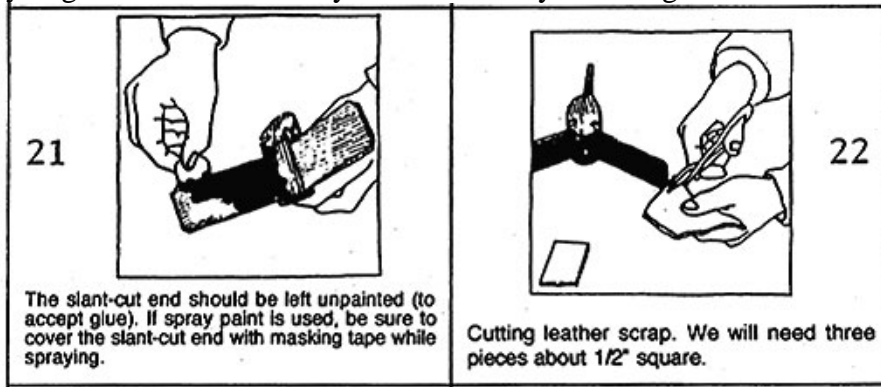


THE ENVIRONMENTAL SCIENCE PROGRAM 2006 | ts#3.  
 Only when you go bald and blind do you realize that you need glasses to see that you're bald.



If it's left unpainted, it'll accept glue.

Today and/or tomorrows trip (depending on when you read this):

# POND CIRCLE.

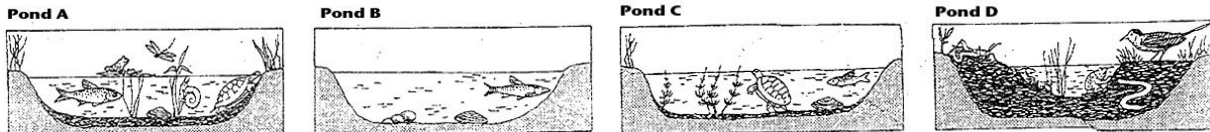
UNDENIABLY UNDENIABLE.

~  
Pertinent Information:

Ts# (trip slip number): 3  
 D/t (date and times): July 7, 2006 | 9am-4pm  
 Ml (meeting location): Brown middle school  
 L's (leaders): Jonathan Rivnay {617.645.1379} & Chris Leo-Palermينو {617-926-0319}  
 vEq (various equipment): Hiking Boots, Lots of Water, Lunch (a really good one),  
 Field Kit (Raingear, First Aid, etc.), Bug Spray, Pride.

~  
A Pond Succession Quiz:

You may or may not have learned this today (or yesterday), but if you haven't...order the below frames from youngest to oldest pond, write in their stage names also. We'll see how you did during the trip.



Write your answers here:

~  
Other Informational Haikus {oi5|7|5}:

Wow! Newton has ponds?  
 Indeed it does! Lets explore!  
 Circularly, k?

We'll see four-ish ponds  
 What makes a pond? We'll find out,  
 And water test too!

~  
 \*\*You have abused your weather privileges,  
 now you will have to find out the forecast ALL ON YOUR OWN!



# Pond

Trip slip # 3

Jeff Huemmoerder (617)-332-9506 call re:\*

Dan Swartz (617)-244-2339

\*Joey Backer (617)-969-0288

Time: 9am - 4pm

Location: Brown Middle School

# Circle

## Equipment:

- 1-12 liters H<sub>2</sub>O
- 1-12 liters lunch
- field kit
- first aid kit
- top half of rain gear
- bottom half of rain gear
- middle half of rain gear
- sunscreen
- bug spray
- sun and bugs so you feel good about bringing previous two items
- hiking boots
- X-tra laces

Have you ever seen any of those ponds around Newton and thought "gee! I sure hope that some day in my life I'll have the joy of touring these aforementioned ponds with some sort of program, an environmental type program, with some sort of science involved. I sure hope some type of program like that exists somewhere in our beautiful, beautiful world."? Luckily for you our program fits just those conditions. The ponds we'll be visiting, in no order whatsoever, are:

- 3) The marshes of Cabot Woods
- 1) Bulloughs Pond
- 4) Some pond near Newton Cemetery
- 2) Crystal Lake

Don't forget not to bring a few things in case we find somewhere cool to spend it on.

In case of Emergency, your child will be brought to:  
Newton Wellesley Hospital: 617-243-6000.

This program must comply with the regulations of the Massachusetts Dept. of Public Health and must be licensed by the City of Newton Health Department.

