

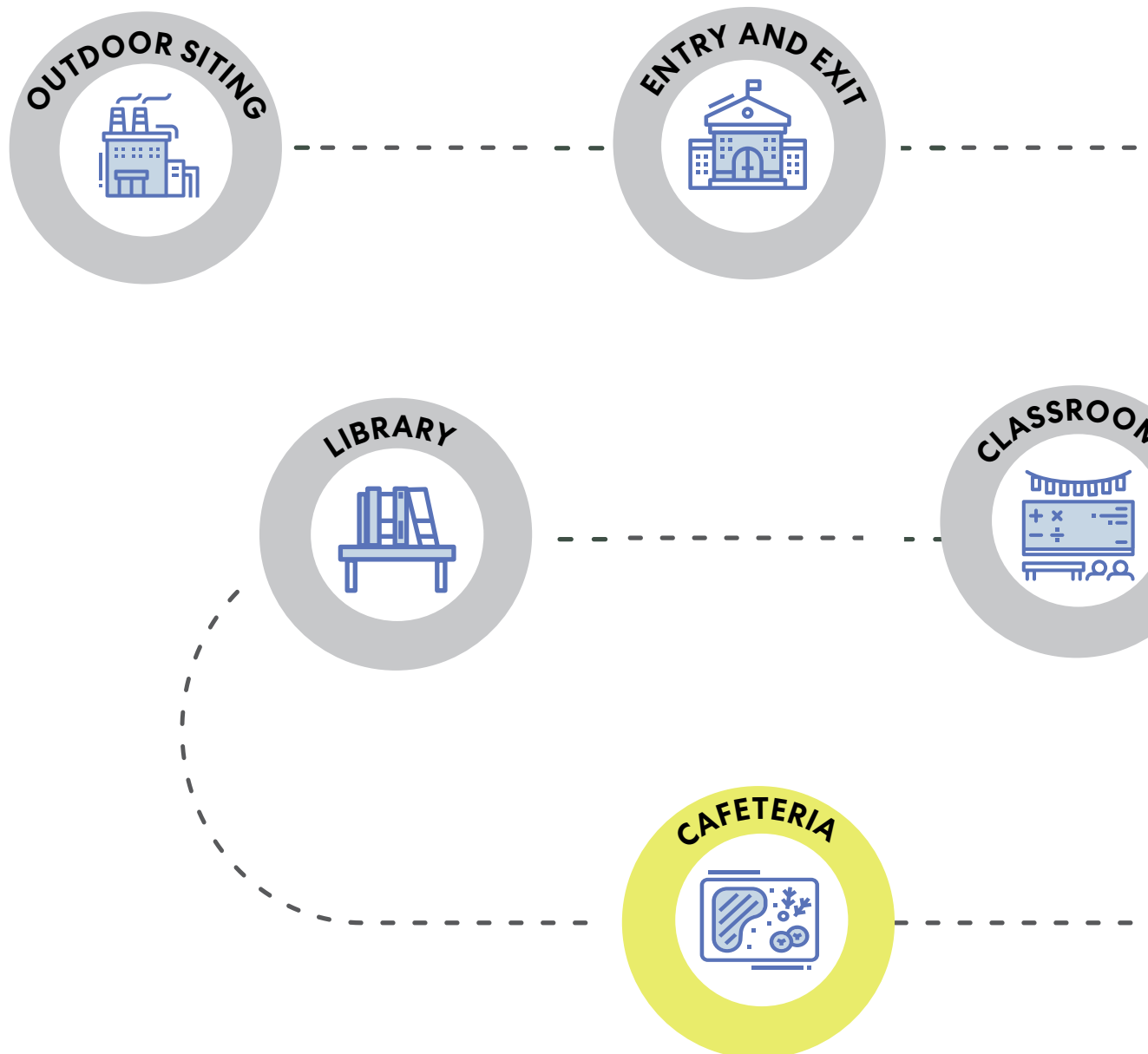
Cafeteria

Healthy Schools by Design

2022

Perkins&Will





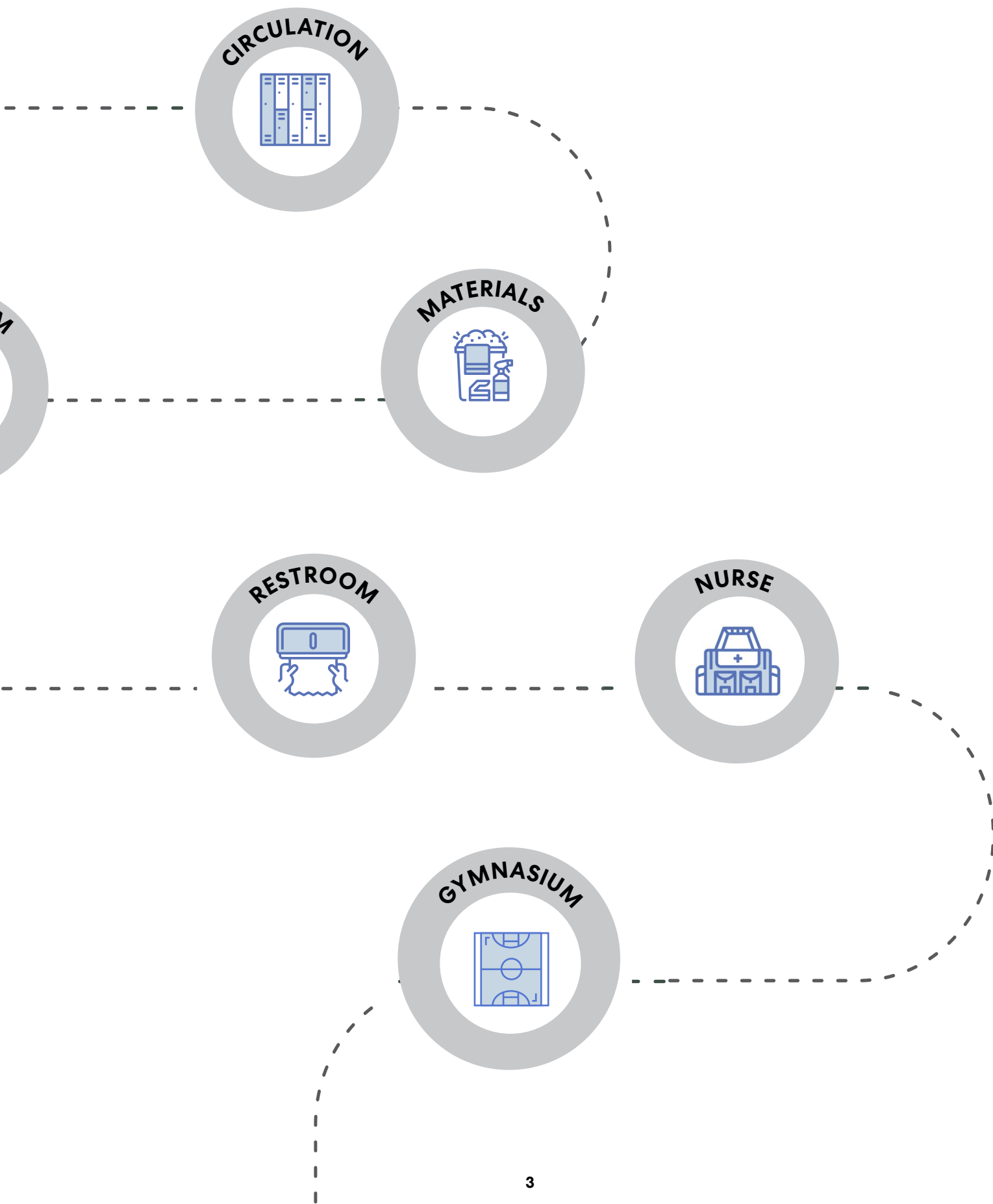
A DAY IN THE LIFE

Meet Riley

In the pages that follow, we invite you to imagine how these design interventions will impact Riley, an imaginary—but very real—student. We owe it to students like Riley to make school buildings as inviting, safe, and healthy as they can be.



