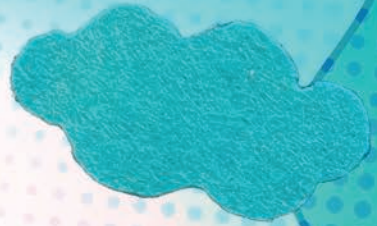
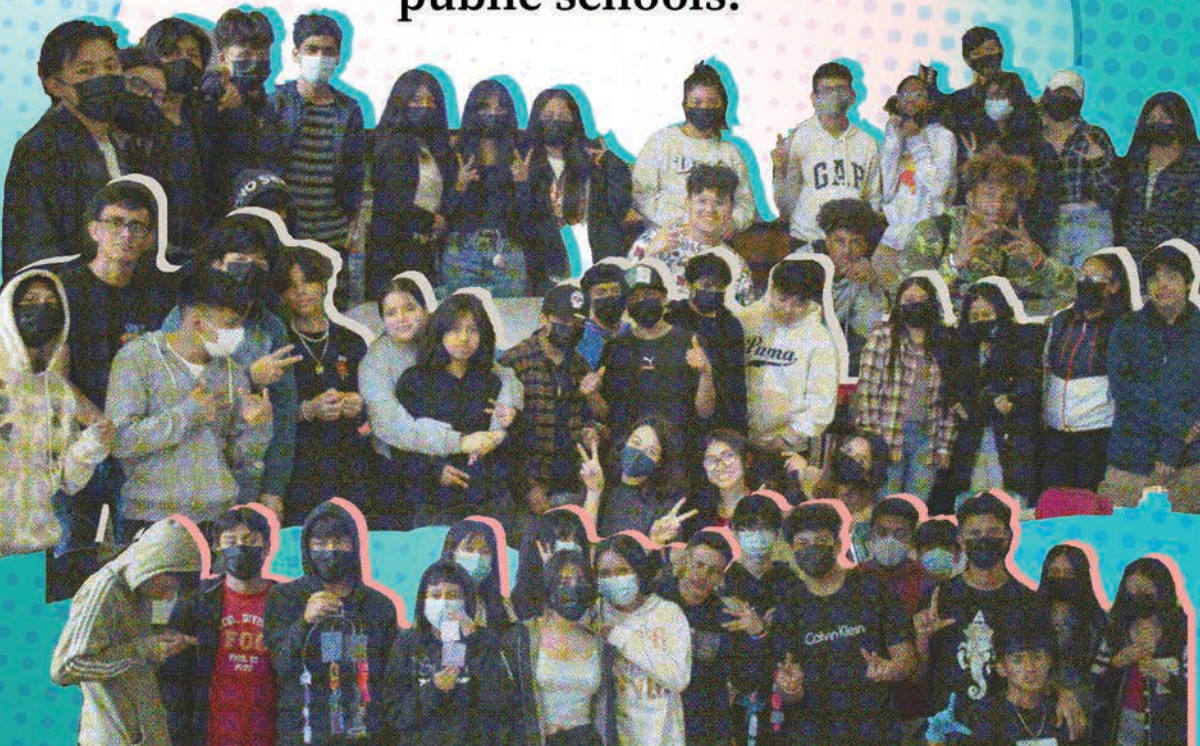


Take Care of Indoor Air



What is the air quality in NYC
public schools?



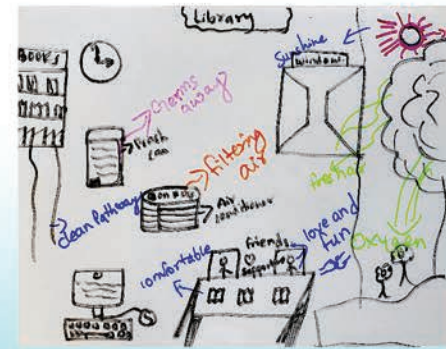
Studies have shown that indoor levels of pollutants may be two to five times higher than outdoor levels.

In the spring of 2022, Teaching Artist Cody Herrmann collaborated with students from the International High School for Health Sciences to take a closer look at air quality in schools. To investigate the issue, students talked to community members in Elmhurst, interviewed stakeholders working on the issue, and created mixed media mobiles and pennant flags to process the information.

The team gathered what they learned and created this booklet to teach others about indoor air quality, how it impacts students and the community at large, and what changes we need to improve the quality of air in our schools.