# **POND** Circle

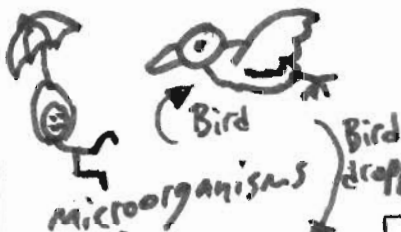
Joey Backer  
 (617) 919-0288  
 Jeff Huenemoerder  
 (617) 332-9506  
 Dan Swartz  
 (617) 244-2339

**BRING:** boots,  
 lunch, WAHTAH,  
 field kit  
 lb (raingear) (1<sup>st</sup> aid kit)  
 sunscreen  
 bug spray  
 sense of adventure  
 Knowledge of liquids + solids (don't fall in)

Trip slip #3  
 7/7/05  
 9AM - 4PM  
 Brown Middle School

These wavy lines aren't just for show, they are for the higher purpose of illustrating that today we're heading to and around a bunch of ponds in "the Newton", specifically those of the Newton cemetery, city hall, then Crystal Lake and Bullough's pond too. But we're not only going to be standing in front of these little bodies of water, we're going to talk about pond succession, what it is and how it works as well as what it has to do with ecology (study of plants and animals in the natural environment), which is freakin' everything!

1<sup>ST</sup> STAGE



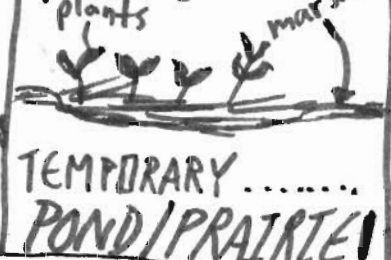
2<sup>nd</sup> Stage



3<sup>rd</sup> STAGE



4<sup>th</sup> STAGE

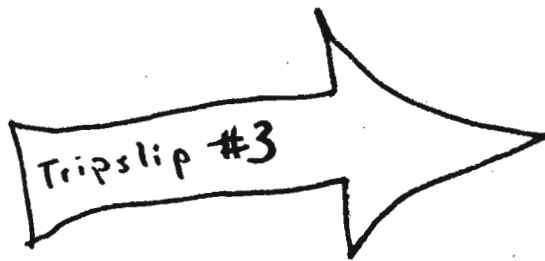


In case of Emergency, your child will be brought to:  
 Newton Wellesley Hospital: 617-243-6000.

This program must comply with the regulations of the Massachusetts Dept. of Public Health and must be licensed by the city of Newton Health Department.

**BARE BOTTOM**

**ECOLOGY**



# POND CIRCLE?

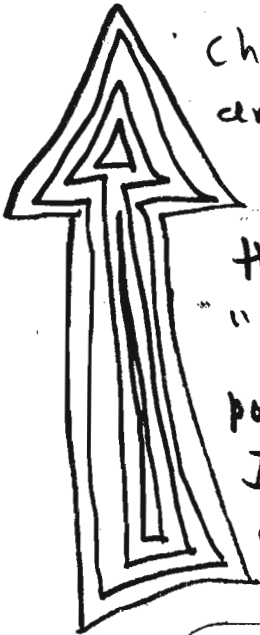


**LEADERS**  
 Joey "Pondie" Backer  
 .617-969-0288  
 Jeff "Hvenemoerder" Hvenemoerder  
 .617-332-9506  
 Dan "Rock On" Swartz  
 .617-244-2539

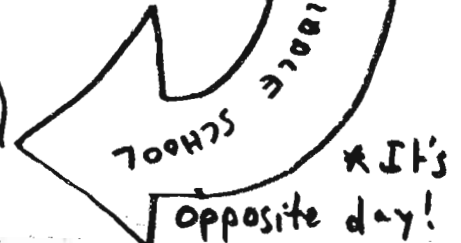
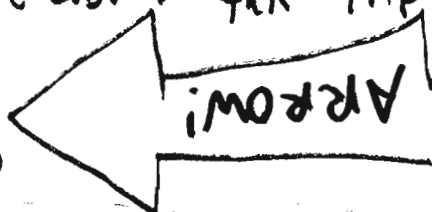
**Q&A**  
 Q: What differentiates a pond from a lake?  
 A: Yeah, because I'd tell you! Stupid...



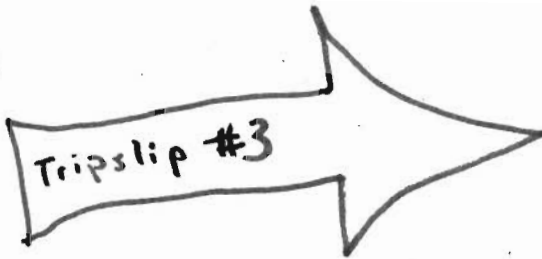
Whoaaaaaaag! This is going to be such a good trip. We are going to walk all the heck around Newton and check out the many different ponds that are scattered about. While we're doing this, we'll be talking all about pond-related things: wildlife, a little thing I like to call "pond succession," and the ecology of the pond ecosystems we encounter. OK. Now I have to go pee due to being so excited about this trip.



