OSU EXTENSION SERVICE

Klamath Basin Research & Extension

Grow It, Cook It, Like It

Farm to School and Nutrition Education Program

FoodCorps

Oregon State University

Hi, I'm Miss Anna!

Q: If you were a vegetable, what type of vegetable would you be?

If I were a vegetable, I would be a pea! Special bacteria can live on the roots of peas (and other legumes). These bacteria make a nutrient called Nitrogen for the soil. Nitrogen is one of the three key nutrients that plants need to grow.

I am like a pea because I build a welcoming and nourishing foundation that allows others to thrive and grow. Plus peas are delicious – I especially enjoy snap peas!

To the right is a picture of me at Henley Elementary asking students what they think of our local ground beef taste test. My Shasta Scorpions and Henley Hornets will recognize me from the cafeteria and maybe even your classroom!

Questions or comments about this lesson? Get in touch!

anna.barlowe@foodcorps.org

Lesson #4: The Perfect Potato

Today, we're going to learn how to bake the perfect potato using science!

Q: How do we use science to learn the best way to bake a potato?

Oregon State University
Extension Service

Using the scientific method to conduct a potato experiment

The scientific method is the process of doing experiments in order to answer important questions. Scientists stick to a general set of rules and steps in order to make sure they are getting results they can actually trust.

- ✔ **Start with a hypothesis –** also known as a prediction or guess for what will happen.
- ✔ **Test it with an experiment –** set up your experiment so that you can separate out and easily measure what you want to test. For example, if you are testing how cooking methods affect the taste of a potato, don't also change the temperature for each method.
- ✔ **Document your results -** good scientists take lots of notes before, during and after experiments! This lets you draw conclusions and figure out if your hypothesis was correct or incorrect.

What are the different ways to bake a potato?

Today we are going to compare four different ways to bake a potato and discover which way is the quickest and which way gives us the best tasting potato

- ✔ **In the microwave**
- ✔ **In the oven**
- ✔ **In the oven and wrapped in tinfoil**
- ✔ **In the oven with a metal "potato nail" stuck in it**

Potatoes are a very important crop we grow right here in the Klamath Basin. Do you remember Klamath potato try day in the cafeteria?

Q: What is the best way to bake a potato?

Let's get ready for our next experiment – cooking up Mr. Potato Head! (He's not too happy about this.)

Oregon State University
Extension Service

Time for our experiment!

Gather the following materials before you begin:

- ✔ **Four potatoes –** they should be about the same size. Folks generally prefer Russet potatoes for baking, but in my opinion all potatoes are yummy!
- ✔ **Oil –** olive, vegetable, or canola oil will all work.
- ✔ **Tinfoil –** enough to fully wrap and cover one of your potatoes.
- ✔ **Fork –** for poking holes in the potatoes
- ✔ **Stainless steel "potato nail" –** this can be an actual nail (or a few if they are small), a metal skewer, or even a butter knife. Make sure it's clean, and stainless steel (so it doesn't leave any traces of metal in your food).
- ✔ **Access to a kitchen & parent help –** since you'll be using the oven and microwave, you'll need parent permission and help throughout this experiment!

My supplies. Did you know that potatoes grow underground on the roots of a plant?

Step #1 – Prepare your potatoes

1. Pre-heat your oven to 425° F.
2. Write your hypothesis down – which cooking method do you think will be the fastest? Which one will taste the best?
3. Wash and scrub your potatoes.
4. Use a fork to poke holes all over your potatoes. Then, rub some oil on the surface of them.
5. Wrap one of these potatoes with tinfoil. Stick your "potato nail" through another.

Baking Potatoes.

Step #2 – Bake them

1. Once your oven has finished pre-heating, put your tinfoil, potato nail, and unwrapped potato directly on the oven rack. Start a stopwatch when you put them in.
2. Your fourth potato should go in a microwave safe dish and in the microwave on high for about 5 minutes at first.
3. After five minutes in the microwave, check the potato with a fork to see if it's done – does the fork easily poke through? If not, flip your potato and cook it for another 3 minutes before checking it again. (Caution: it will be HOT – don't touch it with your bare hands! Use a pot holder/dish towel if needed.)
4. Continue this microwave process until the potato is done, and then record the total time it was cooked in the microwave.

Baked potatoes are just one healthy way to eat a potato. What's your favorite way to eat a potato? Mine is roasted!

Step #2, continued – Bake them

1. After about 30 minutes, check on your 3 potatoes in the oven. Again, use the fork to test and be careful as they will be hot.
2. If any of them are soft enough and done cooking, record the total time baked in the oven.
3. If they need more time to bake, check on them in 10 minute intervals and record the total time each potato spent in the oven.
4. When all your potatoes are done and out of the oven, be sure to turn it off.

Potatoes come in many varieties – with different colors, shapes, tastes and textures.