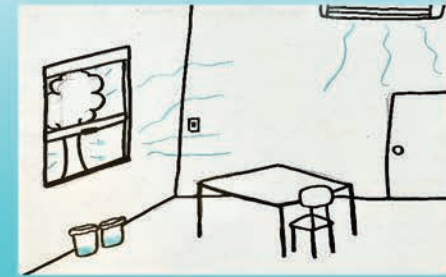
What is Air Quality?

Air Quality is a measure of how clean or polluted the air is. Monitoring this is important because polluted air is bad for our health—and the health of our environment. The cleanliness of the air we breathe is measured with the Air Quality Index which shows changes in the amount of pollution in the air.



What is Indoor Air Quality?

Indoor Air Quality refers to the amount of air pollution within and around buildings and structures, especially as it connects to the health and comfort of people inside those buildings.



“What is good air quality?”

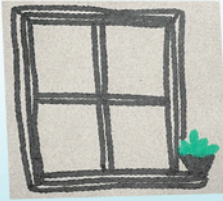
“Do we have good air quality in our school?”

“How can bad air quality impact students and communities?”



What makes good indoor air quality?

"You shouldn't see anything in the air, you shouldn't smell anything in the air, your body shouldn't feel badly, you shouldn't be coughing... Good indoor air quality is often described by the absence of things..."

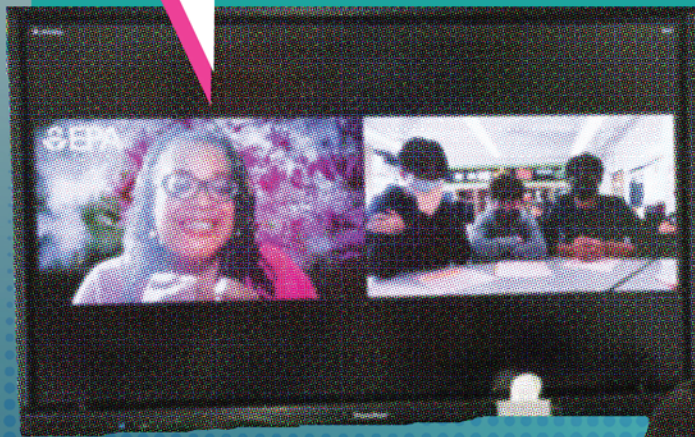


The other thing about good indoor air quality is being able to remove pollutants from the air...we want clean air circulating throughout a building and throughout a space so that you are able to breathe in air that has been filtered and cleaned and is changing all the time...



Those are the main things, ventilation, filtration and controlling sources from being there in the first place. And that combination of things creates good indoor air quality."

**- Tracy Enger, Program Manager
Indoor Environments Division at U.S.
Environmental Protection Agency**



What impacts air quality in the classroom?



Particulate Matter

"So there's something [called] particulate matter which exists outside and is created through things like factories and whatnot but it's also created inside, from combustion appliances. So anything that creates a fire, your stove, your furnace, any of those things create this stuff called particulate matter which can get deep into the lungs and cause problems."

- Tracy Enger

Volatile Organic Compounds

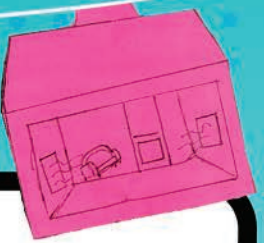
"The chairs you're sitting in, the desks you're sitting at, the copy machines that we use, all of that equipment can also create something called VOCs, volatile organic compounds...So think about the new car smell, right? Everybody loves the new car smell [but] the new car smell is actually volatile organic compounds...That [smell] is the plastics, it is the adhesives, it is all of the things that put that car together."

- Tracy Enger

How We Spend Our Time Indoors

"As humans we live in a built environment, we spend 90% of our time indoors, in homes, in schools, in work office buildings, we spend a lot of time inside. And we have created that built environment...and the things that we use to build it, the things that we use to furnish it to be comfortable in it, and the activities that we do in there can also create pollutants."

- Tracy Enger



Our Buildings

"Some [school buildings] in New York City [will have problems] if they're very compact and don't have cross ventilation. If they have central air conditioning [and] it's very old, and maybe it gets damp inside and has mold growing in it and it's blowing all of that on people then that needs to be addressed. And that has been a problem that has happened in New York City schools before."

Airborne Viruses

"The same things that help with [indoor] air quality help with COVID. Because where is COVID coming from? All of you...[So] you want the room to be ventilated, to help decrease the chances [of COVID spreading]."