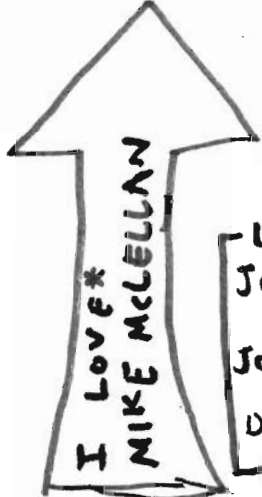
LOCATION: BROWN MIDDLE SCHOOL



In case of emergency, your child will be brought to:  
 Newton Wellesley Hospital: 617-243-6000.  
 This program must comply with the regulations of the Massachusetts Dept. of Public Health and must be licensed by the city of Newton Health Department.

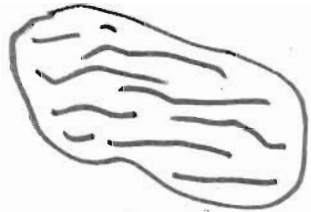


# POND CIRCLE

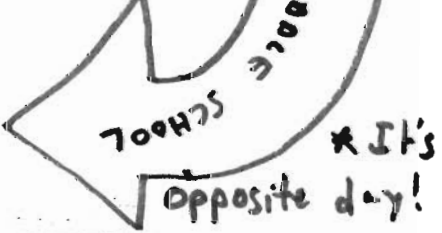
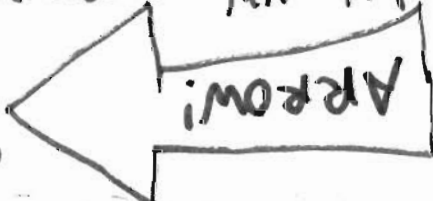


**LEADERS**  
 Joey "Pondie" Backer  
 .617-969-0288  
 Jeff "Hvenemoerder" Hvenemoerder  
 .617-332-9506  
 Dan "Rock On" Swartz  
 .617-244-2339

**Q&A**  
 Q: What differentiates a pond from a lake?  
 A: Yeah, because I'd tell you! Stupid...



Whoaaaaaa! This is going to be such a good trip. We are going to walk all the heck around Newton and check out the many different ponds that are scattered about. While we're doing this, we'll be talking all about pond-related things: wildlife, a little thing I like to call "pond succession," and the ecology of the pond ecosystems we encounter. OK. Now I have to go pee due to being so excited about this trip.



In case of Emergency, your child will be brought to:  
 Newton Wellesley Hospital: 617-243-6000.  
 This program must comply with the regulations of the Massachusetts Dept. of Public Health and must be licensed by the city of Newton Health Department.

Trip-slip #7

Leaders:

Jeff "The Long and Winding Road" DeCew

617-964-7845

Lyuda "Come Together" Kovalchuk

617-558-5567

# POND CIRCLE

## Special Items:

A pond.

A Circle.

## Required Items:

WATER (2 quarts)

A Nutritious Lunch

Your Field Kit

Raingear

First Aid

Notebook

Sun screen

(Bug Spray?)

## Optional Items:

A water test kit.

Tennis Balls (for you to lose)

½ Lb Ground Beef sandwich (a.k.a hamburger)

## Meeting Place:

Brown Middle School!

