A Trail To Every Classroom (TTEC)
Curriculum Development Tool

UNIT DESIGN COVER SHEET

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School name, state and town: Mt. Ararat Middle School Topsham, ME

Title: Establish an Interpretive Trail

Abstract/Vignette: Students need to come away with greater knowledge of their local environment and how they can make a difference. The Big Idea is to develop an interactive/interpretive trail on the school grounds.

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
☐ Literature and Language Arts    ☑ Mathematics
☑ Social Studies and Geography    ☐ History
☐ Science    ☐ Technology

Year Developed: 2007

Period (month, week, year): Over 2 years, then annually

Teaching environment:

☑ In the Classroom (indoors)    ☑ On the Trail (on school grounds)
☐ In the Community    ☐ Online/Virtual
CO-SEED—Following a Trail to Place-Based Learning

Start Here!

Big Idea
What is the main idea you want your students to come away from the unit knowing?
The Big Idea, my students need to come away with greater knowledge of their local environment and how they can make a difference. The Big Idea is to develop an interactive/interpretive trail on the school grounds.

State Standards/Outcomes
Which elements of the state framework of standards does this unit address? What are the skills and outcomes you are working towards?
The elements of the state framework of standards that we plan to address are persuasive writing, informative writing, environmental science, team work, social skills, the current state standard actually has Service Learning as a component, math skills, geography.
The skills and outcomes the students should have attained; writing – informational and letter writing, math – measurement and budgets, science - seasonal change, plant identification, animal and aquatic habitat, social studies – community awareness and connection.

Essential Questions (Content)
What are the essential questions that will help guide students toward understanding the Big Idea?
What can we do with this trail?
How can we improve this area?
What can we learn from this location?
What community members can we use to help us achieve our goals?
What different plants and animals live in this area?
What can other community members use this area for?
How does this location change over the seasons?
What activities can we do in this location?
Why is it important that we preserve this?

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.
The skills gained:
1. teamwork: working together to decide on what to do and how to do it.
2. communication: contacting school personnel, environmental experts, local businesses, community members
3. self-esteem pride in accomplishment
4. academics: writing skills-letters, interpretive guide math skills-budget, measurement social studies -geography science- aspects of earth science

Proposed Unit Project(s)
What project(s) could your class undertake that would actively engage your students in learning about this theme? Our Middle School has a pond and untended trail within the school boundaries. The project for the students would be to restore the trail, (requiring community assistance and expertise, to help with cutting building a bridge, and determining if a retaining wall should stay or go, also there was a covered area with a brick fire pit that is in disrepair).
The final step in this project would be to develop an interpretive/interactive trail with learning activities to complete on the trail.

Vocabulary
What vocabulary do you expect children to learn through the unit? science terms - types of trees, plants, wildlife in the area, measurement terms for building bridges, box for interpretive/interactive guide, brick laying/masonry terms. The students’ written vocabulary may increase in the process of requesting assistance from various community organizations.

Community-Based Learning Opportunity
What opportunities exist in the school or community that could serve as an experiential and integrating focus for your students’ learning? Also include any opportunities for interdisciplinary learning.
This project would be a community based learning opportunity. To give them a little more background knowledge and to help them plan, 1. method is to visit the Cathance River Preserve that is located 5 minutes away, 2. is to go to China ,Maine to visit the school of fellow course participants and experience their interpretive school forest, 3. Is to have local environmental experts come in and advise on best way to preserve the trail and to provide knowledge concerning the water and vegetation in the chosen area.
Related Texts
Which books or local source readings will you use to support this unit?

Models
How will students understand where they’re supposed to get? What exemplars of student work will they see? What opportunities will there be for them to critique each other’s work? As stated in the Community Based Learning Opportunity I will help the student's determine where they need to be by visiting other sites. These sites will give them ideas and exemplars. The student's will have the opportunity to critique each other’s interactive portion of the trail to determine if the directions are correct and understandable. This part of the plan is the final phase. The students chose to restore the trail, my job is to help guide them to develop the interpretive portion for

