# PROJECT PLANNING FORM

<table>
<thead>
<tr>
<th>Project title:</th>
<th>Quality of Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher(s):</td>
<td>Ma Huggins</td>
</tr>
<tr>
<td>School:</td>
<td>Baltimore Lab School</td>
</tr>
<tr>
<td>Grade level(s):</td>
<td>12th</td>
</tr>
<tr>
<td>Subjects:</td>
<td>Environmental Science</td>
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</tbody>
</table>


**STANDARDS-FOCUSED**  
**PROJECT BASED LEARNING**  
Buck Institute for Education
Craft the Driving Question

<table>
<thead>
<tr>
<th>To see the stream</th>
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<tbody>
<tr>
<td>What is the water quality in the Jones Falls stream?</td>
</tr>
<tr>
<td>• Evaluate the health of the stream</td>
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<tr>
<td>• Visit Jones Falls Stream</td>
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<tr>
<td>• Look at it</td>
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<td>• Change it</td>
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How much water do we use?

Where does it go?

• Map of watershed

• Have you posed an authentic problem or significant question that engages students and requires core subject knowledge to solve or answer?
Begin with the End in Mind

Summarize the theme for this project. Why do this project?

- Evaluate the health of the Jones Falls.
- Look at it.
- Water quality tests.

Identify the content standard that students will learn in this project (two to three per subject).

Identify key skills students will learn in this project.
List only those skills you plan to assess (two to four per person).

- Sign up for Maryland Stream Waders?
- Safety guidelines
- Subwater shed #
- Site #
- Map

Identify the habits of mind that students will practice in this project (one to two per project).

- Does the project meet the criteria for standards-focused PBL?
# Plan the Assessment

## Step 1: Define the products for the project. What will you assess?

**Early in the Project:**

Find the stream and watershed BLS is in.

* Jones Falls

## During the Project:

- Look at it
  - Stream buffers
  - Amount of impervious surface
  - Living organisms
  - Flood plain
  - Bank erosion
  - Sediment
  - Garbage
  - Water quality (pollutants)
    - Gasoline
    - Fertilizers, oil, etc.
    - Water temp affects living organisms

## End of the Project:

- Turbidity - how much sun?
- Collecting aquatic invertebrate samples
- Send to DNR for "bug identification"
- Clean the stream.
  - Get garbage out
  - Report to DNR for sediment pollutants
  - Plant trees or buffers
Map the Project

What do students need to know and be able to do to complete the tasks successfully? How and when will they learn the necessary knowledge and skills? Look at one major product for the project and analyze the tasks necessary to produce a high-quality product.

**Product:** Clean the Jones Falls

<table>
<thead>
<tr>
<th>KNOWLEDGE AND SKILLS NEEDED</th>
<th>ALREADY HAVE LEARNED</th>
<th>TAUGHT BEFORE THE PROJECT</th>
<th>TAUGHT DURING THE PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MIS mapping skills</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>2. Top vocabulary</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Directions to Jones Falls</td>
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<tr>
<td>4. Where will we go?</td>
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<td>5. What will we do?</td>
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<td>10.</td>
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<tr>
<td>11.</td>
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</table>

What project tools will you use?
- Know/need to know lists
- Daily goal sheet
- Journals
- Briefs
- Task lists
- Problem logs

- Do the products and tasks give all students the opportunity to demonstrate what they have learned?
Map the Project (2)

List the key dates and important milestones for this project.

Date

April 17
24

Time

Place

Use the Tuning Protocol with other teachers or a group of students to refine the project design or guide you further in your planning. What other thoughts do you now have on the project?

- What challenges or problems might arise in this project?
Manage the Process

List preparations necessary to address needs for differentiated instruction for ESL students, special-needs students, or students with diverse learning styles.

How will you and your students reflect on and evaluate the project?

☐ Class discussion

☐ Fishbowl

☐ Student-facilitated formal debrief

☐ Teacher-led formal debrief

☐ Student-facilitated formal debrief

☐ Individual evaluations

☐ Group evaluations

☐ Other: __________________________________________

☐ __________________________________________

• What do you expect to learn from this project?
Learning disabled youngsters can learn how to canoe. They can succeed!

https://www.childlabeschool.org

Swim Coach

Master Watered Steward of the Chesapeake Bay

Outdoor Education Coordinator

Part Child

---

Please take the following precautions when canoeing:

- Carry your snacks and keep them secure in your car during transport.
- Avoid getting ethylene glycol (the preservative for your samples) on your skin. If you do, wash immediately with plenty of water. Make sure all alcoholic containers are securely closed and stored in your car.
- Avoid wading in streams where the water is usually clean. Drink water from streams only if you are certain it is safe.
- If you see wildlife alone, do not disturb the vegetation on the streambanks or feed wildlife.
- Leave wildlife alone. Do not disturb the vegetation on the streambanks or feed wildlife.
- Bring a change of clothes in case you get wet. Stream water is usually quite cold in March and April.
- Before you leave, check your nearest health department's web page for water quality information.

You will sample on your own.

ALWAYS OBTAIN PERMISISON TO CROSS PRIVATE PROPERTY TO GET TO A SAMPLING SITE. Be sure that the landowners know exactly when and where you will sample.

To: Partch@childlabeschool.org

Subject: No Subject

From: Partch@childlabeschool.org

Zimba

Zimba
Learning disabled youngsters can learn how to learn. They can succeed!

http://www.pembrokeelementary.org

Swim Camp
Master Watered Stream of the Chesapeake Bay
Outdoor Education Coordinator
Patricia Child

(*) indicates number of item will vary according to the number of sites sampled:

- Bottle of bleach to mix to 10% in spray bottle (1)
- Beach spray bottle (1)
- Rubber gloves (1)
- Windshield sign (1)
- Stream Wedges (1)
- Field Person (1)
- Child of Custody Form (1)
- Site Survey Form (1)
- Clipboard (1)
- Pencil for labeling benthic samples (1)
- Round color stickers for labeling sites on laminated maps (1)
- Protocol of sheets maps of sampling Subwatershed Area (1)
- Letter of landowner's interest in more information (1)
- Landowner permission letter (1)
- Waterproof Site Survey Form (1)
- Paper labels for benthic sample buckets (5)
- Benthic sample buckets with lids (5)
- Sieve bucket (1)
- D net (1)
- GPS (Global Positioning System) unit (1)

To: Patricia Child <child@pembroke.org>
From: Patricia Child <patricia.child@pembroke.org>

Subject: No Subject

The Feb 21, 2013 10:43 AM
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To check out the Stream Waders searchable database, go to: http://middlet.chesapeakebay.net/mbss/streamwaders.com
For general information on the Stream Waders Program, go to: http://www.dnr.state.md.us/streamwms/mbss/mbsp/volum.htm

World Wide Web:
email: streamwaders@dnr.state.md.us
1-877-60-DNR (extension 6623) (toll free in Maryland)
410-260-6623 (Annapolis local number)
Stream Waders Telephone hotline:
Use the following information to contact DNR Stream Waders staff or to get periodic updates on the Stream Waders Program:
Contact DNR Stream Waders:

To: Partida Child < partida. child@labshool. org
Subject: No Subject
From: partida Child < partida. child@labshool. org

http://www.labshool.org/zi/bullet/primary/index.jsp?id=709482