

college ruled

composition

Ana's Notebook

Area
9/15/17

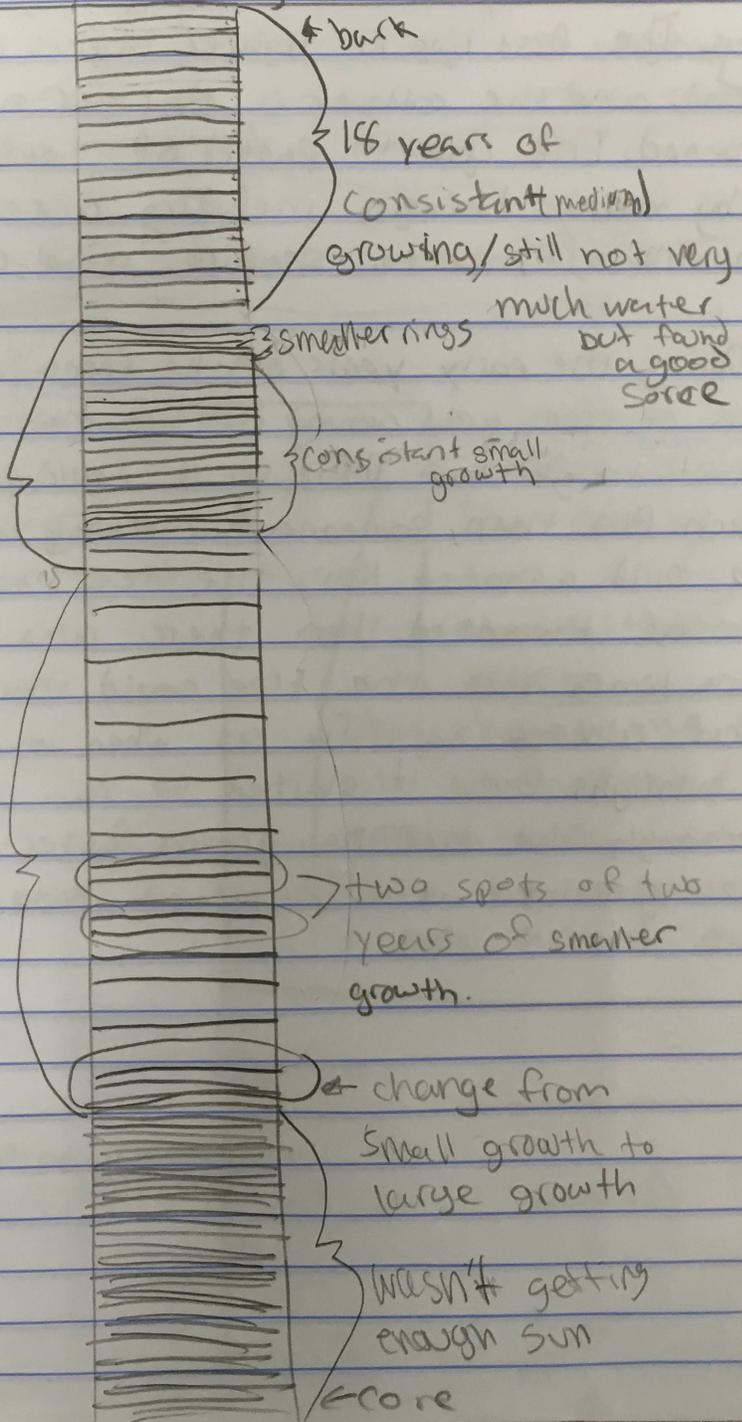
Tree core observation sheet

Collection date: 9/15/17	Location: Boston MA latitude and longitude: 42.291483 -71.114361	Species of tree: Cedar Tree age: 70 years
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Photo of core

Drawing of core

Observations



- in the very beginning there was very little growth
- The last 18 years has been consistent growth with medium amount of growth
- There was also a period of consistent small growth.
- After a period of super little growth there was a period of consistent large growth.

trees fell
were cut
down

9/14/17

Adventures in Dendrochronology

9/14/17

Summary: There are 5 layers of wood within the tree. They are the outer bark, inner bark, cambium cell layer, sapwood and heartwood. Each year the tree grows, setting down two rings. The first ring is lighter and is called Springwood, and the other is darker and called Summerwood. The growth pattern of trees can be affected by many things, including access to water and nutrients, insects, shading, and wind.