Activities
What steps and individual elements or activities will your unit include?
1. Visiting the site, drawing a map of the site,
2. brainstorming ideas of what they could do with the site or if anything should be done there
3. formulating a plan of what they think should be done
4. requesting permission through a letter and personal conference with the administration
5. returning to the site to gain familiarity through literature experiences, sensory experiences science activities.
6. Visiting other sites in the local and not so local area that have developed a similar trail
7. locating and contacting partners within the student population to help with the project
8. locating and contacting partners (businesses and community experts) to provide labor, materials, and advise
9. Actual restoration of the trail; building bridge, boxes, cutting and restoring the trail, rebuilding the fire pit
10. participating in and developing various activities that can take place on the trail
11. writing directions for the activities
12. developing an interpretive/interactive trail guide
13. placing markers for each activity
14. maintaining the trail and activity sites
15. evaluating the activities through return feedback from the guide
16. extra activity would be in this local have a camping experience and all that entails in making it successful-planning, supplies, safety, etc.

Analysis & Interpretation of Literature
What will you ask your students to write as a response to the literature? I believe the literature the students will read are science experiments that are appropriate for the location that they are restoring. They will rewrite the experiment to make them applicable to the location they choose for that particular experiment or task. Other student's will edit and test the instructions or task.

Product
What will be the final class product(s) for this unit? How will you share it with the community? The final class product would be an interpretive/interactive trail within the school grounds. The interpretive/interactive guide would be placed in various local stores for individuals to pick up, also within the school. Initially there would be a “grand” cutting of the trail and a celebration or fair to announce the opening. Possibly on National Trails Day:)

Assessment
How will you assess student learning? How will you know if they have met the goals for the established outcomes? The assessment would be on-going. The final product of a restored trail and a published interpretive/interactive guide that works will indicate success in reaching our goal. People and students actually using the trail. On the way, evaluation of student's teamwork, interaction with their peers and the community, the amount of community support and participation. The quality of the work on the trail, the trail itself, the bridge, the fire pit. The actual clearness and understanding of the guide. The ability of the students to work as a team in later projects, to communicate with adults, to write letters, to write directions, will indicate student learning. The assessment of their greater understanding of their outdoor environment.

Final Celebration
How will you celebrate the success of your unit and share its results with the school and community? An opening or cutting of the ribbon to celebrate the trail hopefully on National Trails Day. Press Release, invitation of community members, the students of the school and the press. The really really final celebration is going on an overnight hike on the AT, hopefully with one of my dear friends from the Greenville area.

Evaluation of Unit
How will you evaluate the unit and make note of what worked well and what could be improved? I will keep a journal and log of how things went. What worked well what problems occurred along the way. Reflecting using the HHH method, what learned, how it felt, and what will do next........
A trail to Every Classroom
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THE BIG IDEAS:
To establish/restore a trail within the Middle School Grounds.
To turn that trail into interpretive/interactive learning stations.
To promote awareness and familiarity with the outdoors.

THE LITTLE IDEAS (or the objectives that will be reached)
Social Skills: Groups will need to work together to develop plans, work on the trail, recruiting community support, teamwork and leadership skills.
Physical Skills: Students will increase their stamina and strength through the work restoring the trail.
Organizational Skills: Students will develop a plan, execute, and carry it through to fruition.
Science Skills: In development of the learning stations the students will expand their knowledge of the environment surrounding them.
Writing/reading skills: Students will expand their skills through letters requesting support and assistance, research concerning habitat and identification of various species, reading of literature to raise their awareness with what happens outside.
Social Study Skills: Students will develop their own map for the trail. Students will read a map and locate other trails.
Vocational Skills: Students will gain skills by building various necessary parts for the trail and the learning stations.
Life Skills: Students will learn the value of being outdoors, plus preparing themselves for adventures in the outdoors that they can use in adulthood.

OVERVIEW (what are we really trying to do)

This project is based on the Service Learning Model. That said it is a work in progress. Students lead, teachers guide. Students plan, teachers assist. Students develop, teachers provide support.

The goal I feel should happen is to restore a trail and develop interpretive/interactive learning stations. The following are steps I shall take to help lead them to the same conclusion. The lessons are a general guide, leading off to other areas based on the students, also to expand their familiarity and knowledge of trails and the outdoors.