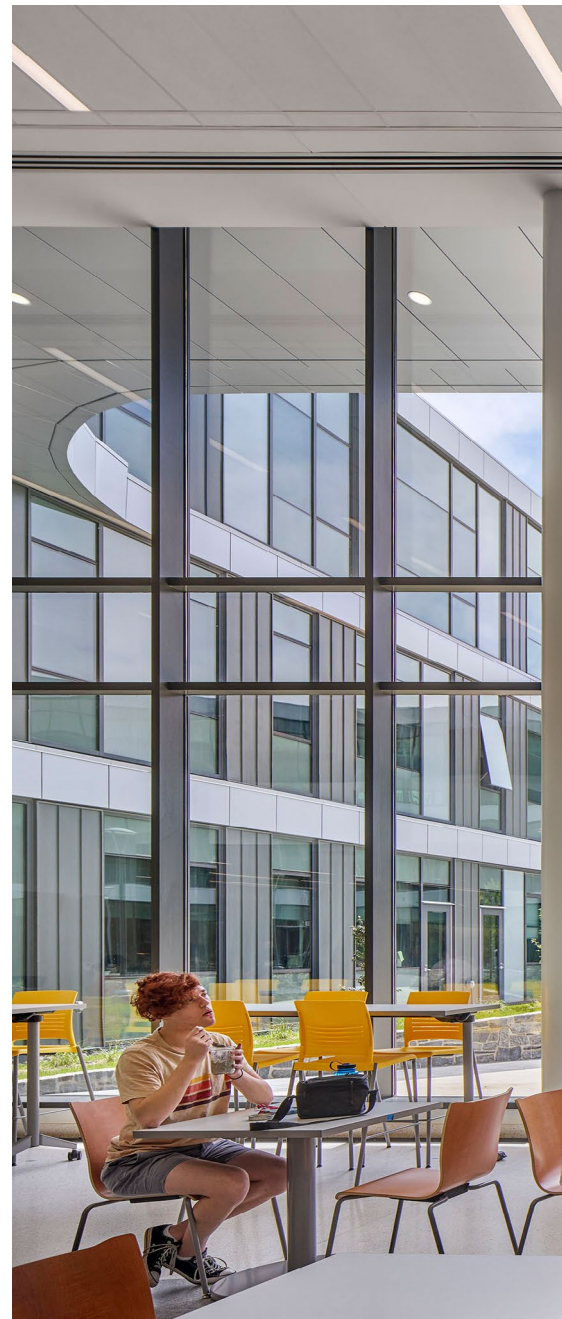
Follow Riley's journey through school at
healthyk12.perkinswill.com/



Why you should read this!

- Children and teens who eat healthy school lunches (as opposed to unhealthy lunches) are 340% more likely to remember information presented in class throughout the day.
- By providing school lunches, school enrollment often improves by 20%.
- In FY 2020, NSLP participation averaged 22.6 million children each school day and total expenditures on the program amounted to \$10.4 billion.

Special thanks to Dr. Aviva Musicus, Harvard T.H. Chan School of Public Health, for providing additional guidance and review.

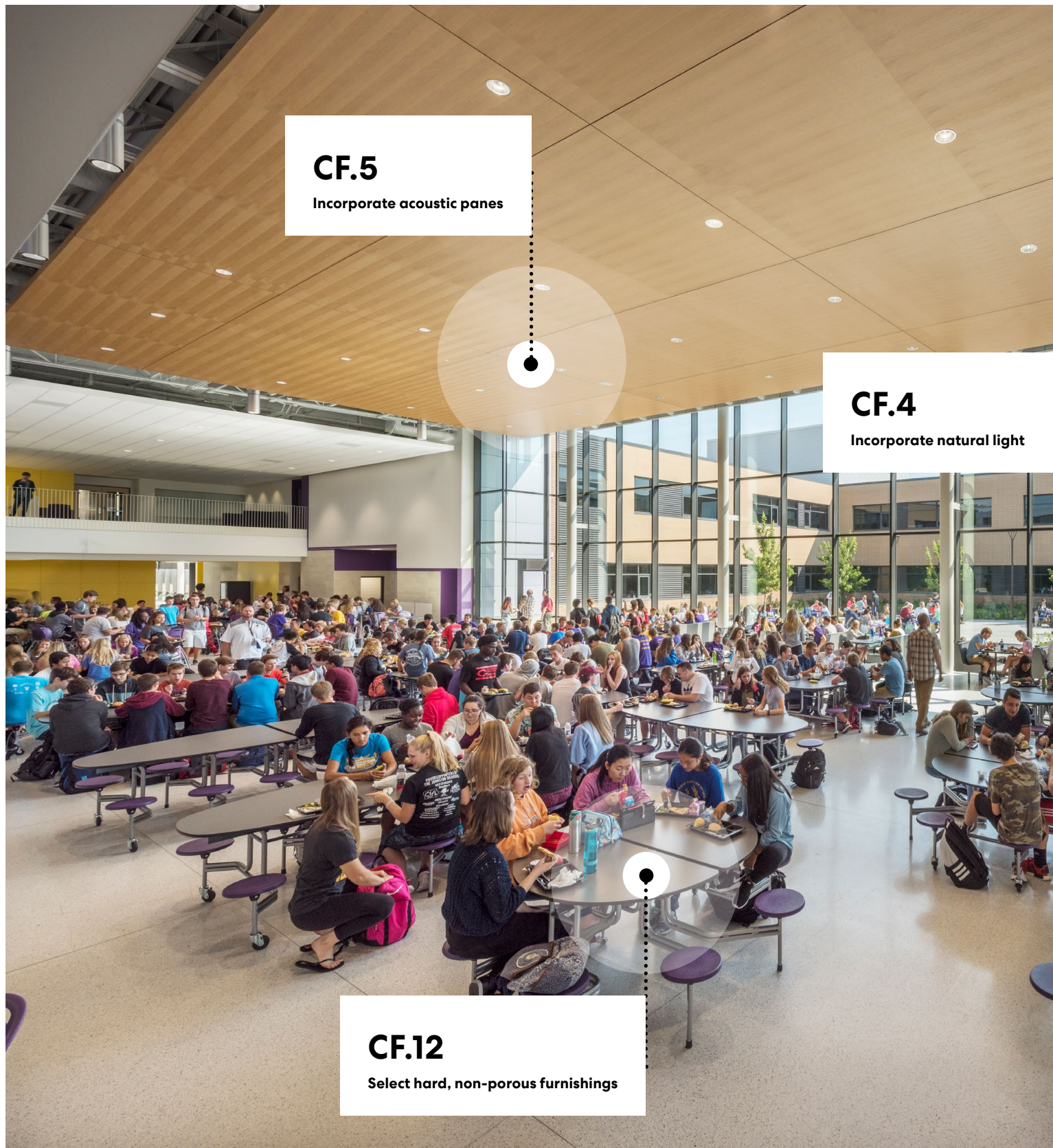


Our Goal



This series is focused on translating research into practical design solutions that promote child and staff health in our K-12 schools. These documents will continue to be updated to reflect novel findings and community input. This primer is not a comprehensive list, and some strategies may not be achievable in existing buildings. Our goal is to identify opportunities where design and operations decisions can improve human experience.