Story: During the early years of the tree's life, there were tons of trees growing around it. This made it really hard for it to get sunlight, so it couldn't grow very much. But then, someone came along and cut down trees to build a house. Now, the tree could grow as fast as it wanted. Then there was a drought for a long time, but the tree could manage. The tree grew almost as little as when it wasn't getting sunlight. But, it started to rain more and, though the tree has grown faster in the past, is growing at a consistent rate.

SPR 2017

Photo log For Blue hills investigation

Album title: Blue hills investigation

<u>Time</u>	<u>Location</u>	<u>What & Why</u>
9:29 am	A	This is of the landscape around and in of quadrat so we can know what the surroundings were
9:50 am	A	
9:50 am	A	This is a picture of a leaf we don't know the type of tree
9:49 am	A	This is a picture of the ground show the dead leaves, the turfs of moss and the unknown plant
9:43 am	A	
9:43 am	A	This is a photo of the Sap coming out of the tree in our quadrat. This shows that ^{the} tree could be rotten
10:27 am	A	
10:35 am	A	This shows the bit going into the tree and the orange wood coming out
		Shows the canopy of the area in and around our quadrat

Location coordinates:

A = 42° 13' 9" N 71° 5' 10" W (Quadrat)

28/17

Notes on Quadrat

Temperature: 74°F
Humidity: 62%
Visibility: 10 miles
Time/date: 9:37, 9/28/17
Precipitation: 0%
Clouds: clear
Pressure: 29.71 in
Slope: -3°
Wind: NW
Gusts: 15.0 mph

