



NORTHAMPTON MATH TRAIL

Welcome to the Northampton Math Trail! Today you will be gathering data, working problems, and making observations as you walk along Main Street. Some problems can be completed right on the trail and some will need to be finished back in the classroom. You should not need to go into any stores (except for ice cream later) in order to find the information you need. Enjoy yourself, and remember **MATH IS EVERYWHERE!**

You will be eating lunch at Pulaski Park, next to the Academy of Music. After lunch your group will have an opportunity to buy ice cream for dessert. Please notice the ice cream places as you walk Main Street.



Write the names of your group members here:

SCAVENGER HUNT

During your travels on Main Street, be alert for answers to the following questions:

- 1) Where can you find Roman Numerals in use?



- 2) Look at the Silverscape building. What is the time and temperature today?

- 3) Which building looks like a castle?



- 4) a. How many arches are on the façade of 99 Main Street, the Hampshire Council of Governments?

- b. What animal is on the weathervane?



- 5) What is the height limit for the railroad bridge across Main Street?
- 6) The Daly Building is located across the street from the Academy of Music (near Pulaski Park). Look up at the top of the building and you will see a sign. What year was this building built? _____
How many years has this building been standing? _____
- 7) In what war did Brigadier General Pulaski fight? Where was he wounded? What was his middle name? When did he die?
- 8) Make up your own scavenger hunt question!

SIGN WATCHING - Alphabet

As you are walking on Main Street, be observant! Look at the signs in and on the buildings, and find a word for each letter of the alphabet. It can be done - even X and Z!

A	N
B	O
C	P
D	Q
E	R
F	S
G	T
H	U
I	V
J	W
K	X
L	Y
M	Z

BONUS: INTERDISCIPLINARY SIGNS

Along the way, while you are looking at the signs, see if you can find names of stores that might refer to subject areas. Example: The Dancing Bear would fit both the science category (bear) and the artistic category (dancing). Be creative!

SCIENCE 1. 2. 3.	History 1. 2. 3.
English/Language Arts 1. 2. 3.	Math 1. 2. 3.
Art, Music, Health, PE, Tech Ed... 1. 2. 3.	Other? 1. 2. 3.

RESTAURANT PROBLEM

Many people love the variety of restaurants in Northampton. Let's find out how many restaurants there are in just one block of Main Street.

Data Collection

Look for the block that has Silverscape Designs on one side and Florence Savings Bank on the other side. The other end of the block has Toasted Owl on one side and Local Burger & Fries on the other. Write down all of the names of the stores on both sides of this block - street level ONLY.

SILVERSCAPE

FLORENCE SAVINGS

TOASTED OWL

LOCAL BURGER & FRIES

Total number of restaurants: _____ Total number of storefronts: _____

Write this information as a fraction and a percent. _____

Make a statement about the number of restaurants on this block.

Which restaurant would you like to try? _____

WINDOW WASHING PROBLEM

The new owner of the building that includes Veracruzana, Fitzwilly's and Toasted Owl needs to hire a contractor to wash the windows.

Data Collection

Notice there are four levels of windows above the shops. Make a sketch of these windows.

How many windows are there in total above the shops? _____

Problem Solving (can be completed at school on separate paper)

The owner has received the following two estimates:

1. ABC Window Wash estimates 15 minutes per window (inside and outside) and charges \$14 per hour.

What would it cost to hire ABC Window Wash? _____

2. Clean Glass Co quotes a figure of \$198 plus a charge of \$59 because of the height of the building.

What would it cost to hire Clean Glass? _____

3. Which company would you hire and why?



FASCINATING FACTS

Read the plaque on the wall to the left of the door to Fitzwilly's. Name three fascinating facts about this building and who worked here.

1. _____

2. _____

3. _____

TURN IT UP! (cd/record store)

Data Collection

Turn It Up! is located on Pleasant Street, just off Main Street. Turn right at Sweeties Candy store - it is just down the way. The store is down a steep flight of stairs - you DON'T need to go down the stairs! You can see the sign on the door from street level. Check the sign in the door to determine the hours of operation for Turn It Up! List the Days and Hours Turn it Up! is open:

Problem Solving

You have been hired by Turn It Up! to work part-time after school. You will work Monday, Wednesday, and Friday from 3:00 pm until closing, and all day Saturday, at the rate of \$6.15 per hour. Payroll deductions will be 12% of your gross pay.

- How many hours per week will you work? _____
- What will be your gross pay per week? _____
- After deductions, what will be your net pay per week?

As an employee of Turn It Up! you get a 20% discount on all CDs that you purchase. List four CDs that you would like to own (B-Side has just about everything!), and give each a reasonable price (assume CDs sell between \$12.99 - 21.99, or \$32.99 for a double CD). Calculate the price after the discount. Don't forget to add 5% Massachusetts sales tax.

1. _____	\$ _____
2. _____	\$ _____
3. _____	\$ _____
4. _____	\$ _____
Total before discount:	\$ _____
Total after discount:	\$ _____
MA Sales Tax (5%)	\$ _____
Final cost of CDs	\$ _____

PARK PROBLEMS

Take a break; sit down in Pulaski Park, and observe the people around you.

Out of the next 20 people that you see, how many are wearing glasses? _____

What percent is that? _____

Now look at cars. How many of the next 20 cars that pass by are white? _____

What percent is that? _____

Make up your own characteristic to look for.

What did you choose? _____

What percent is this? _____

HISTORICAL MURAL

Head down Masonic Street, across the street from Pulaski Park. Do you see that mural on the building? Go just past the Masonic Street Parking lot and look at the writing on the wall.

The mural depicts Northampton's history from when to when? _____

When was it restored? _____

Who do you think are the women in shorts, holding little paint brushes? _____

List five occupations that you see on the mural. Please be careful walking in the parking lot to look.

WAR MEMORIAL PROBLEM

Near Pulaski Park you will find the War Memorial which lists the names of those from this area who died in past wars. The Memorial is made out of polished stone and is set at an angle with a small garden placed at the base. There is a brick circle with a flagpole in the middle between the two Memorial panels.

Data Collection

Find the Merchant Marine emblem on the Memorial. Sketch the emblem and measure its diameter (use either centimeters or inches). Use this measurement to compute the area and circumference.

SKETCH

Notice the brick circle around the flagpole. Your task is to find the area and circumference of the largest circle. This is not as easy as it appears. Make a sketch and be sure to include all measurements that you need (don't forget units!).

SKETCH

ACADEMY OF MUSIC PROBLEM

Just below the triangular top of the building you see the words "Academy of Music". Sketch the figure that surrounds these words.

How many sides does this figure have? _____

This figure has an interesting mathematical name - look it up when you get back to school. _____

How many other shapes do you see when you look at this beautiful building? (We found five different geometric shapes - can you find more?)

Sketch and name them:

ICE CREAM PROBLEM

After lunch you have the opportunity to get an ice cream dessert. There are several places in Northampton to go. While you are buying your ice cream, please write down your four favorite flavors below.

1. _____
2. _____
3. _____
4. _____
5. _____



Now, assume there are two types of cones (sugar or regular), and two types of toppings (nuts or sprinkles), and the five ice cream flavors (from above) that you could select for your ice cream cone. You can choose one cone, one ice cream flavor, and one type of topping. How many possible combinations of cones, ice cream, and sprinkles are there? Make a tree diagram to show all possibilities.

