
Curriculum Development

Even after 20 years, we are always in a process of reimagining, updating, and creating anew our curriculum.

Ongoing engagement with our lessons helps us to stay energized and excited about what we teach, and keeps our students' classroom experiences feeling relevant and important. Continuing to revise our curriculum also engages us in the critically important, on-going dialogue with our central goal of cultivating equity in our classrooms and communities. As the conversations around equity in society as a whole evolve, we are always working to reflect that in our curriculum.

Whenever we develop or edit a lesson, it happens in two parts. First we'll create a draft of the lesson in its entirety. This may happen all at once, or it may happen over the course of a longer period of time; it may happen from scratch, or through editing an existing lesson; it may be collaborative or combine independent thinking and group conversation. Once we have a draft, we review it as a teaching team. While reviewing, we take a fine-tooth comb to every aspect of the lesson—the write-up, the teaching materials, activities, food, recipes, etc.—to make sure it reaches our goals for student learning and student experience. We look to see the lesson is doing what we want it to do (e.g. help students to better understand the greenhouse effect), and not inadvertently doing what we don't want it to do (e.g. make students feel overwhelmed and powerless over the scary impacts of climate change). After this review, we circle back to the lesson draft and revise it to address any issues identified in the review. This cycle of revision may happen once or many times.

When we feel a lesson is ready to teach, we try it

out. Inevitably, this surfaces new considerations. We address what we can right away and record what we can't address immediately for the following year. Many of these considerations are captured in the "Teaching Notes" sections of our lesson write-ups. Overall, we aim to create curriculum as dynamic as the content we teach and the spaces we teach in. Below, we've outlined a rough guide to our curriculum development process. Our goal is to provide you with suggestions and tools that you may draw from to use in your own program, and also to provide context for the development of each of the lessons that follow.

Lesson Development

1. IDENTIFY AND DEFINE LESSON GOALS

The first step when we create new a lesson or edit an existing one is to define the lesson's overarching goals. These goals may be skill-based (e.g. to develop students' knife skills, or to help students practice working as a team), they may be thematic (i.e. to engage students on the intersection of food choices and environmental issues, or to explore agricultural techniques used by historical civilizations of the Americas), they may be related to how we work (e.g. to support our upcoming plant sale, or to increase buy-in and facilitate collaboration with math teachers), or they may be a combination of the three. Some of our lessons develop from one major goal, but most begin with two or three.

In almost every case, lesson goals arise from where the lesson is in the overall scope and sequence of our students' experience in the kitchen and garden

classrooms and their academic classrooms. This often means collaborating with academic classroom teachers to generate lesson goals that coincide with or support students' academic learning on specific topics or themes—we seek their input wherever possible because it helps inform how we can best support the overall learning of our students. Every lesson also has at least one goal stemming from the arc of students' development of knowledge, skills, and behaviors unique to our kitchen and garden classrooms. For example, whenever we build or revise a seventh-grade lesson for our kitchen classroom, we do so with an eye towards the final seventh-grade lesson of the year: Iron Chef. In the Iron Chef challenge, table groups work together—without adult assistance—to plan and prepare a meal based on a set of surprise ingredients. This lesson demands a high level of collaboration and independence from the students, as well as a mastery of basic cooking skills and techniques. In order to prepare students to enjoy and feel successful with this challenge, we specifically design the seventh-grade lessons leading up to Iron Chef to support their development of these skills. This same thinking is applied for all of our lessons, both in the kitchen and in the garden.

In addition to supporting a more cohesive student experience, defining these broad lesson goals is crucial to facilitating successful and efficient collaborative lesson development. They focus our efforts as we move forward and allow us to be flexible in designing the specifics of our collaboration process—with the lesson goals as touchstones, we may delegate much of the lesson design process to just one or two people or choose to craft in group discussion, infinitely more efficient and creative with everyone on the same page.

2. DEVELOP STUDENT LEARNING OBJECTIVES

Student learning objectives translate lesson goals into student experience: What do you want your

students to get out of this lesson? What knowledge, skills, behaviors, or other learning should they have leaving your classroom that they didn't have when they arrived? Learning objectives should be specific, attainable, measurable, and important. Just as our overarching goals for a lesson often look quite different between lessons - while one lesson may be built to facilitate student learning on the scientific process, another may originate with a desire to strengthen collaboration between the art department and the kitchen classroom - student learning objectives vary greatly across our lessons. Sometimes learning objectives may be developed entirely from the lesson goals. Often, however, they are refined and made more specific in conjunction with the next step in our process: choosing the food, crop, or activity that the students will engage with.