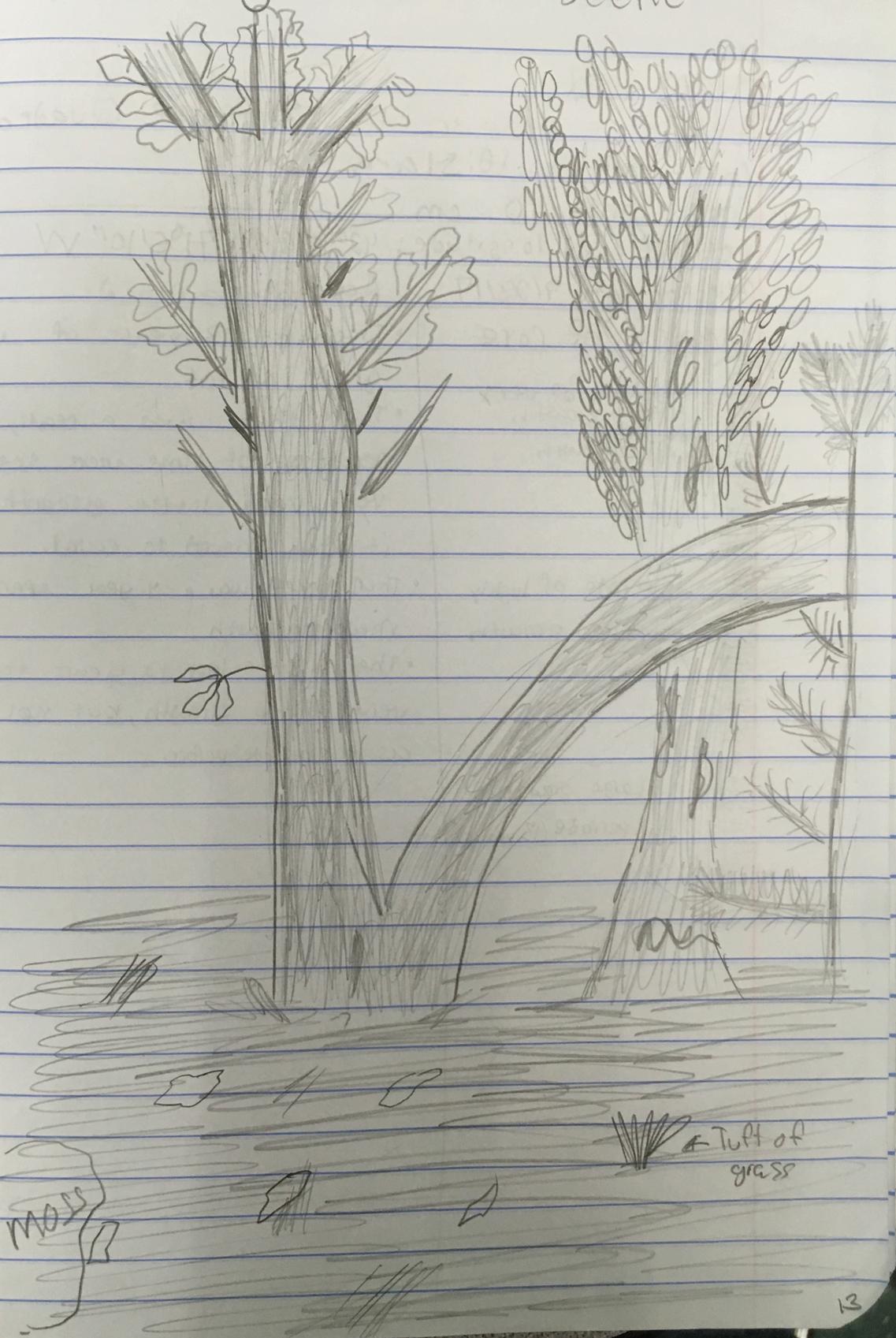
- No water, dry
- tufts of grass
- dead leaves
- small plant
- LOTS of sticks
- Pine needles
- one oak tree, smaller
- moss
- Sap coming out of tree
- Pine and cedar and mystery tree
- Tree about 30 ft tall
- Unknown surrounding tree equal height
- Surrounding Pine is about half or 15 ft
- Unknown tree is a Sweet (black) beech

Tree

- Sweet (black) beech
- a oak
- 1 pine
- cedar

1/28/17

Drawing of the scene



moss

A tuft of grass

c 9/28/17 Tree Core Notes

Tree: Oak

Height: around 30 ft

Core taken: 10:51 am

Core length: 10 cm

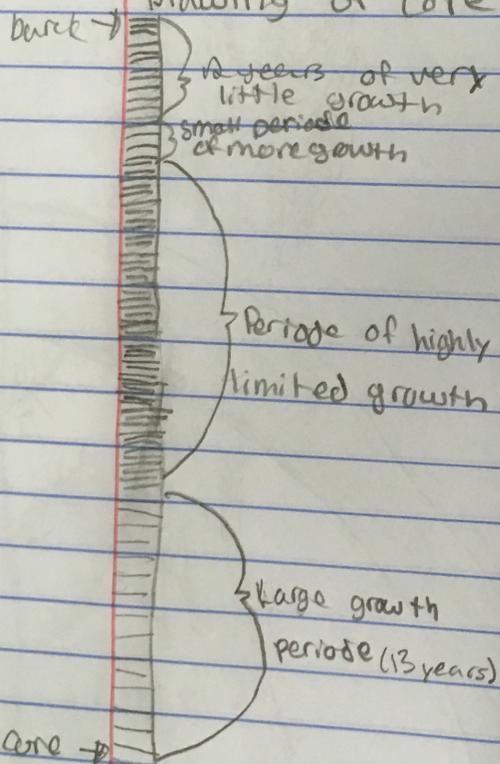
} inside Quadrat

Latitude and longitude: $42^{\circ}13'9''$ N $71^{\circ}5'10''$ W

Collection date 9/28/17

Age ~~26~~ 69 years old

Drawing of Core



• The first 13 years of its life it grew a lot.