The guidance provided is based on the available information as of the date of publication and does not replace federal, state, or local public health recommendations. It aggregates best practices and innovative solutions at the intersection of buildings and school health. We encourage schools to reach out and seek expert advice on their unique circumstances.



CF.5

Incorporate acoustic panes

CF.4

Incorporate natural light

CF.12

Select hard, non-porous furnishings

Project: Johnston High School

Johnston, Iowa



Contents

Introduction	6
Socialization	8
Restoration	10
Nutrition	12
Hydration	14
Strategies	16
Special Spaces	18
References	20



— Cafeteria

COVID-19 highlighted that schools do much more than educate children, they also offer numerous physical and social services including a reliable source of food. In 2021, UNICEF and the World Food Programme estimated 370 million children are dependent on school meals for daily access to nutritious food. During the 2020-2021 school year, Boston Public Schools provided over 5 million meals to students and families.

However, these social hubs support children's health beyond the provision of healthy food. For many students the space offers a space to connect with friends or recharge their batteries for the rest of the day. Health-focused cafeteria design can support the following outcomes: Socialization, Restoration, Nutrition, Hydration

Although there is some great research in this area, there is still work to be done and we hope this document will contribute to the cause.

Key Elements for Promoting Health: Socialization

"A well-thought-out lunch period can foster the development of context-specific skills, such as how to engage in meaningful conversations, demonstrate appropriate mealtime manners, choose healthy foods, and be a good friend."

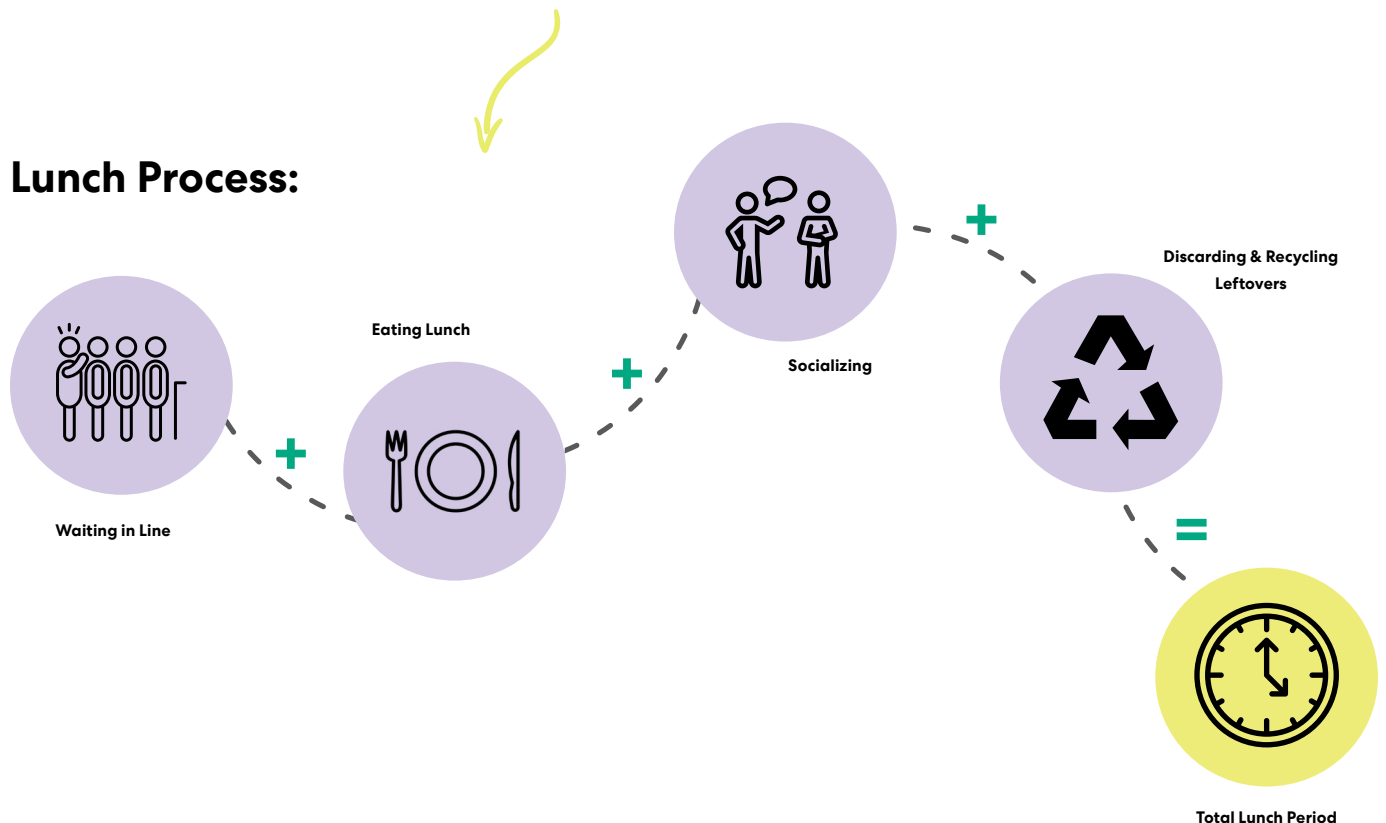
-Bazyk et al., 2018

SOCIALIZATION

Mealtime is an important period in the day as it provides opportunities to share culture, knowledge, and ideas as well as create dynamic friendships. In 2006, Elinor Ochs and Merav Shohet, highlighted the unique ways mealtime support children's growth, specifically through listening and observing others and gaining sociocultural language competency. It is also a necessary break from instruction as it is one of the few moments during the day when social and emotional skills are actively used.

A School Nutrition Association (SNA) study from 2018 determined the typical lunch period lasts 25 minutes for elementary schools and 30 minutes for middle and high schools. This means, students spend roughly 7.35% (90 hours) total in lunch over the course of an entire year. The CDC recommends schools structure the lunch period time to ensure students have at least 20 minutes of seat time to enjoy their meal and socialize. According to CDC, seat time is distinct from the total lunch period, as it does not include waiting in line to get a meal. The American Academy of Family Physicians notes the importance of socializing to allow students sufficient time to relate to others and feel refreshed for the afternoon.

