CLOSED LOOP LABS

PLANT CHICAGO

K-12 PROGRAMS

engaging the next generation in circular economy principles

K-12 EDUCATION

our mission

Plant Chicago's mission is to cultivate local circular economies. Our education programs aim to inspire and empower individuals to participate in circular practices and concepts. We offer hands-on workshops, called 'Closed Loop Labs' for K-12 students, that delve deeper into circular economy principles, making circular and sustainable ideas digestible and attainable for all ages and populations.

schedule

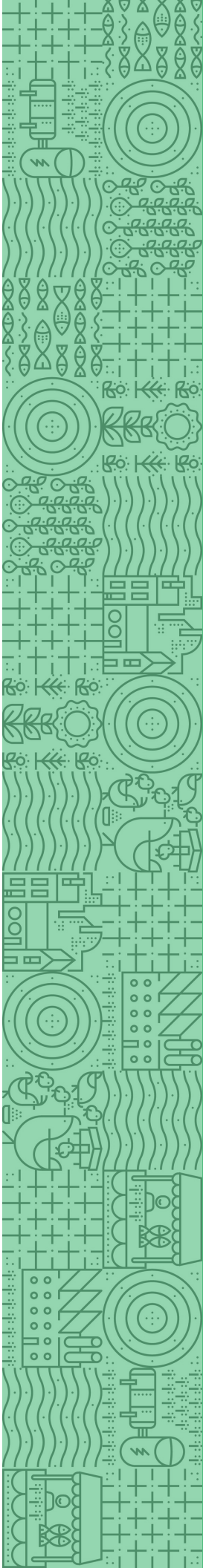
Closed Loop Labs are offered Tuesdays - Saturdays at 10 am and 12:30 pm start times, given availability. Labs typically last ~1.5 hours in length.

cost

Labs are a flat rate of $150, with individual tickets priced at $7/student. We can accommodate a maximum of 30 students per visit, with up to 2 chaperones offered for free (additional chaperones $10/ea).

visit

We can tailor your visit to highlight different aspects of food production, energy conservation, and material reuse. Students can see closed loop systems in action, including an aquaponics farm, chickens, reuse projects, compost gardens, and more. All of our Closed Loop Labs are aligned with Next Generation Science Standards, see p. 7-8 for details.



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AQUAPONICS: DESIGN CHALLENGE

Delve deeper into the science behind aquaponics and explore the nitrogen cycle! Students are challenged to build their own aquaponic system (not for taking home) using predetermined materials.

(Recommended for 6th-12th grade)

photo credit: Bogan High School

photo credit: Horizon Science Academy

FUTURE CIRCULAR ECONOMY PIONEERS

"The [Closed Loop] Lab on many levels was inquiry based, hands on, engaging and challenging... Today was life changing for me and will no doubt be on the top of the list for my students' all-time favorite field trips!"

- Suzanne Giacotto, Guerin College Prep

AQUAPONICS: WATER CHEMISTRY

If your class is studying the nitrogen cycle, this lab is for you! Using our aquaponics system as a field site, students use the scientific method to test water for various levels of ammonia, nitrites, nitrates, and phosphates. Explore what makes “healthy” water for fish, plants, and humans.

(Recommended for 6th-12th grade)

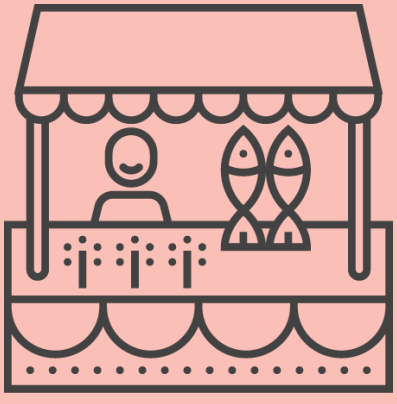
CIRCULAR ECONOMY

Challenge your students to think critically about human consumption and solve real world problems! This team oriented workshop shows the feasibility of designing circular systems for communities both big and small. Students work together to propose ideas for people to minimize 'waste,' increase efficiency, and close resource and energy loops.

(Recommended for 9th grade – adult)

photo by uChicago Laboratory Schools

photo by Northwestern University



LIFE CYCLE OF A SALAD

Students learn about our aquaponic system, harvest greens, make their own salad, eat the salad, and compost their scraps in our worm composting bins. Explore the various loops and cycles of a typical salad by considering what nutrients fish, plants, humans, and worms need to survive, and how they are all connected.

(Recommended for 1st-6th grade)

photo credit: Chavez Elementary

photo credit: Chavez Elementary

SALAD ENTHUSIASTS

"Our instructors were WONDERFUL. My teens took what they learned and made a similar salad at their annual showcase. They also enjoyed learning about aquaponics and the worms. Overall, the workshop was very engaging!"

- After School Matters Instructor

NATIVE POLLINATORS

Students dive into the world of pollinators using microscopes, our indoor honey bee hive, and outdoor observations as learning tools. Explore the importance of pollinators both native and non-native to Illinois. Learn why they are instrumental for the health of our communities, and how we can help sustain native pollinator populations.

