

# Green Ribbon

## 2014-2015 District Nominee Presentation Form

### CERTIFICATIONS

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#### District's Certifications

The signatures of the district superintendent on the next page certify that each of the statements below concerning the district's eligibility and compliance with the following requirements is true and correct to the best of the superintendent's knowledge.

1. The district has been evaluated and selected from among districts within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental education.
2. The district is providing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review.
3. OCR has not issued a violation letter of findings to the school district concluding that the nominated school district has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
4. The U.S. Department of Justice does not have a pending suit alleging that the school district has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
5. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the school district in question; or if there are such findings, the state or school district has corrected, or agreed to correct, the findings.
6. The district meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

### U.S. Department of Education Green Ribbon Schools 2014-2015 District Sustainability Award

Name of Superintendent: Mr. Brian Harvey

(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

District Name: Oxford School District

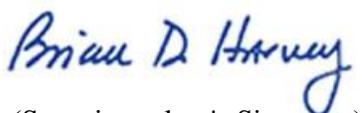
(As it should appear on an award)

Address: 224 Bramlett Blvd., Oxford, MS 38655

Telephone: 662-234-3541 Fax: 662-232-2862

Web site/URL: E-mail: [www.oxfordsd.org](http://www.oxfordsd.org) - [bharvey@oxfordsd.org](mailto:bharvey@oxfordsd.org)

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.



(Superintendent's Signature)

Date: January 26, 2015

# Green Ribbon

## Nominating Authority's Certifications

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the district's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The district is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental education.
2. The district meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency:

Name of Nominating Authority:

(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

*Christine Phillee*

Date: 1/29/15

(Nominating Authority's Signature)

## SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

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Provide a coherent "snapshot" that describes how your district is representative of your jurisdiction's highest achieving green school efforts. Summarize your strengths and accomplishments in all three Pillars and nine Elements. Then, include documentation and concrete examples for work in every Pillar and Element.

## SUBMISSION

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The nomination package, including the signed certifications and documentation of evaluation in the three Pillars should be converted to a PDF file and emailed to [green.ribbon.schools@ed.gov](mailto:green.ribbon.schools@ed.gov) according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509

Expiration Date: February 28, 2015

### Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email [ICDocketMgr@ed.gov](mailto:ICDocketMgr@ed.gov) and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

The Oxford School District's Strategic Plan (attached) demonstrates our long-term plan and dedicated actions to reduce environmental impact and costs, improving the health and wellness of students and staff, and providing an effective environmental and sustainability education to our students. Our commitment to these important measures are visible daily throughout our 8 school campuses, where we educate over 4,000 students in grades K-12.

### **PILLAR I**

To show our district's commitment to saving energy, the Oxford Green Schools program (attachment) was implemented in 2010.

The Green Schools Cost Savings Report (attachment) and Kilowatt Hours (kWh) Usage Savings Report (attachment) show the district's recent energy cost savings. Energy saving costs continue to positively improve each year due to the district's energy cost saving measures.

The newly constructed Oxford High School (OHS) is on its way to be the first LEED-certified high school in Mississippi with more than \$6 million in overall energy costs savings and avoided costs *over* the next 15 years (Johnson Controls Fact Sheet attachment). The use of high albedo concrete helps the new building design by reducing greenhouse gas (GHG) emissions and lowering the potential heat gain to the building. Sensory lavatories with timers conserve water.

Onsite water detention lowers the tax on the local established infrastructure. Low flow toilets and urinals are used throughout the district in all school campus bathrooms. Other schools throughout the district have pop-up valves allowing water to flow for a predetermined amount of time, and kitchen sinks throughout the district are supplied with foot pedal valves.

Through Good Food for Oxford Schools (GFOS), permaculture principles are employed at 2 school gardens. All school gardens are built into natural landscapes with rain barrels and irrigation systems in place (attachment: GFOS Annual Report).

