

## A Living Laboratory: Activity Template

We are creating a cross-disciplinary collection of teaching activities that use the best practice approaches fostered in the “Living Lab”: adoption of City Tech’s General Education Student Learning Outcomes, George Kuh’s High Impact Educational Practices, place-based learning, open digital pedagogy (the OpenLab), and formal assessment methods.

Share your best practices with your colleagues! Use this form to record a favorite activity; an activity can be as small as an in-class exercise or as large as a semester-long project. Your description can be short or extensive – take as much space as you need.

Activity Title:	Bustling Vacancy_ Mapping “behavioral” city patterns to produce architectural space.
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### Activity Description:

Provide a brief description of the activity.

In this course, I create a project with multiple components that incorporates research, evidence, reading and thinking critically, demands organization and presentation skills and requires the ability to work collaboratively. Students work in groups of 2 or 3 over a semester period to produce a highly conceptual design project that is generated following rules of grammar, logic and mathematics. The project brings together the Urban and the Architectural scales through a series of NYC data abstractions and the establishment of rules that will define the students’ design in the architectural scale.

The students are asked to come up with a design dictionary of 3 main architectural elements that serves as their “alphabet” for space creation. At the same time, each group focuses on developing a visual language to discuss, collect, measure, map and quantify NYC behaviors/patterns. The students will respond to the literal and symbolic notion of “Motus” in the city, and create mappings, diagrams, data visualizations and diaries. The projects will ultimately be based on the cartography of their architectural elements in such a way that they relate to the city mapping analysis. The assembly of these elements will ultimately create a spatial 3d pattern which programmatically serves as an **open air experiential space** in an empty city lot.

The assigned project involves four process stages:

- **“Alphabet” stage**

The “Alphabet” stage involves the creation of a design dictionary of three basic architectural elements: stair, wall and atrium. These are the “bricks” students will be using to construct their space.

- **“Data” stage**

This stage involves the study of New York City’s five boroughs using data analysis in order to identify and map “behavioral” city patterns such as patterns of noise, circulation, population, income, crime rates, programmatic uses, urban density, energy consumption etc. The teams select a minimum of two data

## A Living Laboratory: Activity Template

maps and numeric tables supporting these maps and through research, observation and analysis they correlate them and create a series of abstractions.

### - “Syntax” stage

During the “Syntax” stage the students extract rules out of the city patterns that will define in a later stage their design. Outcome of this phase is a series of 2d diagrams and graphs explaining the “behavior” of each of the maps and their diagrammatic interpretation in 3d.

### - “Composition” stage

This stage is about composing all the material produced during the Alphabet, the Data and the Syntax phases. The students employ the generated rules in order to assemble their architectural elements' studies. They put together selected wall, atrium and stair studies (a minimum of 2 studies) following the rules extracted from the city pattern research to create a project. **The projects will not take data literally. They will rather depart from conventional data definitions and ask what is the city, what is data, and how can they be re-applied in an architectural scale.**

### Learning Goals:

What do you aim to achieve with this activity?

For this project the students are provided with guidelines for a better understanding of the **integration of specialized software** into all aspects of the architectural profession. The class **simulates the design office space complexity** so the students familiarize with its demands.

Students work in groups, demonstrating **teamwork spirit, schedule and manage their time in collaboration with others, be professional with timeframes, enhance their speech and rhetoric skills**. They have to weekly fill out timesheets learning how to be efficient with the hours spent per task. The work environment demands that employees work together responsibly so learning in the classroom is initiated in a highly collaborative, interactive, and experiential way and the evaluation and feedback given in between them is encouraging, learning focused and transparent.

Students have to use data related to their city as their driver towards design. During this process students develop **research, analytical and compositional skills**. They conduct research related to NYC data using online resources such as <https://nycopendata.socrata.com/> , <http://nyc.pediacities.com/Nycpedia> , <http://wirednewyork.com/forum/> and learn how to properly cite sources. **They gather, interpret, evaluate, and apply information discerningly from a variety of sources.**

Students present regularly throughout the semester to invited professionals from the architecture and urban design as well as curatorial fields. The presentations are in the form of printed boards 24”by36” (I provide them with the template) and oral presentation. Through publicly presenting their work students **gain confidence and consciousness on their production, engage in constructive dialog with professionals** and through this personalized experience increase their interest towards higher education levels.

Students curate all the work produced for the class including their group project in an **individual book / portfolio**. Main emphasis is given into the narrative of their design concepts and how they all tie together. Story telling is the center of their curation. Every book represents each author so each student

## A Living Laboratory: Activity Template

should manifest his/her arguments through this book. Together with a printed version the students are also asked to use OpenLab, Archinect and Issuu as platforms to digitally create their **eporfolio**.

In the end of the semester, I showcase students work at my online digital platform [PLB\\_Education](#) (see *link below*) giving students the opportunity to **be exhibited, to make their achievements visible not only to School' 's community but also to the wider public**. For the next semester I plan to also use OpenLab as an online platform in which students will post their blogs and discussions participating in a more interactive learning process.

This project and its supportive materials (online archive, recordings etc) create a strong base for **continuation past the course's teaching period**. Each subsequent class will build on previous semester classes' work and therefore document how NYC data progressively alter.

### Timing:

At what point in the lesson or semester to you use this activity? How much classroom time do you devote to it?  
How much out-of-class time is expected?

This activity is a semester long project. I introduce the project on week #2 when I spend 30 minutes in class explaining the details, giving references and engaging on brief discussion with the students. I also post the project's detailed description, resources, references and tutorials on Blackboard. For this coming semester I will also use the OpenLab platform for discussions and open feedback. From that point on my lectures and weekly assignments support with knowledge on integrated softare the evolution of the project.

After Midterm I split the class in two sections: first part is a lecture or workshop on software and technical skills and the second part (60mnts) is organised as desk-critiques or open discussion on each team's progress and concept.

Students are required to work in groups and meet once per week with their collaborator/s for two hours of brainstorming. Then they have to distribute the tasks between them in order to meet the weekly goals of the project as defined in the weekly assignment handouts. I expect students to devote 4 hours weekly over the course of a semester. They use a timesheet template created in google drive to control the time spent per task. Generally, I will allow some class time for students to meet and discuss and for me to check in with their groups, however, students are expected to devote time outside the classroom for gathering and analyzing their data and composing their design.

### Logistics:

What preparation is needed for this activity? What instructions do you give students?

The students are given step by step all the software and theoretical support needed to develop the project's multiple components in the form of weekly lectures and class discussions. So, **the project is broken down to 10 weekly assignments/tasks outlined in the form of instructional handouts**. I also post on Blackboard:

## A Living Laboratory: Activity Template

- Tutorials and Class Recordings so I support them with possible software questions they may have outside the class hours.
- References and Resources.
- Base files for their convenience.

The students are given a template they have to follow and fill with required visuals and text description for their project's presentation. These are boards 24" by 36" that they gather all the material needed to visualize their project (*see project's brief*). Additionally, the whole class is sharing a google spreadsheet that serves as timesheets documenting hours spent per task as individuals and as groups for the project (*see project's brief*).

General Education SLOs:

Which of City Tech's [General Education Student Learning Outcomes](#) does this activity address?

INTEGRATION/ Work productively within and across disciplines.

- Resolve difficult issues creatively by employing multiple systems and tools.
- Gather, Interpret, evaluate, and apply information discerningly from a variety of sources.

SKILLS/ Acquire and use the tools needed for communication, inquiry, analysis, and productive work.

- Communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means, and in more than one language.
- Understand and employ both quantitative and qualitative analysis to describe and solve problems, both independently and cooperatively.

- Use creativity to solve problems.

KNOWLEDGE/ Develop knowledge from a range of disciplinary perspectives, and hone the ability to deepen and continue learning.

- Show curiosity and the desire to learn.
- Acquire tools for lifelong learning—how to learn, knowledge of resources.

VALUES, ETHICS, AND RELATIONSHIPS/ Understand and apply values, ethics, and diverse perspectives in personal, professional, civic, and cultural/global domains.

- Apply knowledge and analyze social, political, economic, and historical issues.

High Impact Educational Practices:

Which of [George Kuh's High Impact Educational Practices](#) does this activity incorporate? Does it use the [OpenLab](#) for [open digital pedagogy](#)? Does it include [place-based learning](#)? Choose all that apply and/or add your own.

George Kuh's High Impact Educational Practices:

- Collaborative assignments and projects
- Open Digital Pedagogy (the OpenLab)
- Undergraduate research
- Capstone courses and projects
- Place-Based Learning

## A Living Laboratory: Activity Template

### Assessment:

How do you assess this activity? What assessment measures do you use? Do you include your evaluation in grade calculations?

This project is 50% of the overall grade. All the students have to weekly upload their work digitally on Blackboard following a given file name protocol. I have designed and posted on Blackboard a Rubric relevant to the project's learning objectives with 5 scales (*needs improvement, satisfactory, good quality, excellent quality*). The class is broken down into four big presentations (1/4 pin up, Midterm Review, 3/4 pin up, Final Review). The overall grade for this project is outcome of their weekly submissions grade (40%) as well as their 4 main group presentations grade (60%) throughout the semester.

The performance criteria I assess for their **group project presentations** in my Rubric are based on oral communication:

#### **Organization**

- Ability to collaborate and present successfully as a group a highly sophisticated project.
- Professionalism in presentation and meeting the given deadlines.
- Followed layout and visualization instructions for the project.

#### **Quality of Supporting Material:**

- Neatness and accuracy of the visuals.
- Quality of written description.
- Quality of city data analysis and data interpretation.
- Quality of final design as defined by the constraints set by the city data each team is analysing.

#### **Delivery**

- Quality of oral presentation. The presentation techniques, speech and posture as well as coordination btw the group members are appropriate and appealing.
- Quality of plotted boards (nicely cut, pinned and in great resolution).

The performance criteria I assess for their **weekly group project digital submissions** are:

- followed instructions and submission on time
- file composition
- file neatness & accuracy,
- file line weights & resolution
- file presentation.

### Reflection:

How has this assignment impacted your teaching? What challenges did you encounter and how did you address them? What feedback did students provide? How would you imagine this activity being used in different disciplines?

This is the second semester I assign this project and students have positively responded addressing it as one of the most motivating and challenging projects they have dealt with. It has been a motivator towards high quality of work and a very interactive and vivid class. I am very excited to implement all the

## A Living Laboratory: Activity Template

knowledge obtained through the Living Lab Seminars related to the use of OpenLab and the incorporation of HEP and General Education SLO's to the project's brief.

This assignment has many components so in order to create a very clear methodology for the students I have to provide them with very specific visualization steps, templates and class recordings. Directing all the steps of the project, creating an online platform to exhibit their work, creating timesheets, refining the rubrics for this project's assesment and providing them in advance to the students has made my teaching overall more effective.

The main challenge is having the students work in groups and being able to manage their time accordingly. For that reason, I create an hierarchy simiral to the office space where the working team reports to the project leader regularly through emails, timesheets and notes on each others projects shared with the whole class.

This project by nature relates not only to architectural, urban and preservation design oriented fields but also to Curatorial Fields and Social Sciences. Since this project is based on both qualitative and quantitative data analysis there could be a correlation with Math fileds as well. Finally, the project focuses on developing a visual language to discuss, collect, measure, and quantify data. The students and create mappings, diagrams, data visualizations, diaries so I could imagine this project being part of Visual Arts Studies. In the future, I would like to furttther the project to better connect STEM fileds with Liberal Arts.

### Additional Information:

Please share any additional comments and further documentation of the activity - e.g. assignment instructions, rubrics, examples of student work, etc. These could be in the form of PDF or Word files, links to posts or files on the OpenLab, etc.

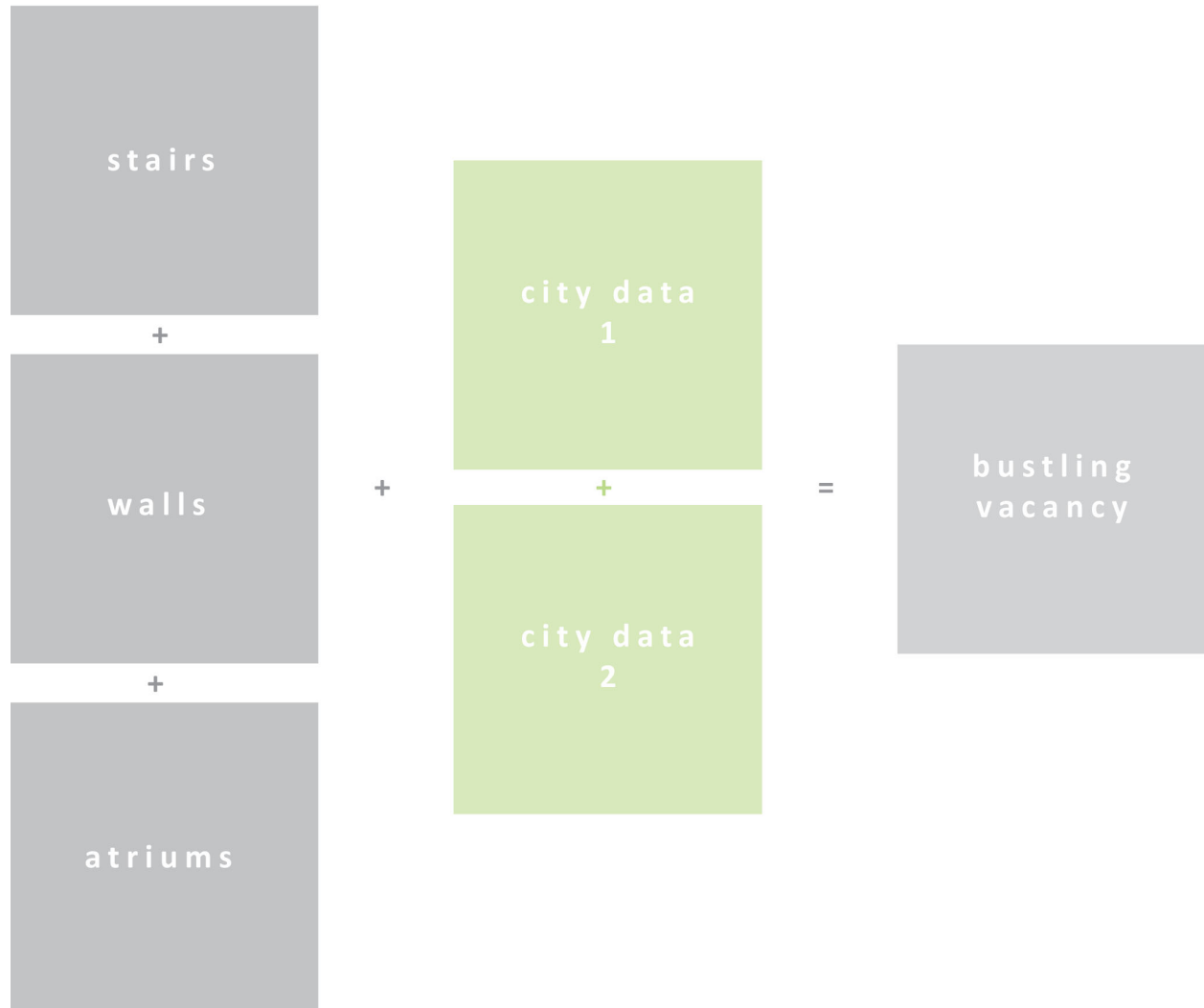
This is link shows the course's OpenLab page with the courses syllabus and the weekly handouts, and the description for this project. This website is still under construction and will be used for the next semester:

- <http://openlab.citytech.cuny.edu/3609-integrated-software-in-the-architectural-office/>

This link showcases students work from the previous semester:

- <http://www.plbny.com/#!3609-bustling-vacancy/c1y5p>

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Jason Ng. Diagram made by student visualizing the process steps for the integration group project.