PONDS AND STREAMS, Level 1

ACTIVITY 1 - Making Big Words Out of Small Ones

- ANSWERS: sidewalk, thunderstorm, snowball, downstream, upstream, waterfall, groundwater

ACTIVITY 2 - Identify Surface Water

- ANSWERS: All answers are types of surface water, with the exception of winter

ACTIVITY 3 - States of Water

- ANSWERS: “Solid” connects to picture on bottom right; “Liquid” connects to picture on top right; “Vapor” connects to center photo.

ACTIVITY 4 - Water Cycle

- ANSWERS: transpiring, precipitating, condensing
  transpire, precipitate, condense

ACTIVITY 5 - Fill in the Blanks

- ANSWERS: 1. evaporation 2. transpiration 3. condenses, precipitation 4. runoff

ACTIVITY 6 - Your Watershed (Self Explanatory)

ACTIVITY 7 - Using Surface Water (Self Explanatory)

ACTIVITY 8 - Healthy or Polluted? (Self Explanatory)

ACTIVITY 9 - NPS

<table>
<thead>
<tr>
<th>Water Pollution</th>
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<tbody>
<tr>
<td>Point Source</td>
</tr>
<tr>
<td>Urban Runoff Construction</td>
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<tr>
<td>Rural Atmospheric Natural</td>
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ACTIVITY 10 - Categories of NPS

- ANSWERS: Sources of Pollution: B;A;C;D
  Causes of Pollution: A;B;D;C

ACTIVITY 11 - Vocabulary Crossword Puzzle

- ANSWERS: ACROSS: 1) runoff 2) clouds 5) oceans 6) solid 9) evaporation 10) rain 11) lakes
  DOWN: 1) rivers 3) liquid 4) snow 6) stream 7) water 8) vapor

ACTIVITY 12 - Senses

- EXAMPLES: Taste: Sweet, Stale; Salty; Metallic; Bitter; Dirty
  Smell: Clean; Fresh; Dirty; Chlorine; Salty
  Look: Clean; Dirty; Cloudy; Pure; Clear
  Feel: Slick, Slimy, Smooth; Cold; Hot
  Sound: Quiet, Noisy, “Drip-drop”, Rushing; Babbling
  Plus many others! 😊

ACTIVITY 13 - Cryptogram
**ACTIVITY 14 - Water Ions** *(Class Activity)* -
Note: This activity will challenge the students and requires significant teacher involvement.

**ACTIVITY 15 - Writing** *(Self Explanatory)*

**ACTIVITY 16 - Acid Rain**
Note: This activity can be implemented with an classroom discussion and/or open writing assignment.

**ACTIVITY 17 - Controlling Pollution**

**ANSWER:** Ways to Stop NPS pollution
- Ride your bike; Turn off lights when not in use; Turn down your thermostat; Ride the bus or other public transportation; Recycle instead of throwing things away.....

**ACTIVITY 18 - Nitrates**
Chemical Structure of Nitrate - This concept may be a bit challenging for this age.....

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**WATER TESTING RESULTS LOG SHEET**

**ANSWERS:**
1a. pH less than 7 is acidic; pH more than 7 is basic; pH at 7 is neutral
1b. If water has pH < 7, water has more hydrogen ions, > 7 more hydroxide ions
2. Use guide in question 1

**ACTIVITY 19 - Testing Additional Solutions for pH**

**ANSWERS:**
1. pH of distilled water should be about pH 7.
2. pH of vinegar solution should be acid
3. pH of baking soda should be basic/alkaline
4. pH of tap water varies; should be about pH 5-8
5. Solution with highest pH: baking soda
6. Solution with lowest pH: vinegar solution

**ACTIVITY 20 - Acids and Plants Activity**
This experiment takes several days, but allows students to see first hand the effects of pH (acids) on plant growth. It can help the student understand the actual effects of acid rain..

**ACTIVITY 21 - Phosphate Test**
This experiment can experience extremely variable results depending on the fertilizer source. Be sure to try this prior to teaching in class—if phosphate results are beyond the range of the test strips (too high), you can dilute the fertilizer solution with water. This experiment or process can help students realize the (small) size of a milligram per liter or ppm.

**ACTIVITY 21 - Nitrate Test**
This experiment can experience extremely variable results depending on the fertilizer source. Be sure to try this prior to teaching in class—if nitrate results are beyond the range of the test strips (too high), you can dilute the fertilizer solution with water. This experiment or process can help students realize the (small) size of a milligram per liter or ppm.