## Times:

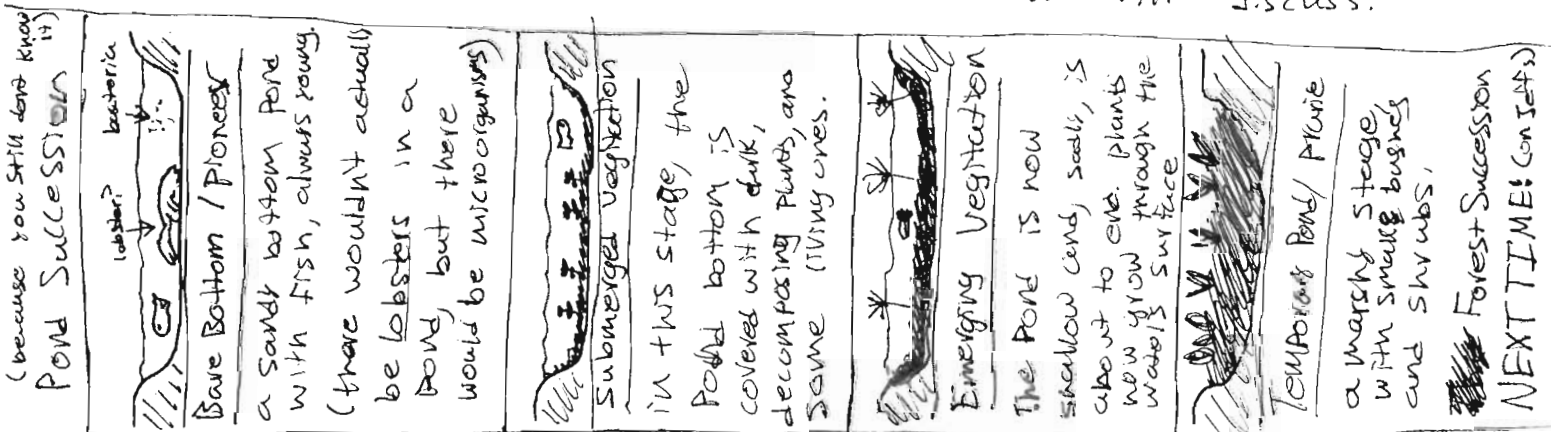
Meet: 9:00 AM

Leave 4:00 PM

Hey! I bet you are wondering what the heck Pond Circle is! I mean is there a circle pond? is there a circle of ponds? well not exactly. But we will visit 4 freshwater ponds.

- 1) the marshes of Cabot Woods
- 2) Bulloughs pond
- 3) a pond in the Newton Cemetery
- 4) Crystal Lake

While visiting these ponds / Lakes, we will be considering the condition of the water. Do we effect the pond by building a cemetery around it? Is crystal lake in good condition? Is Bulloughs pond suitable for anything more than ice skating? These are a few of the many questions we will discuss.

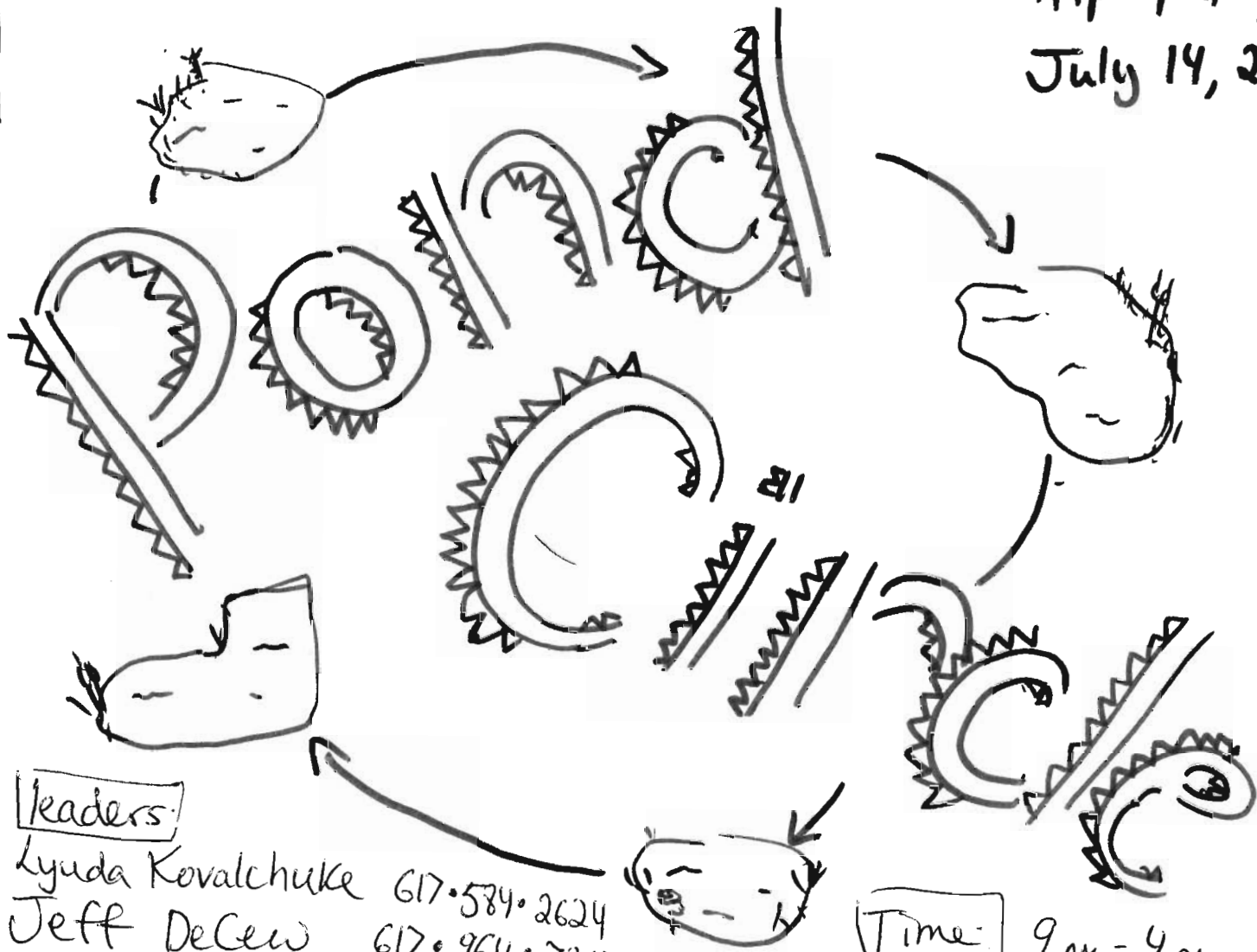


In case of an emergency, your child will be brought to: Newton Wellesley Hospital: 617-245-6000

This program must comply with the regulations of the Massachusetts Department of Public Health and must be licensed by the City of Newton Health Department.