Recycling of plastic, paper and cardboard is practiced at every school. The City of Oxford provides recycle tubs of certain colors for separation of recyclables, and recycling is picked up weekly. OHS has 3 City of Oxford recycling bins where all cardboard used is placed to be recycled.

OSD partnered with the City of Oxford Pathways Commission to place biking and walking lanes dedicated for student transportation around and between school campuses. Oxford school bus drivers do not idle at schools for an excessive amount of time while waiting on students to load and unload, a practice covered in staff development exercises. Approximately 2,100 out of 4,150 students ride OSD buses.

The Mississippi State Department of Health has completed radon screening in 3 schools with plans to perform radon screening in every school (attachment).

### **PILLAR II:**

OHS uses Energy Recovery Units, which pretreats incoming fresh air to reduce humidity, and it has humidification equipment to control interior air. For the school building's design this means that the mechanical equipment doesn't have to cool the building's air to 72 degrees, but can cool the building's to 76 degrees instead; this is the driving force behind the high school's mechanical design.

All employees receive online asthma training (attachment) covering procedures to minimize students' asthma risks while in the school environment. The professional development program provides

procedures to take when asthmatic students have an attack and also covers why it's important to review asthma action plans for all students with physician-treated asthma.

OSD school cafeterias have increased cooking from scratch menu items from 40 percent to 75 percent while increasing local purchasing for cafeteria menus including a Harvest of the Month. Schools have salad bars, and combi-ovens replaced deep fat fryers. Four of our schools have gardens. Cooking demos are provided in our schools as well as Food Day activities (attachment).

The district's school wellness policy, Board Policy JG, (attachment) was adopted so all students can have the knowledge and skills necessary to make nutritious food choices and enjoyable physical activity choices for a lifetime. OSD provides a fitness facility and weekly group exercise classes for all school district employees.

## **PILLAR**

### **III**

In school gardens, students learn about key relationships between dynamic environmental, energy and human systems. Good Food for Oxford Schools (GFOS) developed and offers curriculum and lesson plans (attachments) to develop STEM content, knowledge and thinking skills. Our school gardens provide the perfect setting for engaging students in a hands-on and interactive manner: they promote scientific investigation and critical thinking, both of which are key components of STEM education.

Through Oxford Green Schools, each school campus has a Green Team that involves the whole school in the energy conservation effort by learning about green careers (attachment).

Scott Center students work on civic knowledge and skills by growing seedlings for other school programs. Student-led food clubs exist at our middle school and high school, engaging youth to lead their own changes. The food clubs also help coordinate GFOS community events (attachment) through the school year.

# **Our Strategic Plan**

## **Academic/Instructional Strategic Objectives & Organization Goals**

**Goal I: The District will utilize a data-driven process to ensure that each student receives exemplary instruction that will be measured by monitoring student progress. (Values 1, 3, 4, 6, 7)**

1. Increase the percentage of students who earn a high school diploma or acceptable alternative within four years of entering high school.
2. Increase the percentage of college and career ready students who graduate from Oxford High School in the four subject areas as indicated by the ACT report.
3. Increase the percentage of Oxford High School graduates employed by the top five local employers.
4. Increase the percentage of students meeting promotion standards in grades 3-8 who achieve a language and math assessment level of proficient or advanced.
5. Increase the percentage of students who read on grade level.
6. Increase the student average daily attendance rate district-wide.

**Goal II: The District will provide an exceptional staff with high expectations for all students. (Values 1, 3, 4, 5, 6, 7, 8)**

1. Develop and maintain a comprehensive and relevant professional development program that supports innovative and creative teaching methods as reflected in annual teacher evaluations.
2. Improve the recruiting and hiring system to attract and identify highly qualified educators.
3. Recruit and attract highly qualified minority teachers to reflect the diversity that exists within the student body.
4. Induct, support, and retain exceptional faculty members.
5. Increase the teacher and staff average daily attendance rate district-wide.
6. Create an environment that facilitates successful professional learning communities.