3. CONSIDER YOUR FOOD, CROP, OR ACTIVITY

With the overarching goals and specific learning objectives defined, our next step is to dive into the food, crop, or activity: What will the students do or experience to reach the learning objectives and for the lesson goals to be met?

In the kitchen, this means choosing a recipe. Some key considerations when choosing what to cook with students are:

What is in season? Ideally, every recipe we make includes at least one ingredient that comes directly out of our garden.

How much time do we have? The most exciting, delicious recipe is no fun if students feel rushed making it. Sometimes, tricks like having boiling water ready when students arrive, pre-cooking or partially cooking certain ingredients, or having students follow a “pay it forward” model where classes prepare foods to be used or enjoyed by following classes can help buy us more time.

Will students like the food? We want everything we cook in the kitchen to be delicious. We often choose

foods that many students are already familiar with to maximize student buy-in.

What foods are important to our students? All students should feel welcome, seen, and represented in our space. We cook foods from a variety of cultures, and frequently ask students what foods they eat at home and which foods are important to them. When creating a new lesson, we actively seek input and feedback from students and community members who identify with that food.

What cooking skills do we want students to learn or practice? If our aim is for students to develop their knife skills, just making pancakes is not the best choice to serve that goal. Add supremed citrus and thinly sliced candied citrus peels to that lesson, and you may have the ideal food.

What themes or topics do we want to explore? If we're building a lesson around the spread of spices from India along the Silk Road to support the sixth-grade history curriculum, we'll choose a recipe that includes the specific Indian spices involved in this historical trade.

What goals do we have for student behaviors and habits of work? If we're aiming to increase students' perseverance and focus, we may choose a recipe that requires a lot of specific, careful knife work like vegetarian sushi, or one that has a narrow margin of error and requires high levels of attention to technique like a rolled omelette.

How many students will we have? What is the adult-to-student ratio? The greater the number of students and the fewer adults, the more important it is to choose a recipe that students can be successful at relatively independently.

Will there be enough meaningful jobs? We want all students to be engaged for the full time that they are with us, whether it be preparing the recipe, setting the table, harvesting herbs for our water,

or taking a poll of which hot sauce the table group would prefer to have with the meal.

What equipment and tools do we have? Which recipes best meet the constraints or qualities of our space? We think about work flow when choosing a recipe or multiple recipes. If we already know a lesson includes one dish that will be cooked at the stove, maybe we'll add a recipe that will be eaten raw, or one to be cooked in the oven, to best use our resources and avoid overcrowding any one area of the kitchen.

WHAT WILL THE STUDENTS DO OR EXPERIENCE TO REACH THE LEARNING OBJECTIVES AND FOR THE LESSON GOALS TO BE MET?

Will students make the recipe at home? We choose recipes that students can replicate at home with basic equipment and tools and affordable, easily sourced ingredients. When we use special equipment in the kitchen, we suggest alternatives (such as using a glass or bottle as a rolling pin), and always provide copies of the recipes for students to take home.

Will preparing the recipe be fun? We have never made French onion soup and probably never will, because what kid wants to spend a 90-minute cooking class crying?

In the garden, this means determining the garden jobs. Some key considerations when choosing garden jobs are:

What does the garden need? Just as we have our students work with real tools, we always want the work our students do in the garden to be authentic to the true needs of the space. Working on real gardening jobs allows students to work toward mastering gardening skills that will continue to serve them after graduating from our program; it teaches students through experience how to identify and recognize the needs of a garden and how to meet those needs; and it develops in

students a sense of self-efficacy and ownership over the space, recognizing that their actions are directly reflected in the growth and health of the garden.

How much time do we have? For many of our students, learning to appreciate the rewards of the work required to maintain and care for a garden is already a major lesson in patience. Whenever possible, we try to have students work on jobs that can come to some form of conclusion or culmination in the time we have to work. We try to provide opportunities for students to see the results of their efforts over the short and long term.

What gardening skills do we want students to learn or practice? Our goal is that every student will graduate from our program with the basic knowledge and experience required to successfully grow food. In most lessons, we include some variation of four gardening jobs: propagate, cultivate, harvest, and compost. Over the course of a student's three years in our program, we intentionally build opportunities for them to develop capacity in these areas.