Trip Slip # 9

July 14, 2004



**Leaders:**

Lyuda Kovalchuk 617-584-2624  
Jeff DeCew 617-964-7845

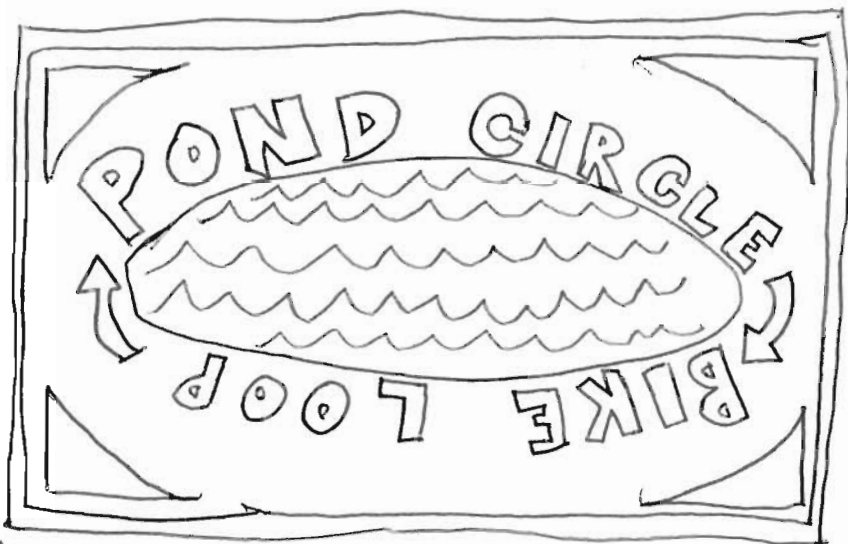
**Time:** 9 AM - 4 PM

**Place:** Brown Middle S.

**Equipment:** boots, lunch, H<sub>2</sub>O, field kit (ranger, 1st aid etc), bathing suit, \$ (for Crystal Lake (\$5)), towel

As the excessively large title of this trip slip suggests, on Wednesday we will be visiting various ponds in the Newton area. Yay! ~~Specific~~ Specifically, we will check out the ponds @ Newton Cemetery, City Hall, Bullough's pond, and ... Crystal Lake! This is a great trip on which to learn about pond succession, and we might even do some water tests to find out how healthy each pond is. And don't forget to bring your swim suit because you can have a swim in Crystal Lake if you so choose!

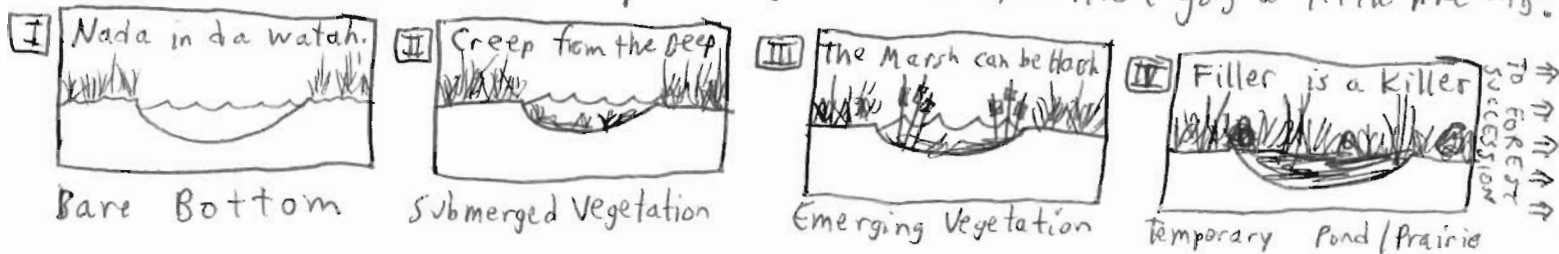
In case of emergency, your child will be brought to: Newton-Wellesley Hosp. 617-243-6000  
This program must comply with the regulations of the Massachusetts Dept. of Public Health  
be licensed by the City of Newton Health Dept  
canadian duck geese must



