



Flavor Lab Homeschool Lesson Plan

Raddish Lesson Plan Road Map

We design these lessons to be adaptable and flexible to your students and your life. You can do A Little Taste in ~45 minutes, or you can use the extension activities and make the projects and activities listed last over several lessons or even weeks. The lessons are meant to be interdisciplinary, covering many subject areas at once. Students of all ages can use these materials, with learners who are pre-writers able to draw or verbally share responses.

If desired, you could extend these lessons into a project-based learning unit of study, where students tackle a real world problem and create solutions. The learning happens in the process of getting to the presentation of the solution, and students often find it more meaningful when they are investigating a topic of their choice.

For a deeper look at the topic, A Big Bite offers extension ideas for learners who are able to read, write, and think on a higher level.

We always love to see your finished projects! You can share them in our Facebook group, [The Raddish Table](#), or email us hello@raddishkids.com.

Driving Questions: How are we able to taste different flavors? What flavors do people like most? How does this change as you get older?

A Little Taste

Resource List

Background Information (also linked within lesson)

- *Little Pea*, picture book by Amy Krouse Rosenthal, <https://bookshop.org/books/little-pea/9781452142890>
- Kids Book Read Aloud: Little Pea by Amy Krouse Rosenthal and Jen Corace, video read aloud by StoryTime at Awnie's House, https://www.youtube.com/watch?v=F4YTcr7k_jc
- *Yum! A Book About Taste*, picture book by Dana Meachen Rau, https://www.amazon.com/Yum-About-Taste-Amazing-Senses/dp/1404810218/ref=sr_1_1?keywords=yum+a+book+about+taste&qid=1638909641&s=books&sr=1-1
- *Yum! A Book about Taste*, video read-aloud by 图书馆Library, <https://www.youtube.com/watch?v=KguzkN515y0>
- Kids Try Miracle Berries | Kids Try, video from HiHo Kids, <https://www.youtube.com/watch?v=eWLPdIFqa3s>
- At-Home Science Experiments: Tongue Map, activity from Scholastic, <https://www.scholastic.com/parents/kids-activities-and-printables/activities-for-kids/math-and-science-ideas/home-science-experiments-tongue-map.html>
- 50 Flavored Popcorn Recipes, recipe list from Food Network, https://www.foodnetwork.com/recipes/articles/50-flavored-popcorn-recipes/?fbclid=IwAR2TuHwz2IDS_oohHi3fMmr3LbdRSSO8iM2YaQASrub6a8b7ws7fCpax9dQ
- You Pick! Popcorn Mix and Popcorn Math, Bonus Bite from Raddish Kids, https://www.raddishkids.com/blogs/bonus-bites/you-pick-popcorn-mix-and-popcorn-math?pos=2&_sid=a1ce09b95&_ss=r

Optional Extensions

- *Senses: Tasting in Living Things*, picture book by Karen Hartley, Chris Macro, and Philip Taylor, <https://www.amazon.com/Tasting-Living-Things-Senses-Hartley/dp/157572250X>
- Experimenting with Ant Food: Do Ants Have Favorite Flavors?, science experiment from Education.com, <https://www.education.com/science-fair/article/ant-food/>
- Why Can't These Animals Taste Sweets?, video from Seeker, <https://www.youtube.com/watch?v=NB1k2ztYrIQ>
- *I Will Never Not EVER Eat a Tomato*, picture book by Lauren Child, <https://bookshop.org/books/i-will-never-not-ever-eat-a-tomato/9780763621803>

- I Will Never Not EVER Eat a Tomato by Lauren Child, video read aloud by Play and Shine, <https://www.youtube.com/watch?v=taDxllhL3mU>
- Two Whats?! and a Wow! - Taste Bud Retirement, podcast episode from Wow in the World, <https://podcasts.apple.com/us/podcast/two-whats-and-a-wow-taste-bud-retirement/id1233834541?i=1000472986883>

Conceptual Knowledge - What Do You Want Them to Know?

1. Different kinds of flavors are detected by our taste buds, which then send different messages to our brain about what we are eating and if we like it.
2. Our sense of taste and what foods we like depend on our taste buds, which can change over time.

Key Vocabulary

- **taste buds** – the little sensory nerve endings on the surface of your tongue and back of the throat that allow you to experience sweet, salty, sour, bitter, and savory/umami flavors
- **saliva** – a liquid in your mouth that your body produces that works with your taste buds and softens food
- **papillae** – tiny bumps and spikes that cover your tongue

Cross-Curricular Links

- Language Arts, Science, Social Science

Project Idea/Scenario

Students will test flavors to see which are most popular and most easily sensed.