### **Facilities/Services Strategic Objectives & Organization Goals**

**Goal III: The District will provide safe, secure, and drug-free campuses. (Values 1, 2, 6)**

1. Develop short-term and long-term plans to address building and renovation issues associated with enrollment growth, energy efficiency standards, security, and landscaping.
2. Ensure safe, secure, and drug-free campuses by communicating clear expectations for staff and students and by developing a prevention-based approach to decrease the number of discipline incidents.
3. Create an atmosphere of trust with caring adults who provide opportunities for students to express their concerns and problems.

**Goal IV: The District will provide quality customer service to our students, parents, faculty, staff, and community.**

1. Customer Service %

**Goal V: 5 The District will provide a technology rich and energy efficient educational setting that reflects environmentally conscious practices**

1. Implementation of a 1 to 1 Initiative, scope yet to be determined.

### **Communication/Collaboration Strategic Objectives & Organization Goals**

**Goal VI: The District will ensure timely, open communication and collaboration to achieve continuity between schools. (Values 2, 3, 4, 5, 7)**

1. Align administrative procedures to ensure consistency between schools in an effort to eliminate confusion among parents, students, faculty, and staff.

**Goal VII: The District will establish and maintain an exemplary public/community relations program.**

1. Expand ongoing communications with parents to increase parental participation and community engagement.

### **Community/Family Partnership Services Strategic Objectives & Organization Goals**

**Goal VIII: The District will cultivate a partnership with parents and community to maximize the support of every student. (Values 2, 3, 4, 5, 6, 7, 8)**

1. Increase opportunities for parent and community involvement through partnerships that support school initiatives.
2. Total Reach

# Oxford Green Schools

Oxford School District has committed to saving energy in a big way! Energy efficiency is part of the districts long term plan, and Oxford has implemented the Green Schools program. Starting in the fall of 2010 Oxford schools were chosen to participate in The Alliance to Save Energy's Green Schools Program. This program was funded by TVA, and was a two-year pilot program aimed at making behavioral change to reduce the schools' use of electricity. Our schools did a fantastic job. Upon completion of this two year program, we wanted to keep this great work going. Oxford School District has joined with Oxford Electric to fund a continuation of the Green Schools Program. The work we do helps the school districts save on energy costs affords students the opportunity to become environmental stewards and energy efficiency advocates in their schools, homes and communities. The goals of the Green Schools Program are to:

- \*Educate students, faculty, staff, and the school community about energy efficiency and its relationship to the environment and the economy.
- \*Provide immediate energy savings in schools and homes through no-cost behavior and operations changes and to provide longer term savings by encouraging retrofits; and,
- \*Strengthen academic learning using hands-on, project-based instruction and tools.

Here in Oxford, students and teachers are excited about saving energy in their schools, and have made great efforts to do so. Each school has a team of teachers and students who work all year encouraging staff and students to make simple effective changes. Each school has two energy auditing tool kits, which are used to go through their buildings looking for things they can do to make positive changes. Green Teams will also be involving the whole school in the effort, learning about green careers and spreading the message of energy conservation to their homes and communities.

## Making History in Mississippi

Johnson Controls, the global leader in building efficiency, is proud to partner with Oxford School District. The district's commitment to comfortable, safe and sustainable facilities will help students learn and teachers inspire. As a result, the community celebrates 2014 with the construction of a new energy efficient High School which features state of the art technologies and energy conservation measures.

## Celebrating Success- Educational, Environmental & Financial Benefits

- The High School is expected to be awarded the first LEED-certified High School in the State of Mississippi.
  - \* Reduced energy use- Equivalent to more than 200 homes annually
  - \* Decreased carbon footprint- Equivalent to carbon sequestered by 537 acres of pine forest annually
- More than \$6 million in overall savings and avoided costs over the next 15 years.