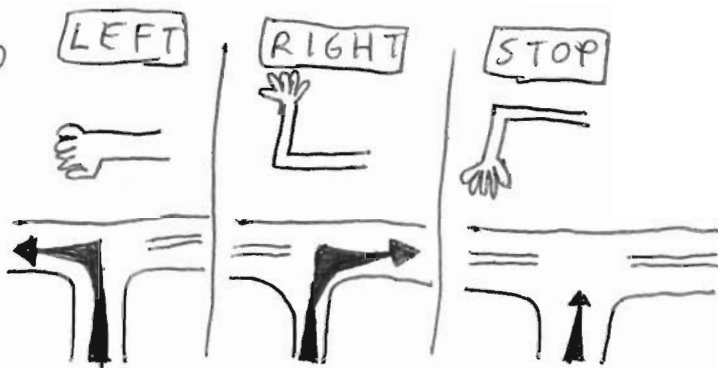
Trip slip #10.000  
 Tuesday, July 15<sup>th</sup>, 2003  
 Brown Middle School  
 9 in the AM until 4 in the PM  
 Joey Backer, Expert Tracker  
 617-969-0288  
 Maddie Logowitz, She Might Just  
 617-964-7689 Flog-Your-writs

## NATURAL DISASTER DAY!!

Tie down your tomatoes and bolt the shutters, kids, because today's trip is a doozy. We're going to take off on our bicycles and pedal up a storm so we can check out three or four ponds around Newton. We'll talk a lot about pond succession, which goes a little like this:



We'll also be talking about how to not bike like an idiot, because I don't want to carry your limp body back to Brown. Let's start now, with the hand signals...

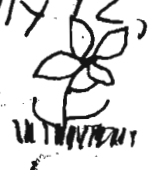


### ~ THAT WHICH YOU WILL NEED TO BRING TODAY ~

- LOTS of water (you'll be biking)
- A BIKE. with a helmet.
- Wear shoes
- Big Lunch
- Notebook & Pencil
- Raingear
- Fieldkit (First Aid, change, etc.)
- So much money for Joey that he needs a second bike
- No, seriously.

Trip slip #7  
July 12, 1994

# POND CIRCLE



LEADERS: Kathy Thorp 527-3681 Times: 9-2  
Peter Montague, 969-4196

EQUIPMENT: Field kit, Lunch, Boots, Water, Bathing suit,  
money for Crystal Lake (\$5), towel

Today we'll be visiting four different ponds on this nice little trip. These water sites include:

The Ponds at Newton Cemetary

The Pond at City Hall

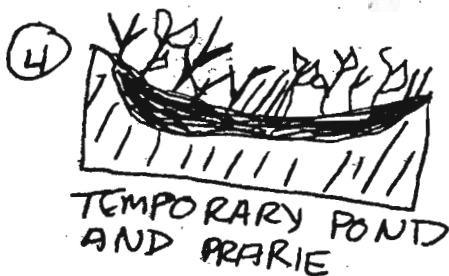
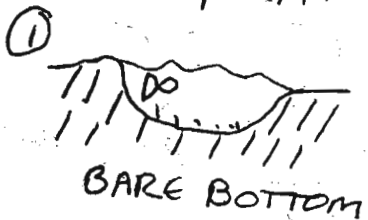
Bullough's Pond and

Crystal Lake, where you can swim if you'd like.

CATTAILS: *Typhus latifolia*

At each spot we'll take water tests to determine how healthy the water is. What are some of the ways you can tell if a pond is healthy or not without taking tests?

The major concept we'll talk about is POND SUCCESSION. It's a series of changes in the plant life of a pond:



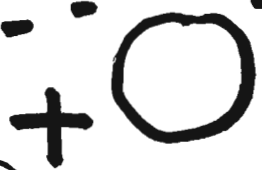
QUESTIONS TO THINK ABOUT:

- What is EUTROPHICATION?
- What is the difference between a pond and lake?

Trip slip # 3  
7/3/02

# POND CIRCLE

Pond. →



← circle, get it?



Times: 8:30am - 4:00pm

Meet @: Brown Middle School

Leaders: Joey "Yowza!" Bacher

617-969-0288

Amelia "I have no witty catch phrase" Runyan

617-244-8836

## Equipment List:

Bicycle, HELMET

Water (Lots)

Lunch (mmm...)

Field Kit (First Aid, Rain gear, etc.)

Put all this stuff in your backpack, also, shower me with gifts.

On this, the Pond Circle trip, we will visit 4 ponds on our trusty bicycles and test and compare the water with our water test kits. I'll give you

details on those later. Questions to ask your self might include: why is the pond in the Newton Cemetery giving different test results than Edmunds Pond in Cabot woods? What is different about them and their environments? With our tests we may be able to answer these questions. **POND SUCCESSION** is something we will talk about on this trip. Here are the basics, but ask questions if you have them!