Plan the Process: What Will the Students Do?

After learning about the science of taste buds and how food is flavored, students will select a project where they can test some of their new knowledge around taste and flavor

Warm-up Activity - Activating Background Knowledge

- With eyes closed, have students think of one of their favorite foods. Once they have a food in mind, have them volunteer descriptive words about the food but not name the food itself (e.g. for cookie, the words might be sweet, chocolatey, chewy, etc.) After a few descriptive words, see if someone else can then guess what food matches the adjectives.
- After a few rounds, ask: what did thinking about these foods do to your mouth? Did thinking of certain foods make your “mouth water”, or create saliva in anticipation of eating this food?
- In the foods that were named, how many of the foods were mostly sweet? Think through the foods and see how many would fall under each category of sweet, sour, salty, bitter, and savory/umami.

- For today's lesson, you will be learning more about how your taste buds detect these different categories of foods and work together with your nose to determine flavors in foods.

Sequence/Procedure

1. [Read](#) or [listen to the picture book](#) *Little Pea*.
 - a. What makes this story silly? Are you like Little Pea, the opposite, or somewhere in between?
 - b. What tastes or flavors are appealing to Little Pea? Are those same ones appealing to you? Do you think most kids are like Little Pea?
2. [Read](#) or [listen to Yum! A Book About Taste](#).
 - a. What did you learn about your taste buds and your mouth that was new information? What new vocabulary words did you learn?
 - b. If Little Pea had taste buds, how do you think they would be different from yours, based on the tongue map in the book?
3. [Watch the video](#) about kids eating miracle berries, and then discuss:
 - a. What did the miracle berry do to the typical flavors of the foods?
 - b. If you could eat a miracle berry, what food would you most want to try to eat after?
 - c. Do you think adults would have the same reaction to miracle berries? Why or why not?
4. Complete [the tongue map activity guide from Scholastic](#), then fill out your own flavor map on page 8 of the lesson plan. If you can, compare your results to someone else and see if your tongue maps are the same.
5. Select a project to complete where you will be able to highlight your new understanding of taste and flavors. (Depending on which project is selected, you will need to gather some different materials for popcorn; browse through the recipes [here](#) and [here](#).)
6. Share the results from your popcorn flavor lab while enjoying any of the recipes from the Flavor Lab Raddish kit.

Possible Creations

1. Create a popcorn shop! Evaluate the recipes for different popcorn flavors from The Food Network list of popcorn variations or [the Raddish "You Pick! Popcorn Mix."](#) Use your knowledge of what flavors you think might appeal to your friends and neighbors and create your own! Sell your popcorn and see which flavor is your biggest seller. Make sure to reflect on what you might change for next time, and what worked well.
2. Select a few popcorn styles to make. Try to include at least a few different flavors that would cover different areas of the tongue map. Host a blind taste test (have your friends and family sample) and see what they like without telling them the flavors used. Can they identify the flavors? You can give them the tongue map to refer to, so they can point to the specific salty, sweet, sour, bitter, and umami flavors they detect. Which flavors were easiest for people to taste? What does this make you think about how chips and other snack items are flavored?

3. Smell is a big part of how we all experience flavors. Host your own flavor lab, where you give samples of flavored popcorn to your friends and family to eat while blocking their noses (and blindfolding them so they get no visual clues). Can they tell the flavors? Have them then partially block their noses and try again. What flavors come through with only a partial sense of smell? Finally, have them just smell the popcorn without tasting. Are they able to name any of the flavors, even without tasting? Report your most detected and least detectable flavors after testing.

Extensions

1. Read [Senses: Tasting in Living Things](#). How are animals the same as us in regards to taste? [Watch the video about animals detecting sweet](#); which animal is most similar to you in terms of taste buds? Set up [the ant taste test](#) and see what flavors ants are most drawn to.
2. [Read](#) or [listen to the book](#) *I Will Never Not EVER Eat a Tomato*. See how you can rename foods that your family doesn't like. Create a menu highlighting your "new" foods; you could even rename some favorite foods to make them sound awful and see if this makes them less appealing! Consider the art in the book, and include illustrations on your menu that might help encourage someone to try your new creations.
3. [Listen to the podcast from Wow in the World](#) about taste buds. If you had to throw a retirement party for a taste bud that was retiring on your tongue, which taste bud would you pick (and what foods would you then eat more or less of as a result?) Write a speech to your retiring taste bud and give examples of what you will (and won't) miss tasting!

