rough in hand*

*b. Clay – smallest particles, sticky texture*

*c. Silt – medium size particles, feels smooth*

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