• Then there was a really long period of time where there was very, very little growth. So little it was hard to count.

• Then there was a 4 year span of medium growth

• Then in the last 12 years there was very little growth, but not as little as the period before.

Book: 9/28/17

Date: 10/4/17

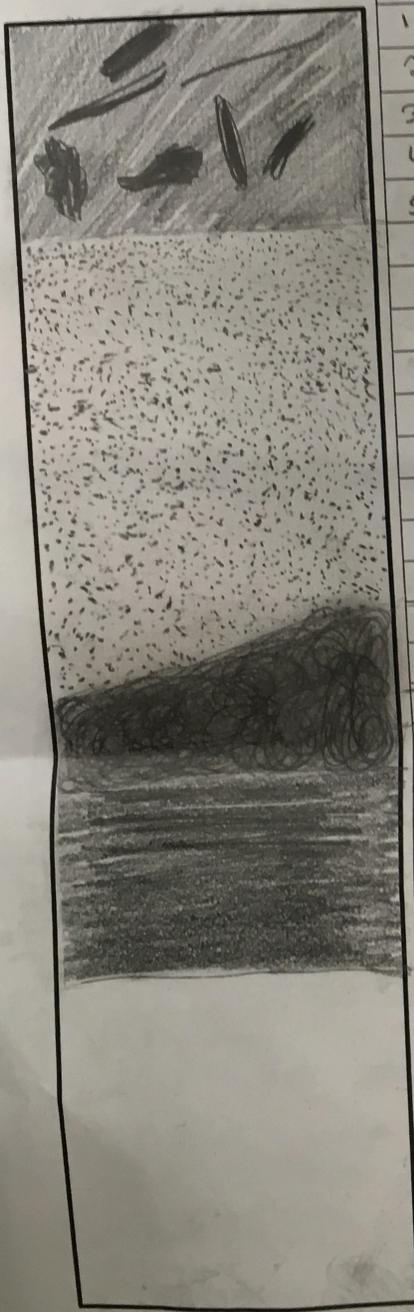
Name: Ana

Sample Location:

Latitude: 42°13'8"N

Longitude: 71°5'11"W

Core Length: 23 cm



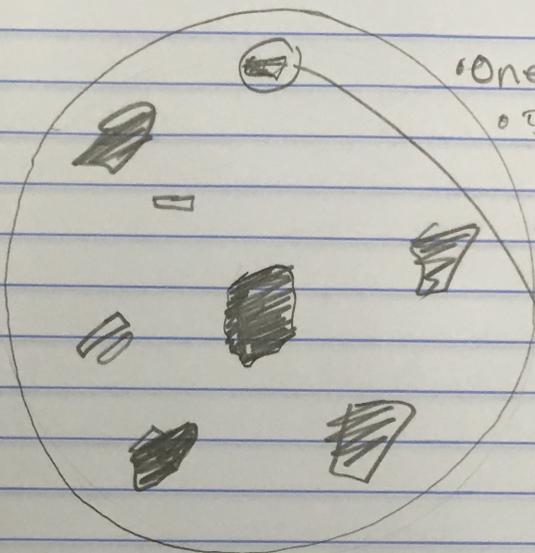
cm	Color	Texture	Observations
1	7.5 yr 2.5	Loosely packed, With organic material	Grass and roots
2	13		Small leaves
3			Loose
4			(took sample)
5			
6	7.5 yr 4/2	Tightly packed, larger grain visible grainy	Sandy, warm color
7			spots of larger grains
8			
9			
10			
11			
12			
13			
14			
15	7.5 2.5/2	loosely packed grainy sand	crumbly
16			some sand
17			
18			
19	7.5 2.5/2	Tightly packed smooth	no sand
20			dark color
21			
22			
23			(took sample)
24			
25			
26			
27			
28			
29			
30			