① Bare Bottom:



not too many plants or anything much at all

② Submerged Vegetation:



little plants underwater

③ Emerging Veg.:



more plants, ones you can see more marshy

④ Temporary Pond and Prairie:



more solid ground plants

tell me what **EUTROPHICATION** means, and I'll think you're cool.

What can we learn about different wild life areas in Newton by different chemical levels in the water? What changes the of chemicals in different locations? Think about it

Leaders:

Jenny Casavant  
(969-2776)

Agatha Clancy  
(969-7407)

Tripsheet 1  
July 12, 1995  
~~9:00 AM - 2:00 PM~~  
9 AM - 2 PM

### Equipment - Field kit

Boots, Lots of Water, lunch,  
Spitting suit and \$5 (If we  
have time we'll be going  
swimming at Crystal Lake.  
If you have a pass, bring it.)

### Pond Succession

① Bare Bottom - sandy bottom,  
hardly any plants

② Submerged Vegetation - Elodea

③ Emerging Vegetation - Purple  
loostrike

④ Temporary Pond and Prairie-  
marshy

### Things To Think About-

① What's the difference between  
a pond and a lake?

② What is forest succession? How  
is it connected to pond succession?

③ How is a pond formed?

④ How is a lake formed?

# POND CIRCLE

Today we will be going to  
four different ponds in Newton  
to do some water tests.

After we leave Brown we'll be  
traveling to ① the Newton Cemetery  
ponds, ② the pond at City Hall,  
③ Bullough's Pond, and ④ Crystal Lake.

Besides doing water tests  
we'll also be talking about  
pond succession and eutrophy-  
cation.

Bullough's pond was dredged  
recently. Why was it dredged?  
What is dredging?

We will also talk about  
what effects the pond's  
surroundings has on it. How  
does the cemetery effect the  
pond itself? How does City Hall  
effect its pond?

# POND CIRCLE



Agatha  
969-7407  
Jenny  
969-2776  
July 12, 1995  
9:00 am - 2:00 pm

## Equipment:

Lunch  
Water  
Boots

First Aid kit  
Bathing Suit  
Towel

If you have a pass bring it or  
bring \$5 to get into crystal lake.

Today we will be going to Bulloughs Pond, Newton City Hall Pond, the Pond in the Newton Cemetery and last to Crystal Lake. If we have time we will be able to swim at Crystal Lake. At all of these sites we will be doing water testing.

Bulloughs Pond was a perfect example of Pond Succession. It was interrupted though by Dredging. The bottom of the pond was dug up. All of plants and animals that had been there were taken out. It is now again at the Bare Bottom stage. What are some other ways that humans or nature interfere with Pond & Forest Succession? What is humus? It is the nutrients from dead plants at the bottom of the pond's surface. It encourages the growth of new plants that is another reason why Bulloughs Pond was filling in.

What is the difference between a lake and a pond?

Fun Fact: Did you know that animal species change with the stages of succession.

Trip slip #7  
July 13, 1994

# ROND CIRCLE

LEADERS: Kathy Thorp 527-3681 Times: 9-2

Peter Montague, 969-4196

EQUIPMENT: Field kit, Lunch, Boots, Water, Bathing suit,  
money for Crystal Lake (\$5), towel

Today we'll be visiting four different ponds on this nice little trip. These water sites include:

The Ponds at Newton Cemetary

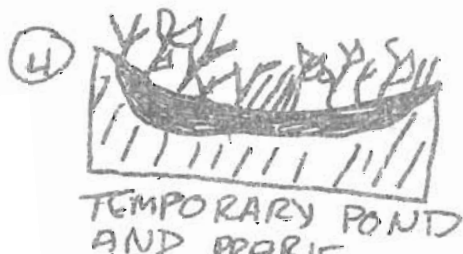
The Pond at City Hall

Bullaugh's Pond and

Crystal Lake, where you can swim if you'd like.

At each spot we'll take water tests to determine how healthy the water is. What are some of the ways you can tell if a pond is healthy or not without taking tests?

The major concept we'll talk about is POND SUCCESSION. It's a series of changes in the plant life of a pond:



QUESTIONS TO THINK ABOUT:

- What is EUTROPHICATION?
- What is the difference between a pond and lake?

## POND CIRCLE

Leaders: Pam Mahoney (527-5831)

Tripslip 9

Agatha Clancy (969-7407)

*Tuesday*  
July 13, 1993

Equipment: boots, extra water, field kit, bathing suit and \$5 (if we can we will swim in Crystal Lake--if you have a pass, bring it).

Location: from South we will walk to the Newton Cemetery ponds, the ponds at City Hall, Bullough's Pond, and Crystal Lake.