The students I currently work with are learning impaired. The completion of this project will also involve recruiting students from other programs to help support and mentor my students. I feel the first population I am looking toward for assistance is the students from the high school with the same disabilities. This will promote further camaraderie and self esteem. I also plan to involve, besides community members, our local Vocational Education program. The trail we will be working on restoring, currently needs a bridge, and the rebuilding of a fire pit. A great project for the Voc. kids, many of these students also fit the profile of the students that I currently work with.

PRE-LESSON:

Materials: Books, such as The Lorax, hiking stories (Lost on a Mountain in Maine, what's in the woods books, fiction and nonfiction, current events

Learning Objective: The students will gain familiarity and understanding about their environment through literature.

Activity:

1. The teacher will read The Lorax.
Students will discuss and interpret the Lorax, how it relates to modern times.

3. Students will read and discuss articles covering Global Warming.

4. Students will brainstorm what they can do to help the environment and why it will help them.

5. Students will develop a classroom environmental goal.

LESSON #1:
Materials: Nice weather, good walking shoes
Learning Objective: Students will determine the needs for the trail
Activity:
1. The students will walk and explore the trail as it currently exists.
2. On returning students will discuss what was good about the trail, what were some needs.
3. Brainstorming together or in small groups; what are the priorities to make the trail useable.

LESSON #2:
Materials: worksheet #1, pencil, again good walking shoes, nice weather
Learning Objective: Students awareness of their surroundings will be raised
Activity:
1. Students will be instructed that they are going to choose a location that they will check on monthly. They are going to make observations.
2. The students will locate a spot along the trail or by the pond. They will sit at that spot for 5-10 minutes.
3. Using Worksheet #1 they will record what they see, feel, hear, and smell. They will also make a sketch of their particular spot.
4. On returning to class, the students will share with each other the information from their sheets.
5. Students will compare and contrast their results.

LESSON #3
Materials: bus, notebooks
Learning objective: Students will be exposed to other interpretive/interactive trails in the vicinity.
Activity:
1. Students will explore a trail that has an interactive/interpretive component using a trail guide.
2. The students will discuss what they liked and didn’t like about the trail, what they learned, what were the likenesses and differences between their location and the site visited.
3. The students will list what they would like to see on a trail if they had one.

LESSON #4:
Materials: Paper, good walking shoes, nice weather
Learning Objective: Students will determine if there is a need and if they want to pursue it.
Activity:
1. With teacher guidance students will list the benefits of having a trail within the school grounds.
2. The students will list the needs of the trail as it is currently.
3. Students will decide if they have an interest, energy, and skills to restore the trail.
4. If yes, the students will further brainstorm on who they should contact for approval, who and what supports they would need. (community members, school personnel and students, etc.)

LESSON #5:

Materials: Sheets of paper, colored pencils, nice weather, volunteer from Delorme Map Company (could be a field trip to that facility)

Learning Objective: Students will draw a current map of the trail and the areas of need.

Activity:
1. Students will do an, in school activity such as the penny placement map activity. Accuracy will be reviewed and essentials of what should be on a map.
2. Students will walk and measure the trail.
3. Students will develop a legend showing key places on the trail (places especially that need to be worked on)
4. Students will invite evaluation from outside parties to follow their maps to determine accuracy.

LESSON #7:

Materials: Laptops, paper, pencils

Learning Objective: Students will research community contacts who could assist in their project and develop letters of explanation and requests.

Activity:
1. The teacher will model and provide examples of a letter of request. (worksheet #2)
2. Using the list that was brainstormed from lesson #5, students will research a contact person that could fulfill that particular need.
3. Working in teams, students will divide up the names and write the letters of request.
4. Students will share their letters with each other, adding or deleting as suggested.
5. Letters will be addressed and sent by the students.

LESSON #6
Materials: phone
Learning Objective: Students will learn interpersonal communication skills through phone conversations with contact people.

Activity:
1. Teacher will model a phone conversation with selected support person.
2. Students using a script will practice on each other the phone conversations. (worksheet #3)
3. Students make contact with individuals that they previously sent a letter to.
4. Students record information, schedule a meeting, level of support, etc.

LESSON #8
By this point hopefully we will have made contact with a partner group of students to work on the manual labor of restoring the trail.
Materials: Tools for working on the trail donated by Community partners; town, large businesses (Target, Home Depot), small local businesses
Learning Objective: Students will improve their social skills and organization working with teams in determining what needs to be worked on at the trail and completing the tasks.