Lunch Process:

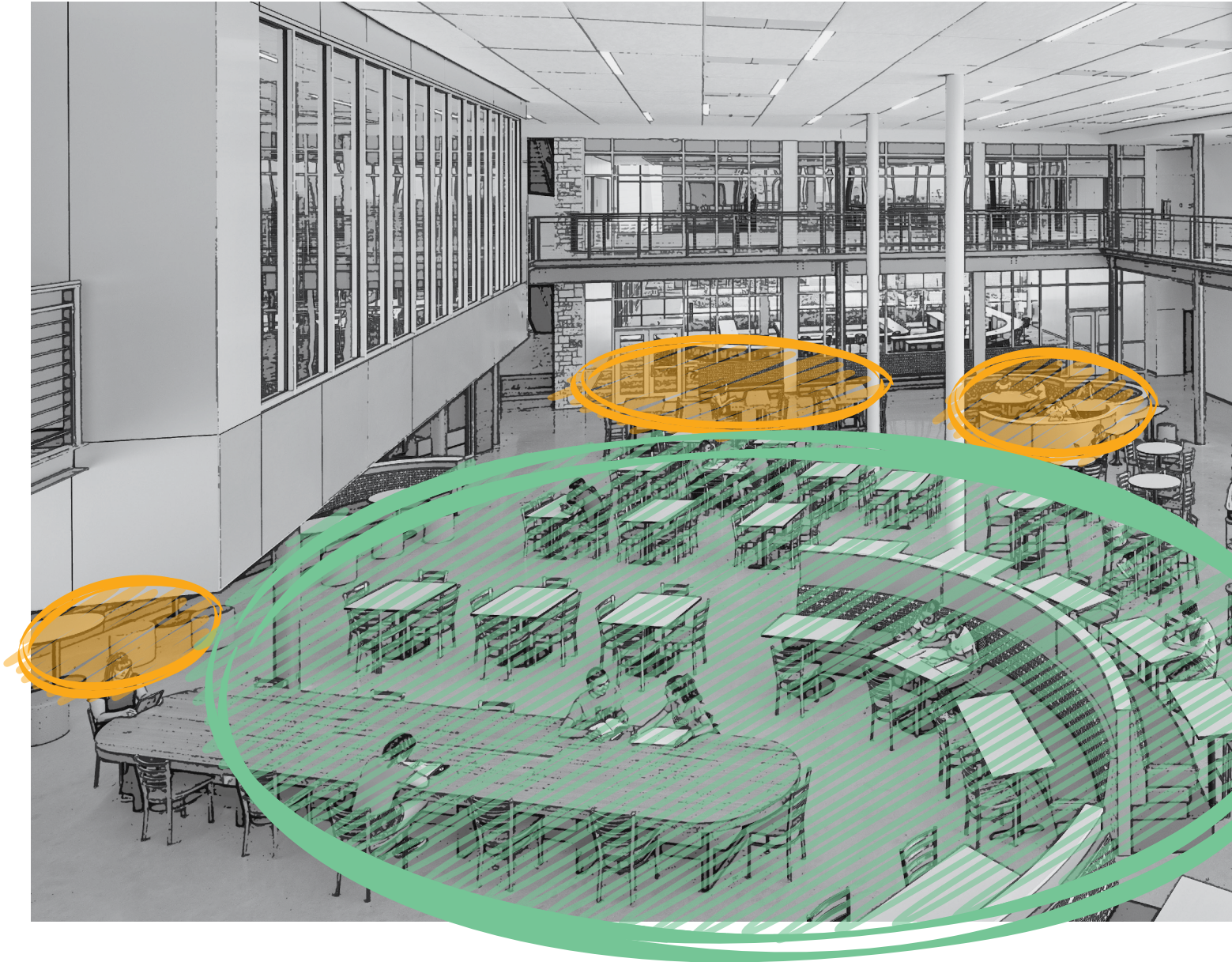


Work that Inspires Us: IDEO and San Francisco United School District

A CAFETERIA DESIGNED FOR ME

Socialization comes in many forms. IDEO and the San Francisco United School District (SFUSD) reimagined the school lunch experience by talking with students themselves. Their approach, “A Cafeteria Designed for Me”, offers design suggestions that create active zones for elementary, middle, and high schools. IDEO’s CEO, Sandy Speicher, noted, “everyone focuses on the food. We knew that in order to get kids to eat, the atmosphere had to be enjoyable”. In their study, IDEO and SFUSD suggested including activities to engage students. Design elements such as branding (CF.8), graphics, natural light (CF.4), and views can help create an enjoyable atmosphere. Additionally, as a branded environment, the cafeteria can reinforce the educational goals of the school and greater community.

Key Elements for Promoting Health: Restoration



JUNGLE ZONE

- Active and energized eaters
- Optimized for socialization

OCEAN ZONE

- Calm and gentle
- Optimized for smaller groups or individuals

MOUNTAIN ZONE

- Optimized for individuals with food allergies to reduce psychological stress

DESIGN HYPOTHESIS

We propose breaking cafeteria seating into a variety of zones that offer opportunities for choice and support a variety of student needs. These zones would allow engagement in the degree of sensory stimulation.

RESTORATION

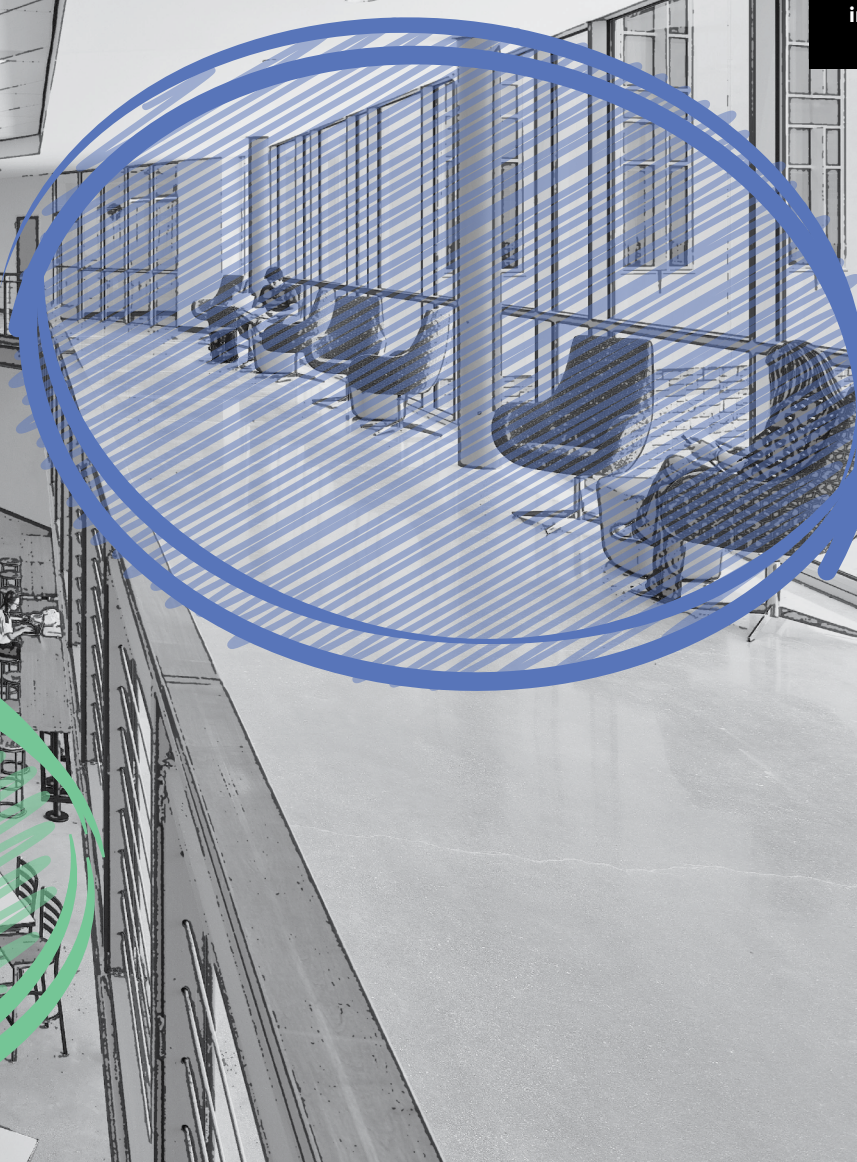
Lunch is also a great time to offer students much needed downtime. Cafeterias are a hotspot of sensory stimuli including auditory, visual, smells, and taste, which may overwhelm students. When we focus solely on socialization, we miss an opportunity to support students who would benefit from quiet time to recharge their “social batteries”.