## Cutting-Edge Technologies

- A safe and secure environment for students, teachers, and administrators which features life safety and security systems including fire alarm, IP surveillance cameras and access control.
- An enhanced learning environment with the latest in audio-visual equipment including LED screens in every classroom.
- Better communication throughout the building with intercom and voice over IP systems.
- New streaming video, handheld device and wireless capabilities are possible through the high speed, high density Local Area Network (LAN) and Wireless Local Area Network (WLAN) which support all low voltage and information technology systems.
- Accurate schedules with a synchronized clock system.
- The HVAC design incorporates many of the newest technologies in the market.
- A modular Central Energy Plant optimizes its size, construction costs and ongoing maintenance strategies.
- A Building Automation System efficiently manages a variety of systems including HVAC, lighting and security.

## Ensuring Fiscal Responsibility

- An Energy Services Agreement allowed the District to leverage the projected utility and operational savings resulting from a more efficient and sustainable High School over the lifecycle of the building. These savings more than offset any additional first costs associated with its enhanced design.

## About Johnson Controls

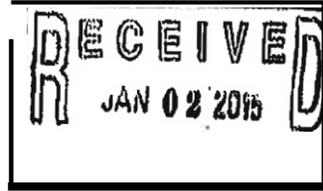
Johnson Controls is a global diversified technology and industrial leader serving customers in more than 150 countries. Our 170,000 employees create quality products, services and solutions to optimize energy and operational efficiencies of buildings; lead-acid automotive batteries and advanced batteries for hybrid and electric vehicles; and interior systems for automobiles. Our commitment to sustainability dates back to our roots in 1885, with the invention of the first electric room thermostat. Through our growth strategies and by increasing market share we are committed to delivering value to shareholders and making our customers successful. In 2013, Corporate Responsibility Magazine recognized Johnson Controls as the #14 company in its annual "100 Best Corporate Citizens" list. For additional information, please visit <http://www.johnsoncontrols.com>.

*This data is based on construction industry economic multipliers generated by the Regional Input-Output Modeling system (RIMS) from the Bureau of Economic Analysis, a bureau of the U.S. Department of Commerce.*



MISSISSIPPI STATE DEPARTMENT OF HEALTH

December 19, 2014



Mr. Brain Harvey, Superintendent  
Oxford Public School District  
224 Blamlett Boulevard  
Oxford, Mississippi 38665

Dear Mr. Harvey:

Subject: Radon Screening at the Oxford High School

Enclosed are the results of the radon screening conducted at the Oxford High School located in Oxford, Mississippi during the period of December 11, 2014 – December 15, 2014.

Within the Oxford High School, all the detectors measured radon concentrations less than four picocuries per liter (4 pCi/L) of indoor air, the Environmental Protection Agency's action level. Since the results are below 4 pCiL, no long term screening, or mitigation is warranted at this time. Rescreening is recommended after a three to five year period, or if renovations to the building's structure are made.

Your efforts and the assistance of your staff in helping with the program are greatly appreciated. Should you have any questions, or if you need assistance, please contact Della Youngblood at (601) 991-6076, or leave a message at 1-800-626-7739.

Sincerely,

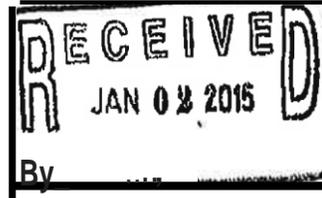
A handwritten signature in black ink, appearing to be "Della Youngblood".

Della Youngblood, M.S.  
Health Physicist  
Division of Environmental Health



MISSISSIPPI STATE DEPARTMENT OF HEALTH

December 19, 2014



Mr. Brain Harvey, Superintendent  
Oxford Public School District  
224 Bramlett Boulevard  
Oxford, Mississippi 38665

Dear Mr. Harvey:

Subject: Radon Screening at the Oxford Intermediate School

Enclosed are the results of the radon screening conducted at the Oxford Intermediate School located in Oxford, Mississippi during the period of December 4, 2014-December 6, 2014.

Within the Oxford Intermediate School, all the detectors measured radon concentrations less than four picocuries per liter (4 pCi/L) of indoor air, the Environmental Protection Agency's action level. Since the results are below 4 pCi/L, no long term screening, or mitigation is warranted at this time. Rescreening is recommended after a three to five year period, or if renovations to the building's structure are made.

Your efforts and the assistance of your staff in helping with the program are greatly appreciated. Should you have any questions, or if you need assistance, please contact Della Youngblood at (601) 991-6076 or leave a message at 1-800-626-7739.

Sincerely,

A handwritten signature in black ink, appearing to read "Della Youngblood".

Della Youngblood, M.S.  
Health Physicist  
Division of Environmental Health

# Employee Health Training

*Welcome!*

Thank you for helping us make our school district a healthier and safer place!

- **Asthma Training 2014-2015**

This training video for district employees is accompanied by a powerpoint presentation and a follow-up quiz.

- **Food Allergy & Anaphylaxis Emergency Training 2014-2015**

This training video for district employees is accompanied by a powerpoint presentation and other resources.

- **Suicide Prevention Training 2014-2015**

This training video for district employees is accompanied by a powerpoint presentation and a follow-up quiz.

- **Employee Epi-Pen Training for Allergy Anaphylaxis**

Please watch the following 20 minute presentation and then sign in to complete the quiz.

<http://www.allergyhome.org/schools/food-allergy-school-staff-training-full-length-module/>

- **Employee Food Safety Training**

[http://healthyschoolsms.org/ohs\\_main/instructionalvideo.htm](http://healthyschoolsms.org/ohs_main/instructionalvideo.htm)

# **GOOD FOOD FOR OXFORD SCHOOLS**

## **HISTORY**

Good Food for Oxford Schools (GFOS) was started in January 2013 as an initiative of the Oxford School District, led by Richmond Smith and Sunny Young. It is a project to improve the eating habits of Oxford children, educate them on the importance of eating well, and to support local farms and industry by using our purchasing power—as well as encourage families in the district to do the same. GFOS was initially funded by a USDA Farm-to-School Planning Grant.

## **OUR MISSION**

The GFOS mission is to leverage “farm to school” principles to bring local farm produce into school cafeterias that serve more cooked-from-scratch and fresh menu items while simultaneously educating students and their families on the importance of eating well.

## **WHO WE ARE**

Sunny Young  
Program Director

Richmond Smith  
Nutrition Director  
Oxford School District

Lauren Williams  
Projects Coordinator

## *Advisory Council Members*

Marian Barksdale  
Marie Barnard  
Betsy Chapman  
John Currence  
Doug Davis  
John T. Edge  
Astria Goolsby

Mary Hartwell  
Luke Heiskell  
Rose Hickey  
Dr. Henry Johnson  
Kathy Knight  
Joel Miller  
Katie Morrison

Dr. Catherine Phillips  
Betsy Smith  
Elizabeth Speed  
Melinda Valliant  
Lynn Wilkins

## Quick Facts

Here's some of what GROS has accomplished this year:

75% of school meals are now *prepared from scratch*

\*During the 2013-2014 academic school year, the Oxford School District spent over \$8,800 on *locally sourced food*—that's money invested in our local farmers and economy!

\**School gardens at 4 schools* (The Scott Center, Bramlett, Della Davidson, and Oxford Elementary) are getting children excited about growing their own food!

\*Due to new menus and a salad bar at the high school *participation in the school lunch program* continues to increase

\*GFOS sponsored 8 *Community Outreach* events

\**Fostering youth leadership* through Food Clubs at Oxford High School and Oxford Middle School

### The GFOS Model

Good Food for Oxford Schools increases knowledge of delicious, healthy, fresh, local foods and extends this learning from classroom to cafeteria—and out into the community.

# Cafeteria

## Cooking from Scratch:

This year's *new* menu items include:

- \*Baked chicken with sides
- \*Chicken-vegetable stir-fry
- \*Ham & vegetable fried rice
- \*Chicken pot pie
- \*Meat & cheese quesadillas

These are replacing overly processed foods such as chicken nuggets

Five of the school district's deep fryers have been replaced with Combi ovens to provide baked rather than deep fried foods

## Fresh Fruits & Vegetables

\*Fresh, whole fruit is now a daily option available at every school in the district

\*Thanks to the High School Food Club, the high school cafeteria now features a salad bar, which has led to increased participation in the lunch program

## Staff Engagement

\*Staff have been provided with support and equipment to help them adjust to the program changes

\*Food Service Managers attended farm-to-school conferences in Washington, D.C. in 2013 and in Austin, TX in 2014

\*GFOS is working with school teachers to connect classroom content with healthy choices in the lunch line

# Harvest of the Month

## Learning in the Cafeteria

- \*The Harvest of the Month day featured a locally-sourced menu item
- \*Advertising and educational programming taught about the significance of consuming local products
- \*The 2013-2014 academic year saw 8 Harvest of the Month events at every school in the district

## Sourcing Local Products boosts the Local Economy

- \*The Harvest of the Month program allowed students monthly opportunities to learn about and taste produce that was grown right here in Mississippi
- \*The Oxford School District supported the local agricultural economy by spending over \$8800 this year on local produce for the cafeterias

### September

Watermelons from Richardson Farms in Senatobia, MS

### October

Southern Peas from Churchill Produce Farm in Natchez, MS

Tomatoes from Holmes County Food Hub in Durant, MS

Collard Greens from Eubanks Farm in Lucedale, MS

### November

Sweet Potatoes from Jones Farm in Huston, MS

### December

Cucumbers from St. Bethany Fresh in Pontotoc, MS

### February

Tomatoes from St. Bethany Fresh in Pontotoc, MS

### April

Strawberries from Brownlee Farms in Red Bay, MS

### May

Lettuce from Yokna Bottoms Farms in Oxford, MS

## CLASSROOM

### School Gardens

\*GFOS took on programming of the *Scott Center's* greenhouse and have helped them start a garden plot

\*Garden plots were started this year at both *Della Davidson and Bramlett Elementary Schools*

\*Audrey Sollie and Reed Jourdan from Camp Lake Stevens were instrumental in developing the garden plots at Della Davidson

\*Bramlett Elementary's garden beds were designed by local permaculture consultant Ben Koltai. The layout of the garden simulates optimal natural growth patterns

\*Each kindergarten class at Bramlett had a garden plot. Some students tasted homegrown strawberries for the first time

\**Oxford Elementary's* garden continued to receive attention from their class-based "Garden Clubs"

### Oxford Elementary Program Expansion

\*GFOS staff and volunteer Katelynn Dillard taught lessons on plant biology and agriculture to 6 classes for half an hour each week. She was assisted by Brittany Harris of Nutrition and Hospitality Management

### Eating Good.....and Moving Like We Should!

\*This program is through a partnership with the University of Mississippi's Department of Nutrition and Hospitality Management provides nutrition education to students throughout the district

\*They have been extremely supportive of GFOS finances and programming this past school year

### Food Clubs: Fostering Health Leadership

\*Both the High School and Middle School now have Food Clubs

\*In July 2013, two Food Club Members attended a conference in California, where they learned leadership and advocacy skills related to nutritious food choices.

## Lesson 2: Seed Parts

**Class:** Oxford Elementary 1st and 2nd grade

**Time:** 30 minutes

**Objective:** To understand the parts and functions of seeds.

### Standards Met:

MS 1<sup>51</sup> Grade Science:

Objective 2.a. Recognize that most things are made of parts

Objective 3.e. Identify the basic needs of plants and animals and recognize that plants and animals both need to take in water, animals need food, and plants need light.

Objective 3.f. Identify and label the parts of a plant.