- Brian Vant-Hull, Research Scientist,
City College of New York



Outdoor Pollution

"There are lots of potential indoor air pollutants. Some of them come from the outdoors. So anything that is outdoors that is a pollutant, from factories, from bus idling, from pesticides. All of those things that are outside, have the potential to come inside."

- Tracy Enger



How does bad air quality impact students and schools?

Allergies, Respiratory Issues, and Worse

"[The] impacts can be anything from itchy eyes to allergens to coughing, but also...how often or how severe your asthma or your allergies are, as well as lots of other respiratory issues...Some of the Volatile Organic Compounds(VOCs) and some of the other pollutants are also carcinogens. So indoor air quality can affect your health by a wide range. Everything from just minor discomfort to actually things that can be terminal [and] deadly."

- Tracy Enger



Unsafe Space For Learning

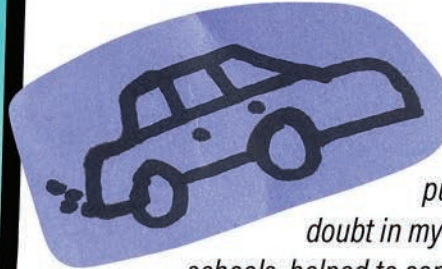
"If the air quality in our schools isn't good that has a direct impact on you all as students and your health, well being, and your ability to see schools as a safe space, as a restorative space, as a place where you can focus on education and things that you're passionate about."

- Council Member
Shekar Krishnan, NYC
Council Member for
District 25



Nearby Highway Pollution

"The way the city was designed, neighborhoods like ours have little green space, we are surrounded by highways, like the BQE for example that run through our neighborhood... or in the South Bronx, you have the Cross Bronx Expressway. You see the way in which neighborhoods like ours have been deprived of the resources we need, and have faced so much more in the way of pollution."



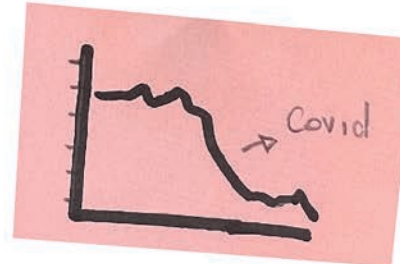
Spread of COVID

"Air quality is such a crucial part of our public health and stopping these epidemics. There's no doubt in my mind that poor air circulation in buildings, in many of our schools, helped to contribute to the spread of COVID. We need to make our schools and all our buildings safe environments from a public health standpoint."



Vulnerable Communities

"The job of government is to really especially support communities and provide resources for those who are most vulnerable. We are definitely, as COVID has shown, a very vulnerable community. But the city, state and federal government were utterly unprepared for a pandemic and didn't do enough throughout. We have not learned enough from the pandemic about the investments that we need in our communities and in our air quality and infrastructure."



What do our neighbors think?

In the spring of 2022, IHSHS students went out into the community and surveyed their neighbors about air quality in schools.



94% of our neighbors think that students need good air quality in school

64% of our neighbors think that good air quality is very important for learning

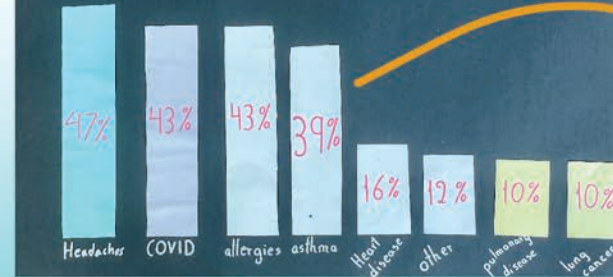


100% of our neighbors think that good air quality is important for your health

98% of our neighbors think we need better indoor ventilation in schools because of COVID



Have you or someone you know been impacted by the following illness due to bad air quality?