In a **review of 21 scientific articles**, researchers identified built environment characteristics that may support students who have increased or decreased sensitivity to environmental sensory cues including children with autism spectrum disorder (ASD). The review highlighted several improvements, which may impact cafeteria design:

- Reducing stimuli to lower student arousal.
- Increasing time or providing transition spaces that support students moving from classrooms, food services, and eating.
- Limiting noise or creating quiet spaces to support students who are hypersensitive to noise levels.
- Increasing wayfinding for clear, consistent movement as students access food and find seating.

WHAT WE'RE READING

Quiet, The Power of Introverts in a World That Can't Stop Talking by Susan Cain



Key Elements for Promoting Health: Nutrition

NUTRITION

Students obtain **about half of their daily nutrients** from food eaten at school, making school meals extremely important. This includes **federally funded programs** that support breakfast, lunch, after school snack, and summer food service. Unfortunately, many students still **face food insecurity** at home. In these instances, they rely on school meal programs to not only combat hunger, but to also receive nutritionally balanced meals. Prior to the pandemic, an **average of 29.6 million students** were served school lunches each day at nearly 100,000 schools across the country as part of the National School Lunch Program (NSLP). **Studies demonstrate** that proper nutrition improves a child's behavior, school performance, and **overall cognitive development**.

Research has demonstrated the beneficial impacts of the program on many aspects of child health. Children who participate in the program **have been shown** to have better overall diet quality than students who do not participate, with increased consumption of fruit, vegetables, and whole grains. This can reduce their risk of future chronic disease. Aside from providing better nutrition for children, receiving free or reduced-price school lunches has been shown to lower food insecurity by nearly 4 percent. This is **crucial for children's wellbeing**, as food insecurity leads to hunger; children and adolescents experiencing hunger have been

shown to have higher rates of behavioral, emotional, mental health, and academic issues.

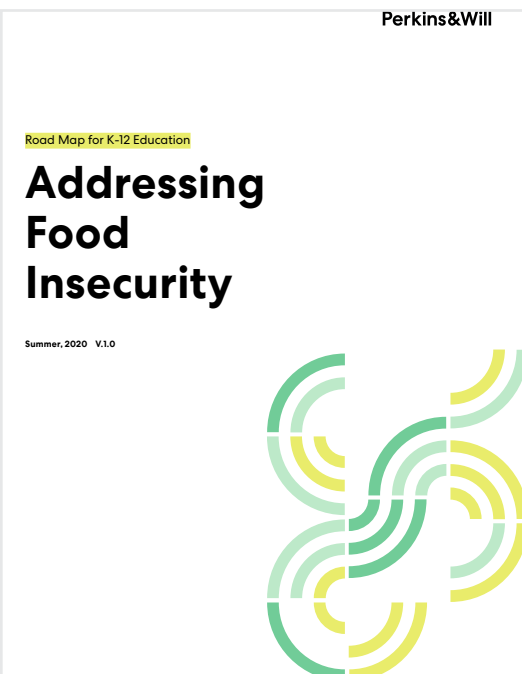
In addition, school meal programs also **play an important role** in supporting obesity prevention. Students who eat school meals are less likely to have nutrient inadequacies and are more likely to consume fruit, vegetables, and milk. In fact, **new research** shows that children in the United States are getting their healthiest meals at school, showing the success of the National School Lunch Program. This is timely given **nearly 1 in 3 children** are at risk for preventable diseases due to being overweight or obese.

Lastly, another goal of school lunch programs is to educate students on what healthy nutritional standards are and positively impact food selection and consumption. Skills children can use throughout their lives.

Check it out!

- A **Harvard study** reviewed fruit and vegetable consumption following USDA new standards to improve nutritional quality of meals offered. Upon implementation of the new nutrition guidelines, the study found, fruit selection increased by 23%, while vegetable consumption increased by 16.2%
- Debuting for the 2022-2023 school year, the USDA implemented **Child Nutrition Programs: Transitional Standards for Milk, Whole Grains, and Sodium**. This new rule mandates at least 80% of grains served must be whole grain-rich.
- As part of the updated USDA nutrition guidance, schools may offer low-fat dairy options, such as 1% milk. This provides growing children adequate calcium while limiting fat and calorie intake.





Food Insecurity

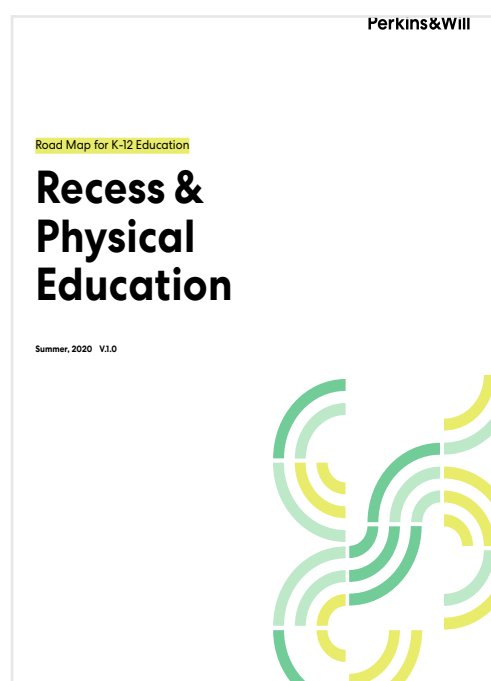
In 2020, Dr. Aviva Musicus helped us understand how we can increase food security during and outside the academic school year.

[Check out the link here.](#)

Physical Education

In 2020, Marlon Mussington, Lisa Roberts, Dr. Sharon Taverno Ross, and Lauren Wheeler helped us understand through role of physical activity for children's health and wellbeing.

[Check out the link here.](#)



Federal Programs: National School Lunch Program (NSLP) and School Breakfast Program (SBP)

These are federally funded programs that provide low- or no-cost meals to children in public and nonprofit private schools, as well as childcare facilities. Built on over a hundred years of research and evaluation, the NSLP provides daily lunches nutritionally tailored to students' developmental requirements, with stringent nutrition standards for different grades. Lunches include serving requirements for fruits, vegetables, and whole grains, with limits on total calories and sodium. For many children, this may be the only stable meal they will receive daily. As formalized education systems developed around the world, so did school meal programs. Early proponents of these programs understood a lack of food meant that students would be unable to take full advantage of the education provided to them. Advocates saw the national expenditure for education as a complete waste if children were not provided with adequate nourishment and believed it was the school's responsibility to prepare and serve this meal.

Key Elements for Promoting Health: Hydration

Adequate hydration can help children maintain a healthy weight, reduce dental cavities, and improve cognitive function.



Access to safe, clean drinking water is critical for health. There is no safe level of lead.

HYDRATION

Nearly half of school-aged children are underhydrated, while 1 in 5 adolescents do not drink any water during the day. Schools that are participating in the NSLP and SBP are required to provide free water during mealtime.