What themes or topics do we want to explore? We collaborate closely with King Middle School's science teachers and use the Next Generation Science Standards (NGSS) as an invaluable resource to translate academic ideas or concepts into hands-on garden-based experiences. We truly believe that anything can successfully be taught in a garden classroom—collaborating with a diverse group of stakeholders can be key in identifying rich connections.

Can many hands complete the task? We want our students to be meaningfully engaged for the entire work period. If one task won't be enough but is something we feel strongly that we'd like our students to have the opportunity to do or that the garden urgently needs, we'll often have that group spend half the period completing the task and the other half preparing a tasting, working on another job, or in free exploration time.

How many students will we have? What is the adult-to-student ratio? The greater the number of students and the fewer adults, the more important it is to choose a garden job that students can be successful at relatively independently.

Will it make best use of the space? Whenever we're making a new lesson, we always ask ourselves, "Could this same lesson happen inside?" If the answer is "yes," we know the lesson isn't there yet. The most valuable experiential learning happens in the garden when activities are authentic to the richness and uniqueness the space has to offer. We also always look to have a variety of tasks that can be completed in different areas of the garden. As much as possible, we aim to distribute working groups throughout the garden to avoid cramping one area.

Do the tasks appeal to the diverse interests and energy levels of our students? In every garden class we try to present a variety of jobs that appeal to all students. For example, students with a lot of energy will thrive in more physical jobs, while artistic students love a job in which they can spend the working period painting colorful signs for the garden beds.

4. CRYSTALLIZE CONNECTIONS

What teaching practices, structures, or strategies will we use to crystallize the connections between the food, crop, or activity and the specific learning objectives? Defining a learning objective and choosing a food that relates to that objective doesn't necessarily set students up to meet the learning objective. In this step, we get specific about how the students will relate with the food, crop, or activity in a way that facilitates the learning we want to happen. This step is especially important because so much of the learning that occurs in our classrooms is experiential. Being intentional about how we frame and set up student experience in our lessons means the difference between, for example, students having a great time propagating starts in the greenhouse

and also learning that climate change is causing a rise in global temperatures versus students being able to describe how the way a greenhouse traps heat mirrors the role of the ozone layer in regulating global temperatures.

Practices, structures, and strategies we often use to intentionally make these connections include:

- ▶ Chef Meetings/Opening Circles
- ▶ Small-group check-ins
- ▶ Visual aids or other visual materials
- ▶ Written recipes or other procedures
- ▶ Breakout activities, labs, or other activity formats
- ▶ Discussions and structured reflections (large group, small group, facilitated, open, structured student talk, etc.)
- ▶ Lesson props or materials, such as interactive cards or thought-provoking books
- ▶ Closing Circles
- ▶ Exit tickets

Lesson Revision

After we draft a lesson, the next step is to review it. Just like our initial draft development process, lesson draft revision is always collaborative. The specifics of this collaboration vary from lesson to lesson. Most frequently, the main author(s) of a lesson distributes the draft to a committee of reviewers—generally the other kitchen teachers for a kitchen lesson and other garden teachers for a garden lesson, but sometimes both, as well as academic classroom teachers, and sometimes community members with experience or expertise that relates to the lesson. We make it a point to seek feedback from as diverse a collection of perspectives as possible because we recognize that this is one of the surest ways to succeed in always improving at our work and in creating curriculum that is meaningful to all of our students.

One tool we often use to organize the lesson revision process is the “Curriculum Discussion Tool,” included below. We initially developed this tool as a framework to support us in developing our

WHAT TEACHING PRACTICES, STRUCTURES, OR STRATEGIES WILL WE USE TO CRYSTALLIZE THE CONNECTIONS BETWEEN THE FOOD, CROP, OR ACTIVITY AND THE SPECIFIC LEARNING OBJECTIVES?

curriculum for social justice. Explicitly identifying ways that a lesson can work to cultivate social justice and dismantle oppressive systems (section III on the Curriculum Discussion Tool) allows us to better integrate those considerations into our lesson development process. Similarly, enumerating the variety of ways our classrooms can uniquely support students’ academic skills allows us to be more intentional in how our lessons support the academic lives of our students. At its core, the Curriculum Discussion Tool is useful because it holds space for a variety of considerations that we have decided as an organization to prioritize but don’t always get right the first time we draft a lesson.