39% of our neighbors have been impacted by asthma

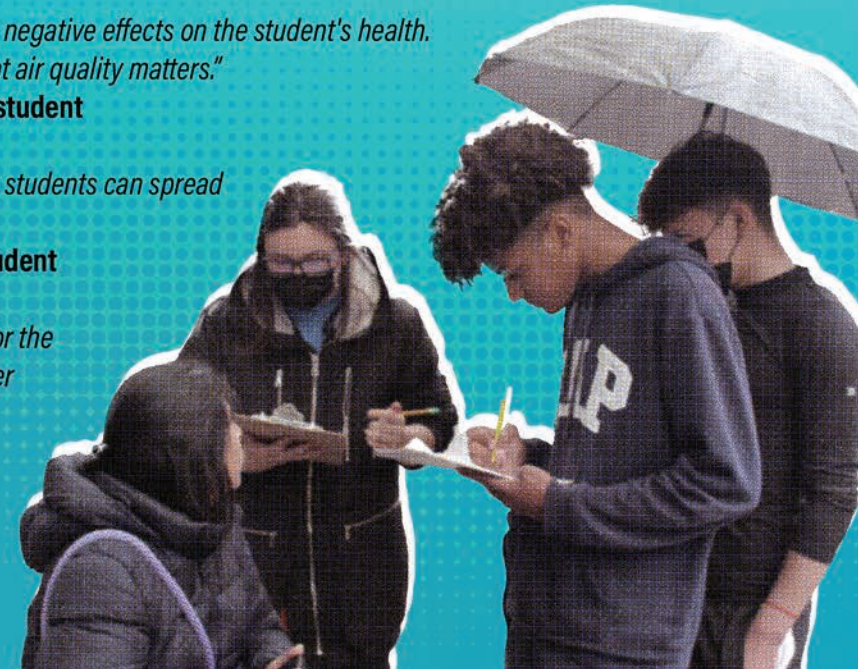
43% of our neighbors have been impacted by allergies

43% of our neighbors have been impacted by COVID

"Bad air quality can have negative effects on the student's health. I want others to know that air quality matters."
-Angeles Perez, IHSHS student

"Without good air quality, students can spread diseases and get sick."
- Surya Bhatt, IHSHS student

"Air quality is important for the community, as it is a better way to be well."
- Ana Arce Cuahutla, IHSHS student



How can we change things?

Write Environmental Laws

"So I would say that one of the biggest changes that EPA has made is in creating the Clean Air Act. [The] EPA write[s] environmental laws, and then we make sure that they actually happen. So like with the Clean Air Act, it really identified some of the most important pollutants that we need to control and to in order to protect public health."

- Tracy Enger

Student Organizing

"The most powerful organizing groups are student organizing groups. When you all come together to say, we're demanding this from the Department of Education, we're demanding this from our schools, they better be listening... And then you want to use that to really lift your voices and mobilize and put pressure on the administration and the Department of Education and City Government to deliver those resources."

- Council Member Shekar Krishnan

Talk To Elected Officials

"I think elevating this issue [is important], the way you all are doing now. Reaching out to elected officials like myself and other advocates to say we want to hear your thoughts on how to improve our air quality."

- Council Member Shekar Krishnan



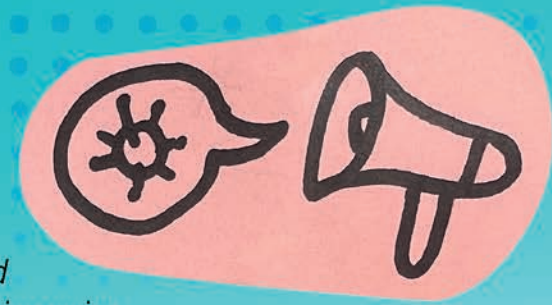
Learn about air quality



Tools for Schools

"So [The Environmental Protection Agency's] Tools for Schools Action Kit, helps teachers, facility managers, students, parents, food preparation, people, custodial staff, everyone understand how their activities can contribute to either improving or creating problems in the indoor cycle of indoor air quality, and how you go about addressing them and fixing them"

- Tracy Enger



To learn more about the EPA's Indoor Air Quality Tools for Schools Action Kit visit: epa.gov/iaq-schools



Quality Check Our Buildings and Ventilation

"If a building has [central] ventilation, then what happens is sometimes it gets moist inside [and] you get mold growing inside it...[Mold] can happen inside the big air conditioning systems and then they have spores. The way that they multiply, they release the spores, and those can go into your lungs."

- Brian Vant-Hull

Consistent Air Quality Testing

"One thing that might be good is if you got air quality monitors in the classroom. So you could check and see if things are changing. So if you had maybe one outdoor [monitor] that the whole school can see and then one for various classrooms so that people could see what's happening, and say, 'Okay, the ventilation is not good enough. We have to fix this.'"

- Brian Vant-Hull

How could things be different?