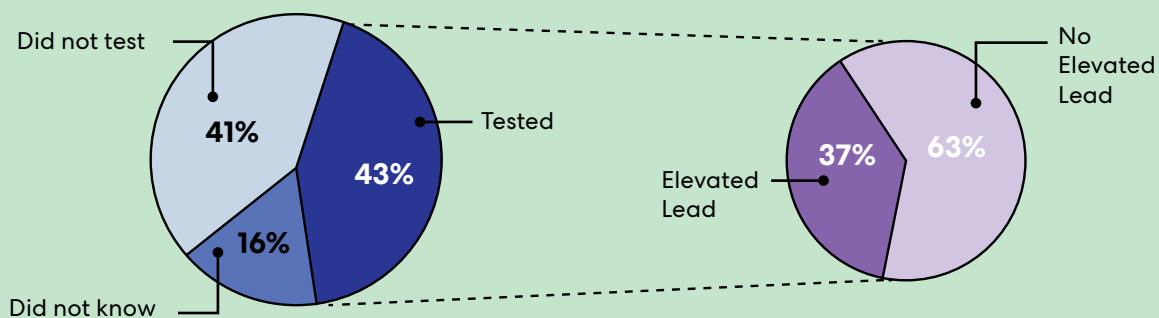
Old infrastructure with lead-contaminated pipes, a neurotoxicant commonly found in schools built prior to the 1991 Lead and Copper Rule, can lead to additional plastic waste when single use water bottles are provided instead of water filling stations. In a cross-sectional study of 651 low-income 3rd -5th graders, researchers found that on average, students drank more than two times (2.4x) from a school fountain or water bottle filling station compared to bottled water, but this decreased when water safety decreased. Schools can help keep students hydrated by promoting access to water with multiple stations throughout the building, especially in locations where food is served.

Water quality suffered during the pandemic when extended closures led to long periods of stagnation, which can support bacterial growth and heavy metal leaching (e.g., copper, lead) from old pipes.

During the pandemic there were significant increases in childhood obesity. The availability, placement, and access to different hydration sources may change consumption behavior.

Source: GAO Survey of Public School Districts | GAO-18-382

A 2018 U.S. Government Accountability Office report showed that only 43% of school districts surveyed had tested for lead in school drinking water and only 8 states required schools to test the water at the time.



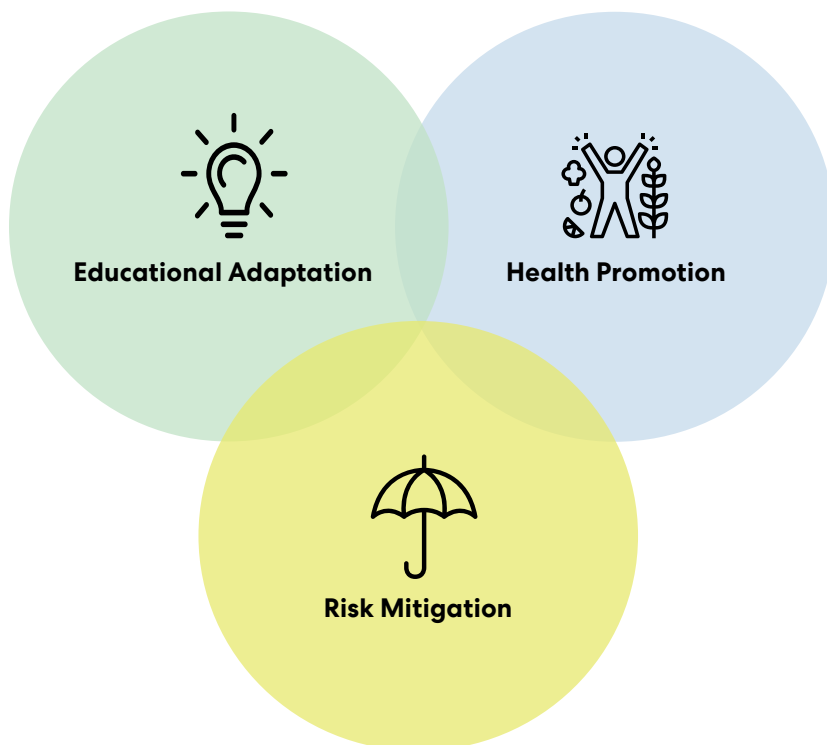
Strategies

STRATEGY		CATEGORY	NEW/EXISTING	IN YOUR SCHOOL?
CF.1	Locate kitchens along vehicular access road where food distribution can be easily accessed when building is closed during an emergency.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.3	Offer direct access to outdoor dining opportunities so students can eat outdoors.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.4	Incorporate natural light when possible or artificial lighting that mimics natural light.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.3	Prioritize equipment in the kitchen that helps provide fresh produce over processed food (e.g. better refrigeration).	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.4	To reduce lead exposure in drinking water and increase water consumption, install and maintain filters or new fixtures (e.g., water bottle refilling stations) and provide bottled water until changes can be made. If you do not know the status of school water, get it tested.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.5	Include acoustic panes and other materials that promote appropriate acoustic levels that support communication and collaboration.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.6	Disperse drinking fountains and water bottle filling stations throughout building for convenient access to fresh drinking water.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.7	At servery, include an express check-out lane to increase efficiency for students.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.8	Incorporate signage and graphics that promote body positivity, healthy food choices, and behaviors.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.9	Mitigate additional sensory issues (auditory, visual, or olfactory) that may overwhelm students (e.g., higher ventilation to manage food smells, or smaller eating nooks with less distractions).	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable

Our aim is to support holistically healthy buildings, but we understand that each learning community is unique and has their own health priorities. Use these strategies as a starting point!

Cafeteria

STRATEGY	CATEGORY	NEW/EXISTING	IN YOUR SCHOOL?
CF.10 Offer food options at age-appropriate height to promote visibility and increase ease of choice, (e.g., glass and sneeze guards).	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.11 Select a variety of cafeteria seating and table options to accommodate social distancing, different social needs, body types, and opportunities for collaboration, individual study and classes during non-food service hours.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.12 Select hard, non-porous, and durable furnishings that respond well to frequent food-grade cleaning and reduce the spread of bacteria.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.13 Provide hand sanitizing or handwashing options at the entry to and exit from the cafeteria to prevent the spread of microbes between high touch items.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.14 Supporting student well-being by offering multiple options and choice in terms of the variety of food and the time at which students eat.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable
CF.15 Establish student-run green teams in charge of recycling and composting to create a sense of community and pride in the cafeteria.	Risk Mitigation Health Promotion Educational Adaptation	New Construction Existing Building	☐ Yes ☐ No ☐ Not Applicable



RISK MITIGATION

Strategies for reducing adverse environmental exposures that influence school occupant health and performance.

EDUCATIONAL ADAPTATION

Strategies that support behavioral, logistical, and technology flexibility during shifting teaching needs.

HEALTH PROMOTION

Strategies that promote physical and mental health, social cohesion, and a sense of belonging and safety.

Key Elements for Promoting Health: Special Spaces



A few more ways that cafeterias can support health promotion.

SPECIAL SPACES

1. RECYCLING AND COMPOSTING STATIONS

Many states have resources and guidance to support composting and recycling in K-12 schools, including, Massachusetts, California, South Carolina, Georgia, and Colorado. Common features that may require spatial considerations include recycling, composting or worm bins, and outdoor space. Composting at schools can support project-based learning by introducing concepts such as decomposition and energy cycles, while also introducing sustainable concepts since research shows that as much as 50 percent of waste in landfills could be composted.