We don’t expect to hit every consideration on the tool in any single lesson. In fact, it’s generally much better that we don’t. When reviewing a lesson, we absolutely look to see that our goals for student experience, our practical considerations, and our learning goals and objectives are met. In terms of “Anti-Oppression Curriculum” and “Building Academic Skills,” on the other hand, it is often much better for a lesson to very robustly hit one or two marks—trying for any more than that tends to clutter and dilute a lesson’s impact. Instead, we want our curriculum overall, as a collection of lessons, to reflect the priorities listed on the discussion tool.

After individuals have read through a lesson draft and filled out the Curriculum Discussion Tool based on their reading, author(s) and reviewers meet to discuss. And around and around! Lesson development and revision is ongoing, nonlinear, and iterative.

The Edible Schoolyard Curriculum Discussion Tool

LESSON NAME:

LESSON GOALS:

STUDENT LEARNING OBJECTIVES:

MATERIAL AND CONTENT FOR REVIEW

- Chef Meeting/Opening Circle (content, language, delivery)
- Small-group check-ins
- Visual aids or other visual materials (content, language, appearance)
- Written recipes or procedures (content, language, appearance)
- Activities (What are the students doing? What are the teachers doing?)
- Food/crops
- Other: _____

Lesson Review

Does this lesson do what we want it to do? What does this lesson do? Reflect on all lesson materials and content. Rate considerations in each category below based on how well the lesson does it:

YS Yes (strong)

YW Yes (weak)

N No

P **Potentially!** Not yet, but could be developed

STUDENT EXPERIENCE

___ How might different aspects of student identity impact a student's experience of this lesson?
Is there anything in this lesson that could alienate, hurt, or cause a student to feel unwelcome on the basis of any aspect of their identity? Consider race, gender, class, family structure, religion, ability, sexuality, body type, other, etc.

___ Is FUN

LESSON GOALS AND LEARNING OBJECTIVES

- ___ Supports the stated lesson goals
- ___ Meets the stated student learning objectives

ANTI-OPPRESSION CURRICULUM

- ___ Provides opportunities for students to learn about self and identity
- ___ Explores how identity differently impacts various groups of people
- ___ Presents opportunities for critical thinking—especially about identity and access to resources
- ___ Helps to shift assumptions and dominant stories about what is normal (re: race, gender, class, family structure, religion, ability, sexuality, body type, etc.)
- ___ Provides opportunities for students to think critically about the narratives told about food and morality in our culture (e.g. good vs. healthy vs. unhealthy)
- ___ Provides historical context for present-day inequities
- ___ Integrates constructive ideas from students or community
- ___ Incorporates different learning modalities (visuals, body-based learning, etc.)
- ___ Incorporates visual aids that are representative of different cultures and experiences
- ___ Provides opportunities to take action on issues that affect students and their communities
- ___ Provides opportunities for student talk time

BUILDING ACADEMIC SKILLS

- ___ Provides opportunities for students to develop their skills as learners
 - ▶ By practicing scientific and inquiry thinking (observation, hypothesis, testing theories, investigating questions, etc.)
 - ▶ Through integrating information from a variety of sources (firsthand observations, personal experience, direct instruction, written text, visual aids, existing knowledge, etc.)
 - ▶ Through opportunities for metacognition, self-assessment, and process assessment
- ___ Provides opportunities to practice systems thinking (drawing connections, recognizing intersections, cause and effect, thinking on a variety of scales)
 - ▶ By drawing connections between lessons learned in kitchen and garden classrooms and the larger world
 - ▶ By observing and articulating large-world phenomena/big ideas playing out in kitchen and garden classroom “laboratories”

- ___ Provides opportunities for students to develop their discussion skills
 - ▶ By articulating their own ideas in a variety of formats with a variety of participation protocols
 - ▶ Through actively listening to the ideas of others
- ___ Provides opportunities for students to develop their literacy
 - ▶ Through reading recipes or other process texts
 - ▶ Through language and vocabulary acquisition
- ___ Provides opportunities for students to develop their identity as a successful student and sense of self-efficacy around learning
- ___ Provides students the opportunities to build positive relationships with people who can support their academic success
- ___ Integrates information or content that connects to their academic classrooms
- ___ Connects to NGSS, Common Core, CA State History-Social Studies, or other standards

Practical Considerations

- ___ Practical in the time given
- ___ Practical in the space
- ___ Practical with the number of students and student-to-adult ratio

Comments: