

A Trail To Every Classroom (TTEC) Curriculum Development Tool

UNIT DESIGN COVER SHEET

Author contact: **Mel Sunderland, Jill Fidazzo,
Cindy Murdough**



School name, state and town: **Conrad Weiser School District,
Berks County, PA**

Title: **Scout It Out**

Abstract/Vignette: *We would like to add a fitness trail with beds of native plants to help with drainage and to make the area more trail like. This will help students understand the importance of native plants and evasive species, the expenses and experience of growing plants.*

Grade level(s): Please check all that apply.

- K-2 3-5 6-8 9-12 College and Lifelong Learning

Discipline: Please check all that apply.

- Art and Music Health and PE Foreign Language
 Literature and Language Arts Mathematics Science
 Social Studies and Geography History Technology

Year Developed: **2010**

Period (month, week, year): **Year**

Teaching environment:

- In the Classroom (indoors) On the Trail
 In the Community Online/Virtual

A Trail to Place-Based Service-Learning Curriculum

Connecting Youth & Communities
Along the Appalachian Trail



Big Idea

What is the main idea you want your students to come away from the unit knowing? Our middle school grounds consist of grass and asphalt. We would like to add a fitness trail with beds of native plants to help with drainage and to make the area more trail like. This will help students understand the importance of native plants and evasive species, the expenses and experience of growing plants.

Start Here!

State Standards

(Objectives/Anchors/Outcomes)

Math: 2.3.6.D; 2.3.6.F; 2.4.6.A ;2.6.6.A 2.6.6.B; 2.7.6.A ;2.7.6.B
Language arts: 1.2.6.E; 1.2.6.D; 1.4.6.B
1.4.6.C; 1.5.6.D Art: 9.3.5.C
Environmental science: Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations
Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientist to analyze and qualify results of investigations
Develop descriptions, explanations, and models using evidence, have logically consistent arguments and are based on scientific principles, models and theories
Use math in all aspects of scientific inquiry.

Skills and Habits of Mind

What are the academic or life skills students will gain from this unit? What habits of mind do you expect them to demonstrate? Think all disciplines.

1. Realize the importance of native plants and their uses.
2. Using environmentally sound methods to prepare and care for plants and beds
3. Learn the importance of exercising
4. Conveying to the community the importance of native plants and trails
5. Caring for the environment
6. Using science and mathematics to gain data and make decisions about the plant beds.

Essential Questions (Unit Objectives)

What are native plants and their characteristics? How could we select appropriate native plants for given ecosystem? What is involved in planting, monitoring and maintaining native plants? How would we design an appropriate bed for a given area? How would we create a brochure to invite community to the newly created beds? What is the proper letter writing format for a persuasive business letter? How would we measure and mark 2 meters on both sides of path for plant beds? How would we find area and volume of plant beds? After visiting an environmental farm, how would we investigate environmentally sound ways to prepare plant beds for future planting?

Student Role (Youth Voice)

How will you guide your students to express ideas, be involved in project decisions, and evaluate outcomes? Introduce students to native plants to research for in the beds. Guide students in designing and maintaining the beds. Guide students to design a brochure to inform the community of the newly designed beds by the trail. Help students discover how organic farms maintain plants with environmentally sound alternatives.

Community Connections

What opportunities or needs exist in your school or community that could be addressed by a student project related to your big idea for learning?

Students and parents can use the trail for family fitness and access other trails.
Students can help parents with their backyard designs and incorporating native plants.
Students can share with the community the trail with native plants.
Students will be more aware of native plants when hiking at need camp and on a part of the Appalachian Trail.

Service Project

What project(s) could your class undertake that would actively engage your students in learning about this theme? What could the final product be? Students will measure and plan the beds in which native plants will be planted on either side of the trail. Students will research native plants and find the most appropriate for the area. Students will help prepare the beds, plant the native plants and maintain the beds and plants. Students will create brochures for the community to use the new trail with information about the native plants. Students will evaluate the native plants along part of the Appalachian trail at need camp(environmental camp).

Partnerships & Benefit(s)

Who are potential community partners that could assist you in this project? What are the potential benefits for your class and your partners of working together?
Lebanon Conservation District
Berks County Horticultural Society
Hawk Mountain Bird Sanctuary
Blue Marsh (US Army Corps of Engineers)
Borough of Robesonia
Edge of the Woods Native Plant Nursery
Sugarbush Nursery

Resources

Describe resources (books, articles, materials, supplies) you will use to support this unit?
Eastern Pennsylvania and Wildlife Guide by Scott Weidensaul
Guide to Gardening for Life in Southeastern Pennsylvania by Bucks County Audubon Society
Urban and Suburban Meadows by Catherine Zimmerman

Models & Examples

How will students understand the expectations for their project? What exemplars of student work will they see? What opportunities will there be for them to critique each other's work?
Students will visit high school agricultural department's native plant garden.
Students will follow rubrics for brochure.
Students will view professional landscaping drawings.
Students will view appropriate writing examples.

Reflection

How will reflection be built in to your curriculum and activity(ies)?
Journaling by the gardens
Student survey and suggestions about the project
Head heart hand
Monitoring of the garden
Graffiti about benefits of native plants

Project Name: Scout It Out
Teacher(s): Mel Sunderland, Jill Fidazzo and Cindy Murdough
Grade 6

Your Evaluation of the Unit

How will you evaluate the unit and make note of what worked well and what could be improved? How will you analyze and interpret project outcomes?

Graded rubrics for brochures and letters.
Graded research report on native species
Journals and data sheets written about the gardens
Design competition with designs displayed throughout the sixth grade hallway

Final Celebration

How will you celebrate the success of your unit and share its results with the school and community?

"Picnic on the Path" student have a picnic during lunch to celebrate the garden.
Brochure circulated throughout the community.
Article for the school newspaper

Student Assessment

How will you assess student learning? How will you know if they have met the goals for the established outcomes?
Graded rubrics for the brochures, letters.
Submitted designs of native gardens
Data sheets for native plant monitoring
Participation in the planting of the garden
Graded research projects with illustrations of the native garden
Identification sheet of native plants on Appalachian Trail

Scout It Out

Big Idea

Students will identify native plant species, their habitats and uses in the environment.

Students will design, plant and monitor gardens with native species by the walkway leading to the school.

State Standards

Math

2.3.6.D Perform basic conversions within the metric and customary systems

2.3.6.F Estimate and verify measurements of length, perimeter, area, volume, capacity, temperature, time, weight and angles

2.4.6.A Use models, properties and relationships to draw conclusions and explain reasons for conclusions

2.6.6.A Gather data from a variety of appropriate sources

2.6.6.B Select an appropriate method to organize data; select an appropriate format to display data

2.7.6.A Collect data and estimate the likelihood of outcomes of an event

2.7.6.B Organize data collected in a simulation and select an appropriate format to display the data

Environmental Science

Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations

Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientist to analyze and qualify results of investigations

Develop descriptions, explanations, and models using evidence, have logically consistent arguments and are based on scientific principles, models and theories

Use math in all aspects of scientific inquiry

Reading/Writing

1.2.6.E Read, understand and respond to essential content of text and documents in all academic areas

1.2.6.D Draw inferences and conclusions based on a variety of information sources, citing evidence from texts to support generalizations

1.4.6.B Write multi-paragraph informational pieces (letters, descriptions, reports, instructions, essays, articles and interviews) Use relevant graphics (maps, charts, graphs, tables, illustrations, photographs)

1.4.6.C Write persuasive pieces. Include a clearly stated position or opinion. Include and develop supporting points using meaning, convincing evidence and properly cite.

1.5.6.B Develop content appropriate for the topic. Gather, organize, and determine validity and reliability of information. Write paragraphs that have details and information specific to the topic and relevant to the focus.

Art

9.35.C. Classify works in the arts by forms in which they are found (e.g., farce, architecture, graphic design).

Essential Questions

- What are native plants and their characteristics?
- How could we select appropriate native plants for given ecosystem?
- What is involved in planting, monitoring and maintaining native plants?

- How would we design an appropriate bed for a given area?
- How would we create a brochure to invite community to the newly created beds?
- What is the proper letter writing format for a persuasive business letter?
- How would we measure and mark 2 meters on both sides of path for plant beds?
- How would we find area and volume of plant beds?
- After visiting an environmental farm, how would we investigate environmentally sound ways to prepare plant beds for future planting?

Student Role

1. Students will complete a research project about native plants their ideal habitats and benefits.
2. Students will create scale models of the garden and select genetically appropriate native plants.
3. Students will learn the proper formats and write letters of appreciation and proposals.
4. Students will create brochures to inform the community about the garden project.
5. Students will plant and maintain the garden along the pathways and a rain garden by the playing fields.
6. Students will write letters of encouragement to the Appalachian Trail hikers.
7. Students will complete a bioinventory of native plants along the Appalachian Trail at environmental camp.
8. Students will measure to 2 meters on either side of the path for the planting beds.

9. Students will find the area and volume of the beds to order mulch.
10. Students will find the perimeter of the planting beds.
11. Students will measure and estimate proper spacing of the native plants in the beds.
12. Students will measure and graph the growth of plants in the beds.
13. Students will spread newspapers and old hay to prepare the beds for planting in the spring.
14. Students will estimate savings in price for newspapers and hay compared to round up.

Community Connections

Brochures will be distributed to the library and places of business describing the school garden.

Planting beds will be visible to the community and be part of a fitness trail.

Skills and Habits of Mind

Students will learn

Science

How to identify and the benefits of native plants

How to plant

About the watershed and runoff

About the Appalachian Trail

About integrated pest management

Environmentally sound ways to prepare a bed

How organic farms operate

Language Arts

About letter writing

Research skills

Informational writing

Persuasive writing

Descriptive writing

Math

Measurement through bed design and plant monitoring

Cost analysis of plants and maintaining the beds

Cost comparison of using old hay and newspaper compared to round up in preparing the bed

How to calculate area and volume

How to graph results

How to measure using standard and metric systems the growth of plants

How to measure the perimeter of the beds

Drawing garden to scale

Art

Brochure illustrations

Drawing the garden to scale

Social Studies

Civic leadership through environmental assistance within the community

Economic benefits of energy conservation

Service Project

Students will design, plant and maintain a native plant demonstration garden by the path and a rain garden by the playing field.

Day hike at Blue Marsh or Nolde Forest with a focus on native plants

Day hike on the part of the Appalachian Trail bio-inventory of native plants

Informing the community of the garden and fitness trail

Trip to an organic farm to get ideas to maintain the beds naturally

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Models and Examples

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Students will follow rubrics for brochure.

Students will view professional landscaping drawings.

Students will view appropriate writing examples.

Students will visit an organic farm.

Reflection

Journaling by the gardens

Student survey and suggestions about the project

Head heart hand

Monitoring of the garden

Graffiti about benefits of native plants

Your Evaluation of the Unit

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Rubric for Brochure

4- Work is complete with sufficient and accurate details

3- Work is mostly complete with sufficient and accurate details

2-Work is complete with limited details

1-incomplete with limited details

0-incomplete

Students will create a brochure describing native plants in the newly designed gardens.

Create pictures of native plants	4	3	2	1	0
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Write facts about native plants	4	3	2	1	0
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Include a map with the location of new beds	4	3	2	1	0
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Total _____/12

Rubric for Letter

4- Letter is complete and follows proper format

3- Letter is mostly complete and follows proper format

2 Letter is incomplete with some errors in the format

1-incomplete does not follow the format

0-incomplete

Students will write letters to persuade the school board and school officials for approval of the garden project.

- Provides information about the newly created gardens

4 3 2 1 0

- Explains the benefits of the project

4 3 2 1 0

- Explains their role in the project

4 3 2 1 0

- Follows proper letter format

4 3 2 1 0

Total _____/16

Rubric for Native Plant Research

4- Work is complete with sufficient and accurate details

3- Work is mostly complete with sufficient and accurate details

2-Work is complete with limited details

1-incomplete with limited details

0-incomplete

Students will complete research on assigned native plants.

- Graphic organizer 4 3 2 1 0
- Written report 4 3 2 1 0
- Illustration of native plant 4 3 2 1 0

Total _____/12