Activity:
1. Students will meet with community partners (other school personnel, businesses, volunteers) and present our project.
2. Students will accompany partners on a tour of the trail, highlighting areas that they are concerned with and where they see the work needing to be done.
3. Students will using worksheet #4 develop a list of what needs to be done, by whom, with what, by when.
4. Students will divide up in teams with various community partners for chosen assignments.
5. Students and partners will determine what tools, materials, and methods needed to complete their task. (possible research on handicap accessibility and green construction)

LESSON #9
Materials: tools needed to work on the tasks on the trail, work clothes, nice weather
Learning Objectives: Students will improve their physical fitness and their social skills. Students will develop self-evaluation skills.
Activity:
1. Students will divide up with their community partners and complete tasks on the trail.
2. Students will evaluate whether the tasks have been completed satisfactorily.

LESSON #10
When the trail has been completed and restored phase one of the project is complete. This group of students may feel that their task is complete. The time period could be over a year to completion. If this is the case they could direct the next bunch with a vision of how they see the trail being used and what next..... Also many of the activities for the interpretive trail would have taken place during the day as academic projects. Helping the students discover that
these could be activities set up for an interactive/interpretive trail would be the ultimate goal.

The following are a few of the activities broaden their knowledge.

### #10a Materials:
- sheets of paper
- colored pencils
- laptops

**Learning Objective:** The students will use the skills learned to perfect a map of the trail.

**Activity:**
1. Using the maps from lesson #5 students will return to the trail to determine the accuracy and changes needed to be made on the map due to their trail work.
2. Students will highlight key areas on the trail, ie where activities could take place, points of interest.
3. A GPS activity could take place at this point directed by community volunteers.
4. Trail map will be completed digitally.

### #10b Materials:
- box with wire mesh
- hand microscopes
- suction thingy

**Learning Objective:** The students will record and observe various locations on the trail and what life resides there. (paper copy of instructions to be sent)

**Activity:**
1. Students will have previously built an observation box.
2. Choosing a location the students will scoop then sift the dirt out.
3. Students will record and analyze the species found in the box.
4. Students will share the results with each other, developing a graph of #’s and types found.

### #10c Materials:
- laptop
- plant/tree identification guide
- string
- stakes
- measuring tape
- naturalist
Learning Objective: The students will determine the variety, number and types of vegetation located on the trail.

Activity:
1. Through guided study the students will learn how to determine the type of plant by various means, bark, leaf, etc.
2. In a self selected area the students will stake out a given space and identify and record the number of various plant species.
3. Students will go to each other sites and evaluate if they find the same numbers and types.
4. Results will be tabulated and graphed.
5. Guided discussion with the naturalist as to why certain types of plants are found in this location.

#10d Materials: Dead tree, naturalist, notebooks

Learning Objective: Students will determine the age of a tree, how decomposition works and benefits the surrounding area.

Activity:
1. Students through guided discovery will determine the age of the tree.
2. Students will evaluate the type of matter in and surrounding the decaying tree.
3. Students will record the rate of decomposition, returning and recording measurements and observations each time.

#10e Materials: food scraps, trash, man-made materials

Learning Objective: Students will understand and follow the concept of Leave no Trace.

Activity:
1. Teacher will choose a location and place various items that should or should not be in the woods.
2. Students will be timed, they will collect all the items that should not be left in the woods.
3. At the end of the time students will share what they found and state why it shouldn’t be in the woods.
4. Review and discussion of Leave no Trace.

#10f Materials: naturalist, pond, water containers, nets

Learning Objective: The students will become aware of the variety of life that resides in the water/stream

Activity:
( This activity is under construction)

#10g Materials: paper, paints, pastels, colored pencils, easels

Learning Objective: The students will use self chosen art medium to portray the trail and environment around it.

Activity:
1. Students will choose a location that they wish to represent on the trail.
2. Students will draw, paint, color, a visual representation of the location.
3. When completed students will share their final product, other students will attempt to locate the represented locations.
4. One or more of the art pieces, could be used as illustrations for the trail guide.

LESSON #11

There will be at this point a few more activities that are still “under construction”. Some ideas, besides further science experiments, are having the students research and then develop a permanent display covering essential items for hiking, or safety on the trails, foods for hiking, etc. Since this is supposed to be student directed and teacher guided who knows what other activities they might want to research and study and develop!!