10/11/17

Diatom Drawings #2

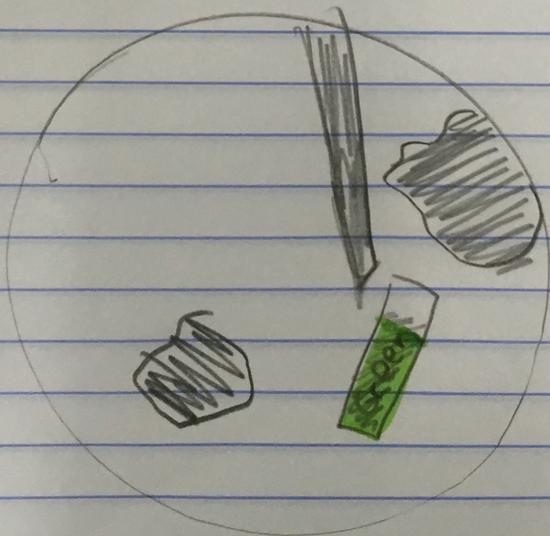
Top

100x



- One is 2/3 green.
- 5 total rectangle diatoms
- Most diatoms I have ever seen in one slide

400x



• 16

Date: 10/11/17 Name: Ana

Sample Location: Blue hills Pond Latitude: 42°13'8"N Longitude: 71°5'11"W

Core Length: 23 cm

cm	Color	Texture	Observations
1	7.5 YR 4/2	A lot	<ul style="list-style-type: none"> • Almost all sticks and leaves (Smear slide taken)
2	(lead color)	of sticks and leaves	
3		loosely packed	
4			
5	7.5 YR 5/2	Sandy	<ul style="list-style-type: none"> • lighter color • very little debris.
6		tightly	
7		packed	
8			
9		some debris	
10			
11			
12	7.5 YR	large pieces of wood	<ul style="list-style-type: none"> • "Charcoal" color • Big piece of wood.
13	2.5/2		
14			
15			
16			
17			<ul style="list-style-type: none"> • not as tightly packed as layer 2. (Smear slide taken)
18		Tightly Packed	
19		slightly	
20		Sand	
21			
22			
23			

11 be mapped

One is 9/13
 0.5 total
 0.1 total
 0.1 total
 0.1 total

oms



7) Some diatoms form stalks to resist waves or high flow rivers.

8) Diatoms are affected by all elements in their habitat, including the chemistry and the climate. Therefore, you can use the diatoms as clues to the state of the environment.

9) Since the silica cell walls of diatoms don't decompose, when diatoms die the shells stay in the sediment. This means that scientists can use the shells to infer about the environment.

10/11/17

Reading - "All about Diatoms"

- 1) The cell wall of a diatom is made of silica, which is a transparent impervious material. Since it is impervious, the diatoms have evolved with perforations in the cell wall to allow nutrients through.
- 2) Diatoms can be found in almost every area where there is water, making diatoms the base of aquatic food webs.
- 3) Diatoms are in the class of Bacillariophyta within the protist kingdom. There is 20,000 to 2 million species of diatoms. The range is so large because diatoms are still being researched.
- 4) Diatoms are microscopic, around 2 microns to 500 microns. When under a light microscope they appear transparent, but with a scanning electron microscope they appear opaque.
- 5) Planktonic species need to have certain adaptations to remain floating. One way of doing this is forming long chains by linking spines.
- 6) Some diatoms live in semi-aquatic habitats, so they can attach to surfaces such as rock or aquatic plants. This causes diatoms to be sheared in waves that aid the attachment.