Now that ya'll know how to do water tests, we will conduct water tests at all of our stops in order to compare the water at all of these places. Bullough's Pond and the ponds at City Hall recently underwent a drastic change. These ponds were eutrophying ("over feeding") at an alarming rate. Phosphates cause the growth cycle of the aquatic plants to speed up. As more plants grow along the side of the ponds, more die and fall into the pond. The dead material builds up on the bottom, so the pond becomes shallower. At the same time, the plants on the sides grow toward the middle of the pond. Eventually the pond fills in. This process is called Pond Succession.

To stop the process of succession, the city decided to dredge the pond. Essentially, the water was drained and contained, while machines scooped out the bottom and sides of the pond. After, the water was released into the pond. What effect does dredging have on the pond's aquatic life, and how does this relate to food chains? What does this do to the water pH? What is the difference between a lake and a pond????

Stages of Succession:

- ① PIONEER (sandy bottom, few plants)
- ② SUBMERGED VEGETATION (Elodea)
- ③ EMERGING VEG. (Luzerne, coonstripe)
- ④ MARSH (Temporary Pond + Prairie)
- ⑤ BOG

TRIP SLIP #4

July 5 1991

Rachel 332-5932  
and

Delio 244-3377

## POND CIRCLE

### EQUIPMENT:

#### YOUR FIELD KIT

We will be giving you  
water tests to take  
as well.



We will be using water test kits to examine some aspects of the ponds we encounter. It is important to make an accurate recording of the information we learn so that it can be used by the Newton Conservation Commission et. al. to help improve our ponds.

Outside conditions also should be recorded.

What outside / weather conditions might temporarily or permanently affect a pond, lake or stream?

## Today we will examine FRESHWATER ECOLOGY

as we visit ponds around the Newton area. This will be a good opportunity to practice your map & compass skills.

Don't forget!

How to Orient your map by using the DECLINATION Diagram

How to follow your chosen trail

How to figure out the shortest route.

Many factors are involved in determining the nature of a pond or lake. These factors are limiting-- each has a maximum or a minimum value, above or below which life cannot continue for many species.

It is important for us to examine what these factors are and how many outside forces, including human activities, affect them.

What happens to a pond when <sup>must</sup> life can no longer exist in it?

### IMPORTANT WATER TESTS:

Dissolved Oxygen

pH

Hardness

Dissolved Solids

Turbidity

Color

pH is a scale from 0 to 14 which tells you whether something is basic, neutral or acidic.  $\text{pH} < 7$  is acidic, 7 is neutral, and above 7 is basic. Most fish can tolerate a pH range from 5 to 9, some cannot survive a change of 1 pH unit.



The Cattail

Typha

# POND CIRCLE

Trip # 9  
(969-2407) Agatha Clancy

(627-5331) Pam Mahoney

July 13, 1995

Time: 9:00-3:00

Equipment, water (ints)  
lunch  
field kit

We may be going swimming  
at Crystal Lake. Bring a  
towel, soap, and towel. If  
you have a pass, bring it. If  
not bring money for admission.

## STOPS

1. The Pond at Newton Cemetery
2. The Pond at City Hall
3. Bulloughs Pond and Ravine
4. Crystal Lake

At each of the  
sites we will be  
doing water tests.  
We want to be

testing four test sites so that we can  
compare the differences of the results.

What effect do you think that the cemetery  
has on the water? What effect does City  
Hall have on the water?

Just recently Bulloughs Pond and  
Ravine were dredged. Why did they dredge  
it? What is dredging?

If we do have enough time we  
will be swimming in Crystal Lake. Is this  
a safe lake to swim in? Why or why not?

What happens when life can  
no longer live in a pond? Why does this  
happen? How would this affect other  
life forms that live in the pond?

How does man make a pond?  
Is this good or bad?

# Pond Circle

Sarah Northrup 765-4762

July 5, 1994

9:00am - 2:00pm

Equipment - hiking boots  
Day pack  
Extra boot laces  
Raingear  
first aid kit  
pencil/notebook  
water (lots)  
lunch!  
bakingsuit

bring \$ because if we have time we will be going swimming at crystal lake (unless you have a pass)

We will be going to ponds and lakes today to test the pH of the water. What is a pH test and what does it tell us? We will be going to Bullough's pond, city hall, Newton cemetery and crystal lake. Bullough's pond was recently dredged why was it and how would this affect the environment.

Today will will be discussing pond succession and ~~eutro~~ eutrophication. The stages of Pond Succession are bare mud, submerged vegetation, emergent vegetation, open water pond and prairie. Eutrophication is happens at a very rapid pace. Why might this happen?

What is the difference between Pond Succession is an orderly succession of plant life inhabiting a certain area. Things that might affect this process are pollution, dust storms, hurricanes.

How do you make a pond? First you have to write down the date around the temperature, if it cloudy, if it raining, has it rained recently. Then you have to write down the actual results and how we will test the water. How much it. Why would some of the ponds at different ponds and lakes have different results? Could it be the location or the...