Driving Questions: Why do different people like different flavors and tastes? How do you learn to enjoy new flavors?

A Big Bite

Resources

- *Your Tongue Can Tell*, picture book by Vicki Cobb, <https://www.amazon.com/Your-Tongue-Can-Tell-Discover/dp/0761314733>
- Why This Taste Map is Wrong, video from Wired, https://www.youtube.com/watch?v=0klEcayEj_o
- “12 popular potato chips around the world”, article from Insider, <https://www.insider.com/potato-chips-around-the-world-2018-10#in-egypt-chipsy-chips-prevail-4>
- “Lay’s new chip flavors are inspired by different regions of the US - and one bag tastes just like fried pickles”, article from Insider, <https://www.insider.com/lays-taste-of-america-fried-pickle-chips-2018-7>
- “What a Global Flavor Map Can Tell Us About How We Pair Foods”, article from The Salt at NPR, <https://www.npr.org/sections/thesalt/2011/12/20/144021294/what-a-global-flavor-map-can-tell-us-about-how-we-pair-foods>
- “What makes a supertaster and how to know if you are one”, article from CBC Radio, <https://www.cbc.ca/radio/what-makes-a-supertaster-and-how-to-know-if-you-are-one-1.5103847>
- “Healthy food: can you train yourself to like it?”, article from The Guardian, <https://www.theguardian.com/lifeandstyle/wordofmouth/2013/feb/26/healthy-food-train-yourself-like-it>

Project Idea/Scenario

Students will create a tongue map and then learn more about how certain flavors are more popular in certain regions around the world. Using new knowledge, students will create a project that shows how flavors are perceived differently by different people.

Sequence/Procedure

1. What do you already know about your tongue and how it tastes? Write down five things you know before then [reading the book *Your Tongue Can Tell*](#).
 - a. How many different flavors and tastes did the book talk about? Out of those mentioned, which is your favorite?
 - b. There are many different small experiments listed throughout the book; see if you can gather the materials to do one or two. Did your results match what you expected?
 - c. How does your sense of taste work with your other senses? How does it operate without sight or smell?

2. Watch [the video about the common tongue map](#).
 - a. How is what we know about taste on the tongue wrong, or how has it been misconstrued over time?
 - b. What are supertasters? What careers do you think a supertaster might succeed in?
 - c. Can we teach ourselves to like a taste? What does the science say? What do you think from your own experience?
3. Using video and by doing your own taste tests (refer back to the guide in [Your Tongue Can Taste](#) as well), fill out the tongue map on page 8 of the lesson plan. You can gather your own supplies from around your house to test your taste buds as well to confirm what the book and video suggest about taste receptors.
4. Browse through the [articles about popular flavors of chips](#) globally and [in the US](#), then [look at food trends around the world](#). Highlight on the world map on page 9 of the lesson plan the tastes that are most popular in other regions.
 - a. Are there specific places where one flavor or taste is favored over another?
 - b. Which countries have similar tastes? Which countries are very different in terms of flavor trends?
5. Choose a project from the list below and complete it to help others learn more about taste and flavor. Share your completed project while enjoying any of the recipes from your Flavor Lab Raddish kit!

Possible Creations

1. Using the information in this article and your new knowledge, see if you can train yourself to like a new food. Present results of a taste test of an unfamiliar flavor/taste, and the methods used to try to get yourself to enjoy it. Create a guide for anyone looking to do the same for introducing new foods to kids or in introducing new unfamiliar cuisines to anyone.
2. Create an illustrated flavor guide to the world. What's the best place to travel to if you like salty, sweet, or any of the different tastes? Create an itinerary or a highlighted map of where someone who is seeking a certain flavor should not miss if they wanted to travel the globe in search of certain flavors.
3. Test your family and see if you have a supertaster! Predict if you have anyone in your family who you suspect might be a supertaster and explain your reasoning. (You can read through [this article from the CBC](#) to give you clues as to who might be one.) You can test first using bitter foods to see if someone is more sensitive to the bitter taste. After your initial tests, use the test as explained by the CBC to see if anyone's tongue demonstrates that they actually are a supertaster. Write up your conclusions and present your results to your family!

Tongue Mapping

Label the different tastes that you tend to be able to best detect on each part of your tongue. Note the items used for your taste tests.



Which foods come first to mind for each of the categories below? Fill in the chart, then circle your favorite category: has this changed over time?

sweet	
sour	
salty	
bitter	
umami	