Invest in Our School Buildings

"[NYC Schools] were not prepared for this pandemic as buildings. The buildings do not have enough good infrastructure, they don't have enough ventilation, and the pandemic really exposed how poorly designed our schools are from an air quality standpoint. And some of that goes back to the fact that our schools, many of them are very old, and also haven't gotten the funding and repairs they needed for so long to so we need to ensure that we're investing as a city and Department of Education in top notch air filtration, ventilation and circulation systems in our schools."

- Council Member Shekar Krishnan

Invest in Neighborhoods with the Least Amount of Green Spaces

"Jackson and Elmhurst rank 50 out of 51 council districts, when it comes to green space per person in New York City. We have some of the least amount of green space in all of New York City and that wasn't any accident. That's the result of decades of disinvestment in neighborhoods where some neighborhoods that are wealthier, that are whiter, are prioritized far more for resources than ours."

- Council Member Shekar Krishnan

Keep Wearing Masks in Schools

"We know that masking is our best defense against the spread of COVID... And so the best protection we can offer for all of our students in our schools and throughout our city is to always mask indoors."

- Council Member Shekar Krishnan



More Green and Open Spaces In Schools

"We also need to have more open space in our schools too, right... some of our schools are designed as these big boxy buildings with no real open space either. Another way to improve our air quality [in schools] is to design more open space and green space in our schools and to make sure that our students can use those spaces so they're not just inside all day."

- Council Member Shekar Krishnan

Accountability to Each Other and Our Environment

"I think that one of the best things that EPA has done is help us all understand that we're all connected to the environment, the environment is connected to us, and we're all connected to each other. So what happens in New York City impacts what happens in DC and what happens in DC impacts what happens in New York City... It's all connected, and we all have to take care of the environment, take care of ourselves and take care of each other. And that is environmental justice."

- Tracy Enger



Center for Urban Pedagogy (CUP)

Teaching Artist: Cody Herrmann
Co-designer: Michael Lawlor
Project Lead: Ro Garrido

International High School for Health Sciences (IHSHS)

Classroom Teacher: Andre Machado
Principal: Anthony Finney
Assistant Principal: Heather Cristol

Students

Lester Acosta, Youssef Ahmed, Rocan Ahmed, Anthony Alvarez Romero, Ana Arce Cuahutla, Surya Bhatt, Prashant Bohara, Kevin Cabreba, Santiago Caiza, Brian Cardenas-Osorio, Tatiana Chaso, Jimmy Chavez, Anahi, Chito Marjorie, Alexis Cuji Chango, Karen Curicama, Yadely Erazo, Tatiana Espinoza, Ariel Estevez, Ritzu Eufragio Galdamez, Juan Carlos Garcia, Yadira Guilca Zumba, Suly Gusman, Junqi Huang, Edison Huerta, Pesantez Paulo Illescas, Yleth Juan, Anshu Khatiwada, Kelly Lema, Emelyn Lema, Jacqueline Lema, Wildja Lindor, Stephen Marino, Andy Martinez Juarez, Wilmer Mateo-Baez, Marcelo Miraya, Sara Munoz Penalosa, Jeremy Nunez, Angel Nunez, Apexa Patel, Josue Patino, Evelyn Peralta, Angeles Perez, Christopher Pui, Ratchaphum Rittaprom, Denis Roldan, Daniel Ricardo Sanchez, Christine Santos, Katherin Sela, Isaura Sopa, Kelvin Suero, Shahoreer Reza Talha, Santiago Gas Tec Cuz, Ronald Tenempaguay Lem, Cristian Tixi Herrera, Paulina Tuapanta, Jenru Vera, Francisco Vicente Chali, Kamaay Voltaire Elle, Wilson Yaguachi, Kevin Zapata, Yingkang Zhou

Thank you to our interviewees: Tracy Enger, Council Member Shekar Krishnan, Brian Vant-Hull

The Center for Urban Pedagogy (CUP) is a nonprofit organization that uses the power of design and art to increase meaningful civic engagement, particularly among historically underrepresented communities.



This project is part of **City Studies**, CUP's project-based, in-class and afterschool programs that use design and art as tools to research the city. To learn more, visit

welcometoCUP.org.



IHSHS is a small institution and a part of the International Network for Public Schools.

We are a community of immigrant learners grounded in restorative justice practices. To learn more, visit: <https://www.healthsciencesnyc.org/>.

This project was made possible by the New York State Council on the Arts with the support of the Office of the Governor and the New York State Legislature, and the New York City Department of Cultural Affairs in partnership with the City Council.