2. MULTI-PURPOSE SPACES

Despite being one of the largest spaces within a school, many cafeterias lay dormant for much of the day.

To date, lunchrooms have typically remained large, open, flat-floored rooms. This design originates from the early industrial factory feeding programs where the goal was to separate eating areas from work areas to save time and create efficiency. However, today, schools are re-examining the function of these unused spaces. Reimagining the cafeteria as a viable space for teaching and learning and creating a social center and maximizes the space's large square footage.

Ideas like this allow schools to maximize space and budget. Flexibility, acoustics, furniture selection, and lighting, should all be considered. Cafeterias can also double as gathering spaces for after-school events and by opening the space up to the community schools can strengthen these relationships.

3. OUTDOOR DINING

With much of our lives spent indoors, eating outside is a welcomed break and opportunity to recharge. Research has shown spending time outdoors includes both physical and mental health benefits. Access to green space promotes attention restoration, reduces stress, improves memory, and is even associated with higher test scores. Spending time outdoors also increases levels of Vitamin D. Vitamin D is essential for children's growth and development. It supports bone growth and reinforces the immune system. According to CHOP, spending 15 to 30 minutes outside in the middle of the day stimulates the production of Vitamin D. In fact, research shows greater time spent outside is even associated with healthier dietary patterns in children. Offering an outdoor dining option allows students to experience both physical and mental health benefits and design components such as outdoor teaching gardens can further promote project-based learning.

4. EFFICIENT SERVERY

In order to maximize seat time for students, servery should be as efficient as possible. Online ordering and food service management software can simplify the flow of food selection and payment, especially if the servery is closed or there is an increased number of students in line. Additionally, Grab and Go Carts can offer variety during short lunch periods.

Express lines offering healthy food options not only cuts down congestion, but also increases likelihood of students eating healthy. In a study of high schoolers, a newly implemented express line serving exclusively healthy foods saw an increase in student consumption.

References

1. Anderson M, Gallagher J, Ramirez Ritchie E. School Lunch Quality and Academic Performance. (2017). National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w23218/w23218.pdf
2. Bazyk S, Demirjian L, Horvath F, Doxsey L. The Comfortable Cafeteria Program for Promoting Student Participation and Enjoyment: An Outcome Study, 2018. The American Journal of Occupational Therapy. [doi: 10.5014/ajot.2018.025379](https://doi.org/10.5014/ajot.2018.025379)
3. Borkowski, Artur; Ortiz Correa, Javier Santiago; Bundy, Donald A. P.; Burbano, Carmen; Hayashi, Chika; Lloyd-Evans, Edward; Neitzel, Jutta; Reuge, Nicolas (2021). **COVID-19: Missing More Than a Classroom. The impact of school closures on children's nutrition, Innocenti Working Papers no. 2021-01,**
4. Butler Kiera. Happy Meals: Can San Francisco Reinvent the School Cafeteria? (2015). The Atlantic. <https://www.theatlantic.com/magazine/archive/2015/03/happy-meals/384981/>
5. CalRecycle. Model Programs/ Case Studies. (2022). <https://calrecycle.ca.gov/recycle/schools/models/>
6. CBC (2022). School Meals. <https://www.cdc.gov/healthyschools/npao/schoolmeals.htm>
7. CDC (2019). Making Time for School Lunch. https://www.cdc.gov/healthyschools/nutrition/school_lunch.htm
8. CDC. Community Water Fluoridation. (2020). <https://www.cdc.gov/fluoridation/index.html>
9. CDC. Increase Access to Drinking Water in Schools. https://www.cdc.gov/healthyschools/features/water_access.htm
10. CDC. Increasing Access to Drinking Water in Schools. (2014). https://www.cdc.gov/healthyschools/npao/pdf/Appendix_3_508.pdf
11. CDC. Water Access in Schools. (2020). <https://www.cdc.gov/healthyschools/npao/wateraccess.htm>
12. Chaput, J. P., Tremblay, M. S., Katzmarzyk, P. T., Fogelholm, M., Mikkilä, V., Hu, G., Lambert, E. V., Maher, C., Maia, J., Olds, T., Onywera, V., Sarmiento, O. L., Standage, M., Tudor-Locke, C., LeBlanc, A. G., & ISCOLE Research Group (2018). Outdoor time and dietary patterns in children around the world. Journal of public health (Oxford, England), 40(4), e493–e501. <https://doi.org/10.1093/pubmed/fdy071>
13. Commonwealth of Massachusetts. Recycling & Composting for Kids, Teachers & Schools. (2022). <https://www.mass.gov/info-details/recycling-composting-for-kids-teachers-schools#the-massdep-school-green-team->
14. Conklin M, Lambert L, Anderson J. How Long Does It Take Students to Eat Lunch? (2002). School Nutrition Association. The Journal of Child Nutrition and Management. https://schoolnutrition.org/uploadedFiles/5_News_and_Publications/4_The_Journal_of_Child_Nutrition_and_Management/Spring_2002/3-conklin.pdf
15. Diallo, Georgina. Nutrition Crisis Looms as More than 39 billion in-school meals missed since start of pandemic. (2021). UNICEF. <https://www.unicef.org/press-releases/nutrition-crisis-looms-more-39-billion-school-meals-missed-start-pandemic-unicef-and>
16. Economic Research Service (2020). National School Lunch Program. U.S. Department of Agriculture. <https://www.ers.usda.gov/topics/food-nutrition-assistance/child-nutrition-programs/national-school-lunch-program>
17. Economic Research Service- U.S. Department of Agriculture. Food Security in the U.S. Key Statistics & Graphics. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/key-statistics-graphics/>
18. Ezennia, J., Schmidt, L. A., Ritchie, L., Blacker, L., McCulloch, C. E., & Patel, A. I. (2022). Water Security Experiences and Water Intake among Elementary Students at Low Income Schools: A Cross-Sectional Study. Academic pediatrics, S1876-2859(22)00238-8. Advance online publication. <https://doi.org/10.1016/j.acap.2022.04.008>

Cafeteria

19. Food and Nutrition Service- U.S. Department of Agriculture. National School Lunch Program. <https://www.fns.usda.gov/nslp>
20. Food and Nutrition Service- U.S. Department of Agriculture. National School Lunch Program Meal Pattern Chart. <https://www.fns.usda.gov/nslp/national-school-lunch-program-meal-pattern-chart>
21. Food Research and Action Center. Benefits of School Lunch. (2022). <https://frac.org/programs/national-school-lunch-program/benefits-school-lunch>
22. Georgia Department of Community Affairs. Catch the Cycle- A Guide to Recycling in Georgia Schools. (2022). https://www.dca.ga.gov/sites/default/files/schoolrecyclingguide_0.pdf
23. Gordon, Douglas. Multipurpose Spaces. (2010). National Clearinghouse for Educational Facilities. <https://files.eric.ed.gov/fulltext/ED512687.pdf>
24. Kinderknecht, K., Harris, C., & Jones-Smith, J. (2020). Association of the Healthy, Hunger-Free Kids Act With Dietary Quality Among Children in the US National School Lunch Program. JAMA, 324(4), 359–368. <https://doi.org/10.1001/jama.2020.9517>
25. Lange SJ, Kompaniyets L, Freedman DS, et al. Longitudinal Trends in Body Mass Index Before and During the COVID-19 Pandemic Among Persons Aged 2–19 Years — United States, 2018–2020. MMWR Morb Mortal Wkly Rep 2021;70:1278–1283. DOI: <http://dx.doi.org/10.15585/mmwr.mm7037a3>
26. Levine, Michael. Vitamin D Supplements: What Parents Should Know. (2021). Children's Hospital of Philadelphia. <https://www.chop.edu/news/health-tip/vitamin-d-supplements-what-parents-should-know>
27. Liu J, Micha R, Li Y, Mozaffarian D. Trends in Food Sources and Diet Quality Among US Children and Adults, 2003–2018. JAMA Netw Open. 2021;4(4):e215262. [doi:10.1001/jamanetworkopen.2021.5262](https://doi.org/10.1001/jamanetworkopen.2021.5262)
28. McCormick R. (2017). Does Access to Green Space Impact the Mental Well-being of Children: A Systematic Review. Journal of pediatric nursing, 37, 3–7. <https://doi.org/10.1016/j.pedn.2017.08.027>
29. National School Lunch Program (2022). Participation and Lunches Served. <https://fns-prod.azureedge.us/sites/default/files/resource-files/slsummar-4.pdf>
30. Nyaradi, A., Li, J., Hickling, S., Foster, J., & Oddy, W. H. (2013). The role of nutrition in children's neurocognitive development, from pregnancy through childhood. Frontiers in human neuroscience, 7, 97. <https://doi.org/10.3389/fnhum.2013.00097>
31. Ochs, E & Shohet, M. (2006). The Cultural Structuring of Mealtime Socialization. NEWDIRECTIONS FOR CHILD AND ADOLESCENT DEVELOPMENT, no. 111, Spring 2006. Wiley Periodicals, Inc. DOI: [10.1002/cad.153](https://doi.org/10.1002/cad.153)
32. Patel, A. I., & Hampton, K. E. (2011). Encouraging consumption of water in school and child care settings: access, challenges, and strategies for improvement. American journal of public health, 101(8), 1370–1379. <https://doi.org/10.2105/AJPH.2011.300142>
33. Platt, Brenda. Compost Impacts More Than You Think. (2018). Institute for Local Self-Reliance. <https://ilsr.org/compost-impacts-infographic/>
34. Rauzon, S., Randel-Schreiber, H., Kuo, E., Schwartz, P., Reed, A. L., & Thompson, H. R. (2020). The association between sugar-sweetened beverage availability in school vending machines and school staff sugar-sweetened beverage consumption. Preventive medicine reports, 19, 101128. <https://doi.org/10.1016/j.pmedr.2020.101128>

References

35. Recycle Colorado. Schools. (2022). <https://www.recyclecolorado.org/schools>
36. School Nutrition Association (2020). Impact of COVID-19 on School Nutrition Programs: Part 2. https://schoolnutrition.org/uploadedFiles/11COVID-19/3_Webinar_Series_and_Other_Resources/COVID-19-Impact-on-School-Nutrition-Programs-Part2.pdf
37. School Nutrition Association. School Meal Trends & Stats. (2022). <https://schoolnutrition.org/aboutschoolmeals/schoolmealtrendsstats/>
38. School Nutrition Association. The National School Lunch Program: Supporting Healthy, Well-Nourished Students. (2022). https://schoolnutrition.org/uploadedFiles/About_School_Meals/What_We_Do/Lunch-Benefits.pdf
39. South Carolina Office of Solid Waste Reduction & Recycling. Composting A Guide for South Carolina Schools. (2018). <https://scdhec.gov/sites/default/files/Library/OR-1520.pdf>
40. Strong, A. (2020). A New Future for School Food. Heated Medium. July 14, 2020. <https://heated.medium.com/a-new-future-for-school-food-1fcda5817ea9>
41. The Role of Technology in the Future of K-12 Food Service. <https://www.linq.com/2020/11/role-technology-k12-food-service/>
42. Tola G, Talu V, Congiu T, Bain P, Lindert J. Built Environment Design and People with Autism Spectrum Disorder (ASD): A Scoping Review. International Journal of Environmental Research and Public Health. 2021, 18, 3203. [doi: 10.3390/ijerph18063203](https://doi.org/10.3390/ijerph18063203)
43. United States Department of Agriculture. The School Day Just Got Healthier. https://fns-prod.azureedge.us/sites/default/files/School_Meals_Summary.pdf
44. United States Environmental Protection Agency. Ensuring Drinking Water Quality in Schools During and After Extended Closures. (2021). https://www.epa.gov/sites/default/files/2021-03/documents/us_epa_schools_extended_closures_factsheet_508_3-4-2021_0.pdf
45. United States Environmental Protection Agency. Lead and Copper Rule. (2021). <https://www.epa.gov/dwreginfo/lead-and-copper-rule>
46. United States Government Accountability Office. K-12 Education: Lead Testing of School Drinking Water Would Benefit from Improved Federal Guidance. (2018). <https://www.gao.gov/products/gao-18-382>

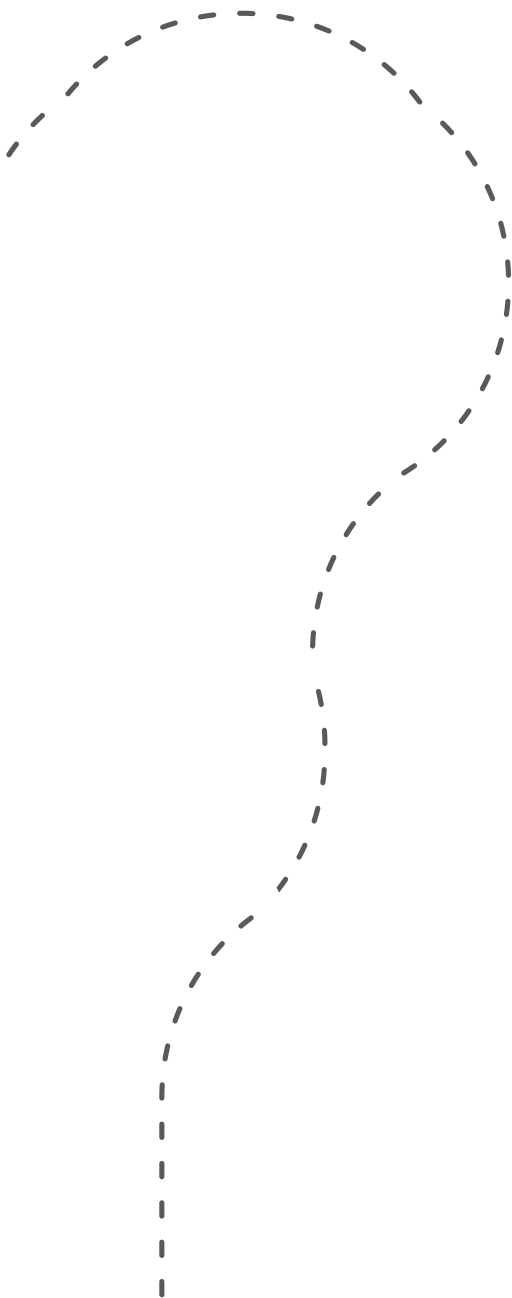
Cafeteria



→
Thomas Jefferson
Independent Day School



←
Ryan Middle School



For more information, contact:

K12Education@perkinswill.com

Continue Riley's journey at:

healthyk12.perkinswill.com/

Perkins&Will