10/10/17

Erosion

ella Kriegerung

Exposed roots →

Fallen tree

Rock

Keys

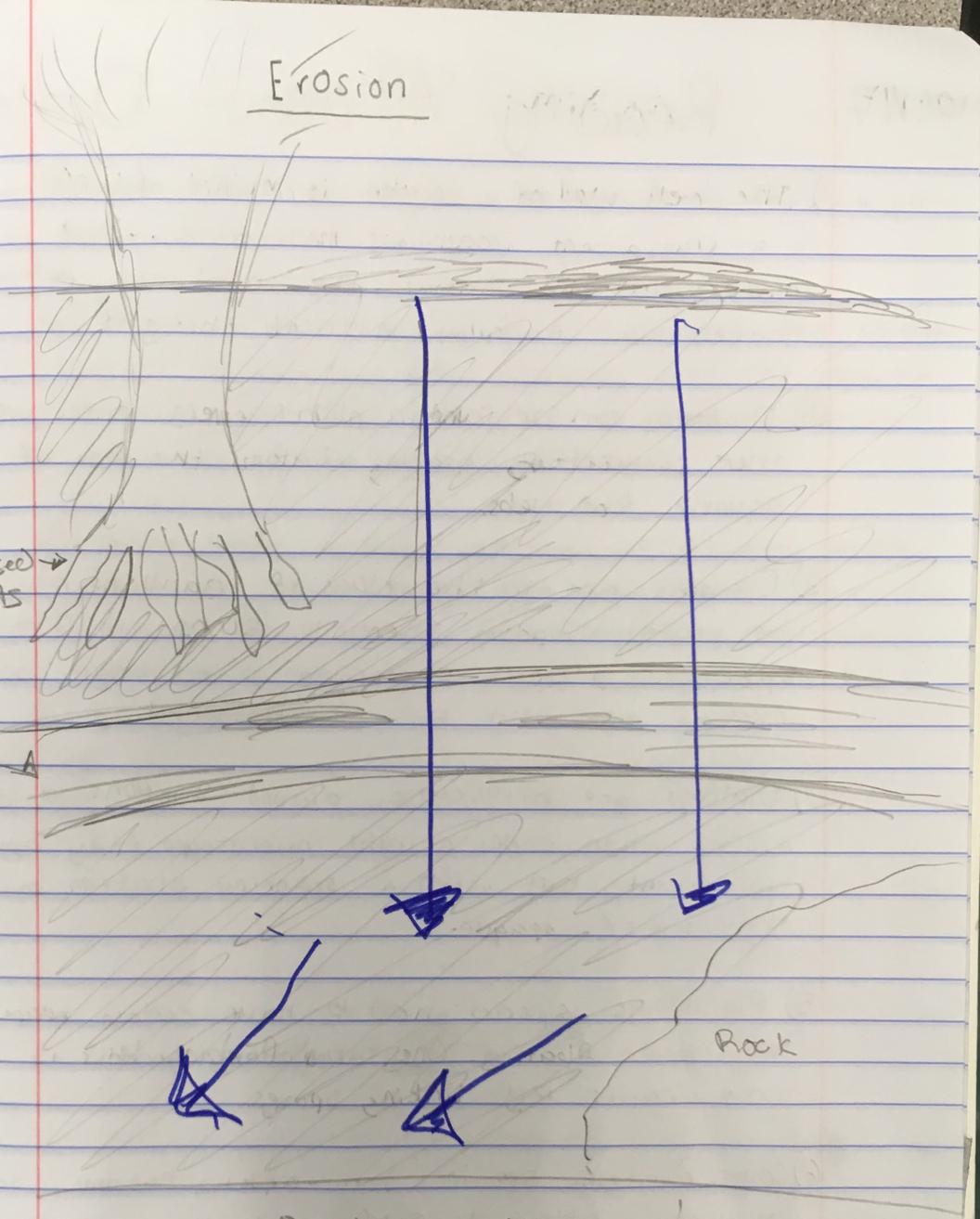
→ = rain water

pattern

|| = dead

leaves

Man Made Path

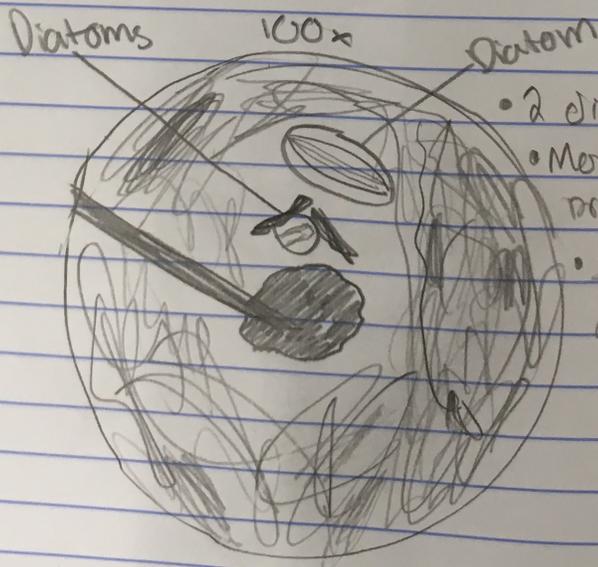
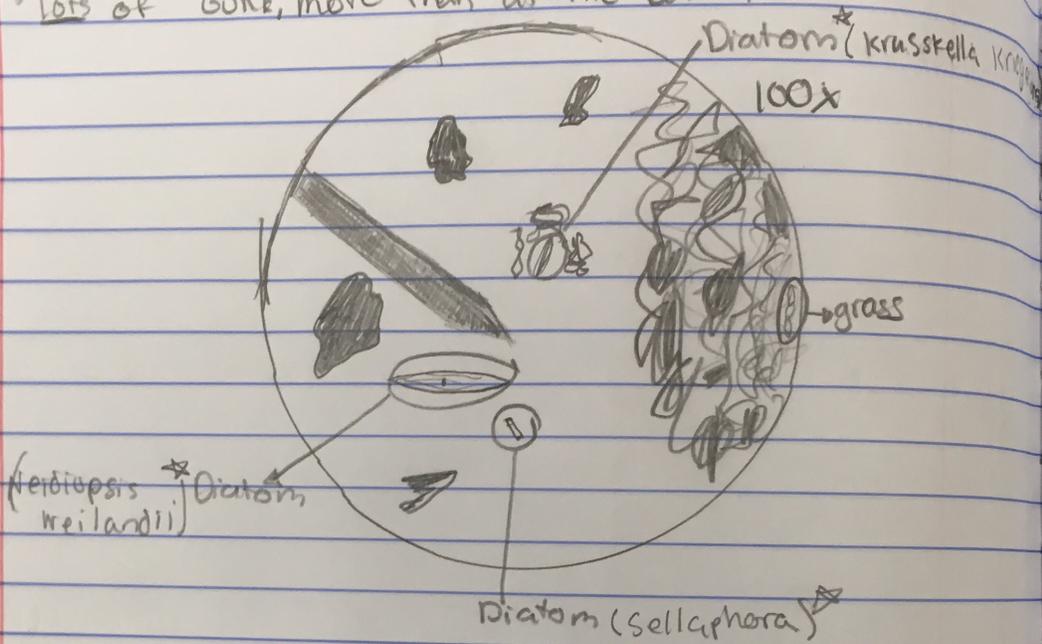


10/5/17

Diatoms

Top sample: 42° 13' 8" N 71° 5' 11" W

- 3 diatoms, 2 similar, one different
- Lots of Gunk, move them at the bottom



- 2 diatoms
- More Gunk than previous spot
- Small rectangular one was hard to find

* extra credit.

10/10/17

exper
roc

fallen
tree

kee
 → = rain
 pattern
 M = dea
 leav