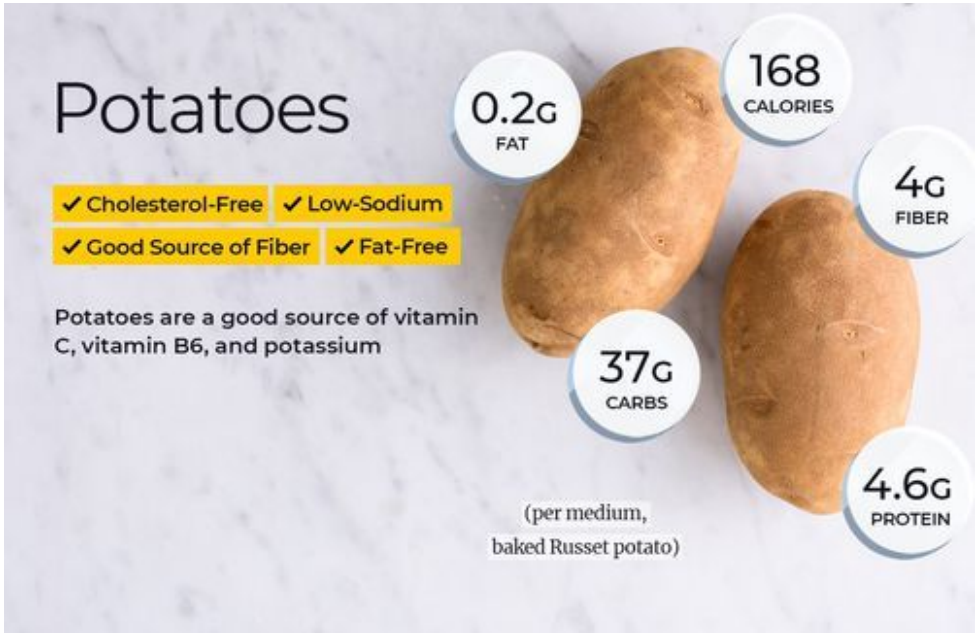
Step #3 – Results: Dig in!

1. Answer the following questions using full sentences: Which potato took the longest time to cook? Which potato took the shortest time to cook? How does this compare to your original hypothesis?
2. Now for the fun part – taste testing! You may want to add some flavor to your potatoes with toppings, and invite a family member to join you in your tasting.
3. As you eat, record for each potato: On a scale of 1-5, how did the potato taste? On a scale of 1-5, how enjoyable was the texture of the potato?

Healthy topping suggestions for baked potatoes – broccoli, cheese, avocado, ham, mushrooms, tomatoes, sour cream, beans...the list goes on!

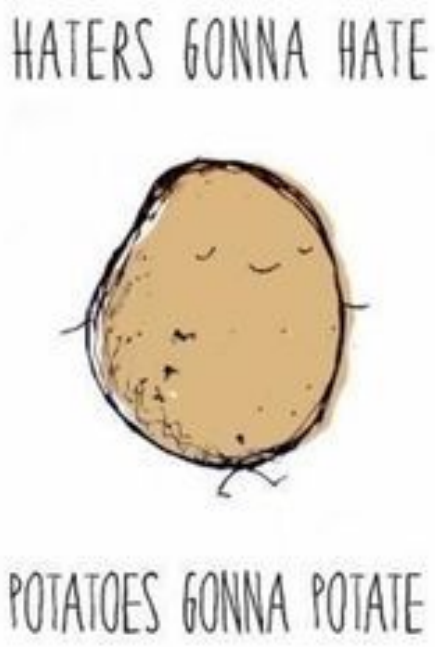
What did we see and learn?

- Your potato that cooked in the microwave should have cooked the fastest – microwaves are pretty handy for that reason: they are super fast at cooking!
- The tinfoil and potato nail potatoes probably cooked for about the same time, and most likely faster than the regular potato.
- These methods used metal's ability to conduct heat really well, speeding up the cooking time.
- In terms of taste and texture...this is probably a personal preference! But most likely you found that the potato in the microwave and wrapped in foil were a bit chewier, especially the potato peel.



Be sure to eat the peel to get all these healthy benefits and nutrients!

Draw conclusions - now you know how to bake *your* perfect potato!



Knowledge Check!

- ✔ Send an email to anna.barlowe@foodcorps.org with a picture of your baked potatoes, or you eating them!
- ✔ I will respond and let you know if you can check off the "Perfect Potato" lesson/activity on your Bingo Board.
- ✔ Congratulations - you are one step closer to earning prizes and have some new knowledge about potatoes!
- ✔ Be sure to find a healthy baked potato topping at home or in the grocery store to check something else off your bingo board!

Me, showing off some purple potatoes to Shasta students!

More fun with potatoes!

- How to grow your own potatoes at home (5 min)- https://youtu.be/5spUhmGneGw
- A brief background on how potatoes grow, where they originated from, and their many uses (2 min)
  - https://www.youtube.com/watch?v=lYBuY-DnCJc
- What does the Oregon potato harvest look like? (5 min)
  - https://www.youtube.com/watch?v=H7A_xbHtGJI
- Harvesting potatoes with Wong's of the Klamath Basin (2 min)
  - https://kobi5.com/news/klamath-basin-potato-harvest-3-112246/

Thanks for joining me!

Want more fun farm to school and wellness activities? Want to earn awesome prizes? Visit our website to learn more!

FoodCorps

Oregon State University
Klamath Basin Research and Extension Center

Learning Objectives & Science Standards

Overall Program Learning Objectives:

1. Label the life cycle of plants/animals and describe the role humans have
2. Safely prepare a recipe with ingredients from food grown in Oregon
3. Describe what a plant needs to grow and how humans can assist
4. Identify where and how food is grown in Klamath/Oregon
5. Identify an Oregon grown food and taste it.

NGSS Standards Used in Garden Education 3rd Grade:

3-LS1-1 From molecules to Organisms: Structures and Processes
Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

3-LS3-1 Heredity: Inheritance and Variation of Traits
Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

3-LS4-3 Biological Evolution: Unity and Diversity
Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

3-LS4-4 Biological Evolution: Unity and Diversity
Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

3-ESS2-1 Earth's Systems
Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Engineering Design 3-5

3-5-ETS1-1 Engineering Design
Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2 Engineering Design
Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5-ETS1-3 Engineering Design
Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.