**Vocabulary:** Seed coat, germination, embryo, cotyledon

### Materials:

Soaked lima bean seeds

Paper towels

Optional:

- \* Magnifying glasses
- \* Additional seeds to use as examples

### Teacher Background:

A seed is made up of three parts including an embryo (baby plant), seed coat, and cotyledon *cottle-eden* (seed food). Under the right conditions, the embryo can grow into a whole new plant. The seed coat protects the embryo until conditions are right for it to grow and the cotyledons provide food for the growing embryo (baby plant) until the young plant is able to make it's own food through photosynthesis.

### Lesson:

1. Introduce lesson by referring to the "Parts of the Plant" worksheet we colored last week
  - a. Worksheet includes the main plant parts except one very important piece: SEEDS!
  - b. Bonus question: where would we find the seeds on the plant picture? (Answer: flowers)
2. Explain that seeds are all around us, and some of them are edible!
  - a. Rice, almonds, lentils, beans -they are all seeds
3. Show slideshow of the various seeds, explaining that they start as little nuggets and transform into plants, releasing seeds, and starting the process over again

- a. Seeds only grow under the right conditions – what do plants need to grow?
4. Explain that we are going to investigate how seeds grow -we are all "seed scientists!"
5. Display seed part diagram, and explain that we are going to find each of these parts
  - a. Seed coat
    - i. Acts like our jacket, keeps the nasty stuff out, protects seed
    - ii. A thick seed coat means that the seed can be planted deep in the soil and handle harsh weather; a delicate seed needs to be planted closer to the light
  - b. Seed food supply (cotyledon)
    - i. Acts like our cupboard or pantry, providing us all the food we need while we're in our house – if we need more, we'll have to go outside and leave the seed!
  - c. Baby seed (embryo)
    - i. This is where the leaves and stem come from, and when the time is right -with all the right elements – the plant will grow!
6. Pass out paper towels to each student
7. Distribute one or two seeds to each student
8. Demonstrate how to dissect the seed plant and identify each of the seed parts
9. Monitor class to ensure understanding

**Extra:**

Sing "Seeds Need Soil" if time allows connecting the things seeds need in order to germinate.

**Resources:**

[http://www.aginclassroom.org/School%20Gardens/School\\_Gardening\\_Lesson\\_Plans/Seeds%20Lesson%20-%20Grade%202%20-%20%20Look%20Inside%20A%20Seed!.pdf](http://www.aginclassroom.org/School%20Gardens/School_Gardening_Lesson_Plans/Seeds%20Lesson%20-%20Grade%202%20-%20%20Look%20Inside%20A%20Seed!.pdf)  
[http://dug.org/storage/school-garden-curriculum/Introducing\\_the\\_Seed.pdf](http://dug.org/storage/school-garden-curriculum/Introducing_the_Seed.pdf)  
<https://docs.google.com/a/foodcorps.org/document/d/11mWsxirziEVtHzguPvF0yljTltygVYwDbIsefjaTUYQ/edit>  
<http://sciencenetlinks.com/student-teacher-sheets/what-are-parts-seed/>  
<http://sciencenetlinks.com/lessons/look-at-those-seeds-grow/>

# **GOOD FOOD FOR OXFORD SCHOOLS CURRICULUM PACKET**

## **Pre-K/Kindergarten**

### **Science**

Edible v Non-edible.webloc

Nitty Gritty Soil.we bloc

Pieces of Soil/Soil Sift#A6AEB7

Soil Exploration.webloc

Winter in the Garden.webloc

### **Math**

Kindergarten - Shape Gar#A6AEB1

Weed Sorting and Countin#A6AEBD

### **Social Studies**

Kindergarten- The Givin#A6AEB3

### **Language Arts**

Changing Seasons and Cha#A6F62C

### **Other Helpful Resources**

<http://www.fns.usda.gov/tn/reso#A6AEC1>

Preschool.webloc