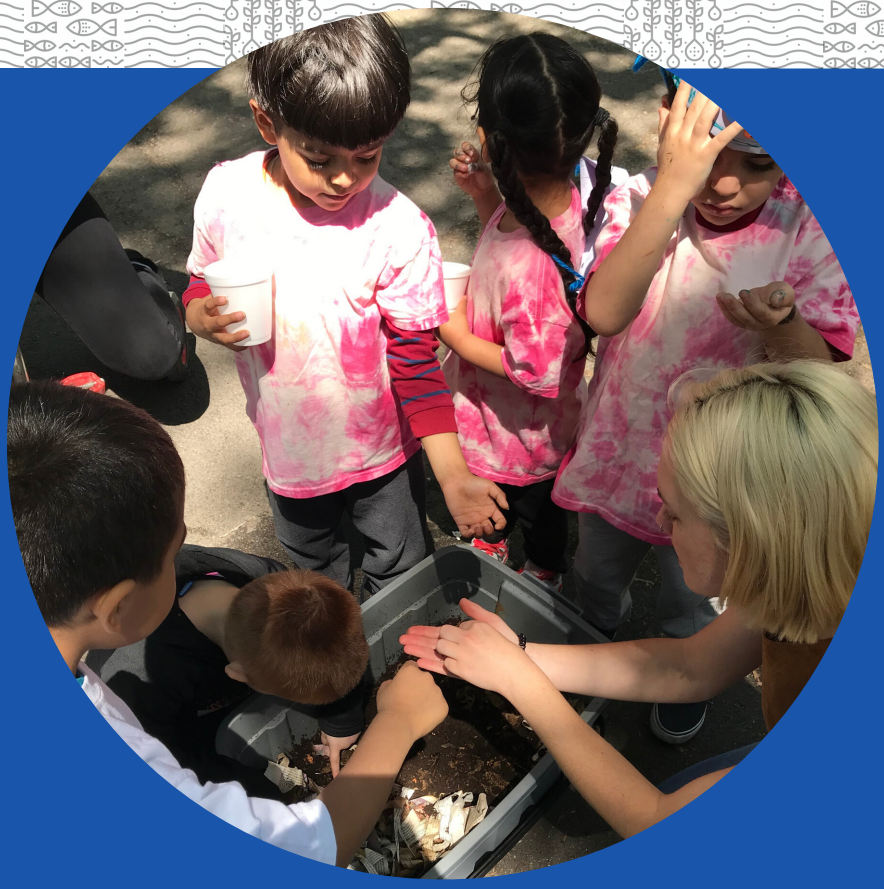
(Recommended for 1st-6th grade)

WORM COMPOSTING

Students build a worm bin for their classroom. Learn more about producers, decomposers, and consumers with this interactive worm workshop. Participants discuss the importance of composting and reducing waste.

(Recommended for 1st-6th grade)

photo credit: Agustin Lara Academy



"One reason why I enjoy the classes and activities is the way you [Plant Chicago] engage students by asking them questions. It's a great way to find out what their knowledge base is, and to build on what they already know. They want to be more hands on, and you [Kassie] and Stef did a great job of involving them!"

- Dick Clancy,
Wheaton Academy

NEXT GENERATION SCIENCE STANDARDS

K-5 grade

K-5 grade

Closed Loop Labs	THE FOUR DOMAINS	LS									ESS	EST	PS
	Next Generation Science Standards	3-LS3-1	3-LS3-2	3-LS4-2	3-LS4-3	4-LS1-2	5-LS1-1	5-LS2-1	K-LS1-1	1-LS1-1	K-ESS3-3	3-5-ETS1-2	N/A
	Aquaponics: System Design				x		x	x					
	Aquaponics: Water Chemistry												
	Circular Economy												
	Life Cycle of a Salad						x	x	x		x		
	Native Pollinators		x	x	x						x		
	Vermicomposting					x		x	x	x			

6-8 grade

6-8 grade

Closed Loop Labs	THE FOUR DOMAINS	LS										ESS		ETS			PS
	Next Generation Science Standards	MS-LS1-4	MS-LS1-5	MS-LS1-6	MS-LS1-7	MS-LS2-1	MS-LS2-2	MS-LS2-3	MS-LS2-4	MS-LS2-5	MS-LS2-2	MS-LS4-4	MS-ESS2-1	MS-ESS3-4	MS-ETS1-1	MS-ETS1-2	MS-ETS1-3	MS-PS1-3
	Aquaponics: System Design	x	x	x	x		x	x							x	x	x	
	Aquaponics: Water Chemistry		x			x												
	Circular Economy							x		x	x			x	x			x
	Life Cycle of a Salad		x	x	x			x										
	Native Pollinators		x						x	x		x						
	Vermicomposting		x		x			x					x					

NEXT GENERATION SCIENCE STANDARDS

9-12 grade

9-12 grade

	THE FOUR DOMAINS	LS											ESS		ETS		PS		
	Next Generation Science Standards	HS-LS1-2	HS-LS1-3	HS-LS1-5	HS-LS2-1	HS-LS2-2	HS-LS2-3	HS-LS2-4	HS-LS2-7	HS-LS2-8	HS-LS4-5	HS-LS4-3	HS-LS4-4	HS-ESS2-5	HS-ESS3-4	HS-ETS1-2	HS-ETS1-3	HS-PS1-4	HS-PS1-6	HS-PS3-3
Closed Loop Labs	Aquaponics: System Design														x	x		x	x	x
	Aquaponics: Water Chemistry		x		x	x		x						x					x	
	Circular Economy	x							x						x		x			
	Life Cycle of a Salad			x			x													
	Native Pollinators									x	x	x	x							
	Vermicomposting																			

key

Key

THE FOUR DOMAINS	
abbreviation	*full domain name*
LS	Life Sciences
ESS	Earth Space and Sciences
ETS	Engineering, Technology, and Application of Science Standards
PS	Physical Sciences