#11a Materials: laptop, compilation of activities, map of the trail
Learning Objective: The students will work as a group to determine how to develop an interpretive/interactive guide and what to include.

Activity:
1. The students will share work done so far.
2. The students will score which activities they enjoyed the most, learned the most.
3. The students will compile the results and choose which activities they want on the trail.
4. The students will use the map produced in Lesson #5 and mark appropriate locations for each activity.
5. The students will determine how they should mark the location of each activity on the trail.
6. The students will further perfect the activities, building durable weather resistant materials for repeated use. (community partners back to work :) plus instructions for each activity.
7. The students will test run each others activities.

#11b Materials: laptop, map of trail, wood, construction materials, GPS

Learning Objective: The students will develop an accurate trail map with locations indicated of the interactive/interpretive portions. The students will also build a holder for the trail maps and markers for appropriate locations on the trail.

Activity:
1. The students will develop a finalized map with instructions for the interpretive/interactive trail sites.
2. The students will recruit volunteers to test the map and activities./adjustments made
3. The students will publish the trail guide/map
4. The students will build a “box” for the trail guides (paper copy instructions to be sent)
5. The students will develop a marker system for the appropriate locations on the trail.
6. The students will run another test of the trail.

CELEBRATION:

MY FAVORITE THING!!!!!!

1st Celebration: By now the trail should be complete and ready for the public, students will plan an “opening” day, preferably coinciding with National Trails Day. The students will continue learning through: planning the celebration, publicizing the event, inviting the community partners, soliciting special prizes and refreshments.

2nd Celebration: After participating and producing an interpretive/interactive trail and with the knowledge gained the students should have a chance to hike on a REAL trail, preferably an overnight on the AT or a visit to Greenville and the Moose Quest. This celebration will take a little more planning and study but........... worth it.

EVALUATION and WHAT NEXT:

This project will be evaluated by the visitors to the trail and future workers. Much of the evaluation will be ongoing, at the end of each lesson, reflection on work done and activities completed. The interactive/interpretive guide might have a portion to put comments on and leave.

What next, hopefully the following year’s students will maintain, improve and expand the trail and activities. There are locations in our town that have a need for trails to be cut to connect trails to trails. This is an excellent opportunity for what next. Also spreading the knowledge of when to hike, how to hike, and where to hike to fellow students is a great goal. Establishing hiking groups / outdoor adventure clubs to get more and more kids involved and out on the trails.................
LESSON #7 - Worksheet #3  script for phone conversation

Student: “Hello, this is student’s name calling from Mt. Ararat Middle School. Could I please speak with contact’s name “

Contact: “Hello can I help you”

Student: “Hi, I hope you received the letter we sent about our project. I’d like to give you some more details. This is a service learning project our class is working on. We are restoring and building an interpretive/interactive trail on our school grounds. We were contacting you because we thought you/your company could help us with name what we want from them. Would you be interested in visiting our school and trail sometime soon.

Contact: “Sure”

Student: “what day and time is most convenient for you”

Contact: picks day and time

Student: “I will be looking forward to meeting you then. Thank you for your time.”

Contact: “Goodbye”

Student: “Goodbye”
Dear Mr. Smith,

My name is Barbara Swisher and I am a student at Mt. Ararat Middle School. We are working on a service learning project restoring a trail on the school grounds. We hope to eventually turn the trail into an interpretive/interactive trail.

We are writing you to see if you can help us. Your company, Smith Woodworks, has the perfect resources for our project. We have a few bridges to build on our trail and need donations of wood or anything else you might be interested in supplying. Your support will help provide a great learning experience for students in our town.

Thank you for taking the time to read this letter. If you have further questions please contact me at 729-2950 and I can answer any questions. I will call you in the next few weeks.

Sincerely,

Barbara M. Swisher

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Dear ( person’s name),

Paragraph #1 - Introduce yourself and explain the project.
Paragraph #2 - Give the reason why you are writing them, how they can help with the project. Explain how their assistance will help the project.
Paragraph #3 - Thank them for their time and give them a contact number. ( might also let them know you will be calling them)

Sincerely,
Sign your name here

Your Name