



MATH

Philanthropy and Tribes in Oregon

ESSENTIAL UNDERSTANDINGS

- Identity
- Lifeways

LEARNING OUTCOMES

By the end of this lesson, students will be able to ...

- Describe how the philanthropic work of Native American tribes in Oregon reflects their values and generosity.
- Justify how they used fractions to divide a whole into equal parts.

ESSENTIAL QUESTIONS

How do tribes in Oregon share resources with their neighbors?

How do acts of philanthropy reflect the values of an individual or group?

LOGISTICS

- Where does the activity take place?
Classroom
- How are the students organized?
 - Whole class
 - Teams: 2 – 4
 - Pairs
 - Individually

TIME REQUIRED

75 minutes

Overview

Philanthropy is a core value of Native American tribes in Oregon. Many tribes refer to this as the “spirit of potlatch,” which is a tradition that goes back hundreds and possibly thousands of years. In this spirit, many tribes have created charitable foundations or funds to support causes that benefit the local and surrounding communities. Collectively, tribal foundations are among the largest sources of philanthropy in Oregon.

This lesson uses the mathematical practice of fractions to introduce students to Native philanthropy. Students are given a dataset and asked to perform fraction concepts and justify their choices as part of a philanthropic effort. Students will be addressing Critical Areas 1 and 2 while addressing mathematical practices.

Background for teachers

- Students should have a prior understanding of grade 3 fractions, including recognizing and generating simple equivalent fractions, using a visual fraction model, and comparing two fractions. (3.NF.3) Teachers can check for understanding using the Fraction Bar Refresher worksheet prior to or in addition to this lesson.



- Teachers can learn more about the nine federally recognized tribes in Oregon and their many philanthropic efforts by visiting the following websites:
 - **Burns Paiute Tribe** – <https://www.burnspaiute-nsn.gov/>
 - **Confederated Tribes of Coos, Lower Umpqua and Siuslaw** – <https://ctclusi.org/>
 - **Three Rivers Foundation** – <https://www.threeriversfoundation.org/>
 - **Confederated Tribes of Grand Ronde** – <https://www.grandronde.org/>
 - **Spirit Mountain Community Fund** – <https://www.thecommunityfund.com/>
 - **Confederated Tribes of Siletz Indians** – <http://www.ctsi.nsn.us/>
 - **Siletz Tribal Charitable Contribution Fund** – <http://www.ctsi.nsn.us/charitable-contribution-fund>
 - **Confederated Tribes of the Umatilla Indian Reservation** – <https://ctuir.org/>
 - **Wildhorse Foundation** – <http://www.thewildhorsefoundation.com/>
 - **Confederated Tribes of Warm Springs** – <https://warmsprings-nsn.gov/>
 - **Cow Creek Band of Umpqua Tribe of Indians** <https://www.cowcreek.com/>
 - **Cow Creek Umpqua Indian Foundation** – <https://www.cowcreekfoundation.org/>
 - **Coquille Indian Tribe** – <https://www.coquilletribe.org/>
 - **Coquille Tribal Community Fund** – https://www.coquilletribe.org/?page_id=2489

STANDARDS

Oregon math standards

4.NF.3.a – Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.3.b – Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.

MATERIALS

What materials are needed for students to engage in this activity?

- Fraction Bar Refresher
- Philanthropy Tasks Worksheet
- Strategy Mat
- Student Giving Worksheet



- **The Potlatch Fund** –
<http://www.potlatchfund.org/>
- **First Nations Development Institute** –
<https://www.firstnations.org/grantmaking/>
- **The Klamath Tribes** –
<https://klamathtribes.org/>

Reference

National Council of Teachers of Mathematics. (2014)
*Principles to actions: Ensuring mathematical
success for all.*

Considerations for teachers

Assessment

- Teacher uses keys to identify completion and correctness of the Fraction Bar Refresher.
- Teacher reviews student understanding and application during Launch and Explore phases of the task sets.
- Teacher reviews student Extended task set for completion and correctness.

VOCABULARY

Potlatch – A Native American gift-giving tradition in which those with relative wealth or abundance of resources share with those who have less. Many tribes in Oregon and across North America have some variation on this tradition.

Philanthropy – The act of promoting the welfare of others by sharing money or resources.

Foundation – An organization devoted to providing money for research or charity.

Fraction circle – A circle broken into equal parts (fractions) to show parts to a whole.

Equation – A math statement that shows two values are the same using an equal sign.

Fraction bar – Rectangular pieces that represent different parts of the same whole.



Practices

- *Shoulder partner share*—students next to each other are designated as A or B. At various points of the lesson students will turn to each other to talk or listen to the other. Students listening should be able to add information or counter-information. They are also responsible for sharing their partner’s statement with the whole class.
- Group/pair work using a *strategy mat*. This allows students to practice their discourse and justification skills, while also allowing for multiple entry points to solve a problem. The teacher may decide ahead of time how groups will be determined, and it is best utilized when heterogenous groups are given explicit expectations that all students solve, discuss, share reasoning, and be able to speak for the group solution. Students use their designated workspace on the mat to answer the task’s question(s). Then there is time for them to discuss each other’s strategy in order to clarify and justify thinking. Student groups then determine a team answer and strategy. Every student should feel comfortable explaining the process to the whole class if called upon to do so.
- Review the ongoing work of the Oregon Math Project: <https://www.oregon.gov/ode/educator-resources/standards/mathematics/Pages/Oregon-Math-Project.aspx>
- Review guidance from the National Council of Teachers of Mathematics on using tasks in the math classroom:
 - Implement tasks that promote reasoning and problem solving – Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.
 - Facilitate meaningful mathematical discourse – Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and argument.

- Support productive struggle in learning mathematics – Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships. (National Center for Teachers of Mathematics, 2014)

Learning targets

- I can give examples of how tribes in Oregon use philanthropy to support their community partners.
- I can discuss information in datasets and use the information to solve math problems.
- I can break apart fraction sums of a whole number.
- I can justify fraction sets using a visual fraction model.

Options/extensions

- Have students explore additional questions developed in the launch portion.
- Have students work as a pair in task 3 to practice argumentation and compromise for grant decisions.
- Have students create a chart comparing how students practiced grant giving to the organizations.
- Have students explore each tribal foundation to learn more about their grant programs.

Reflection/closure

Ask students to think about and share what they learned about tribal philanthropy from the lesson.

Debrief how students approached and persevered through the tasks. Which parts were difficult and which parts seemed easier? Have them share which resources they used to support their learning.

Appendix

Materials included in the electronic folder that support this lesson are:

- Fraction Bar Refresher
- Fraction Bar Refresher Teacher Key
- Philanthropy Tasks Worksheet
- Task 2 Answer Key
- Strategy Mat
- Student Giving Worksheet

Activity 1

Launch Into Tribal Philanthropy

Time: 25 minutes

Ask students if they have ever decided to share or give away something they really liked and cared about (for example, food, money, clothing, toys, books, bikes). Have students turn to a shoulder partner to give an example of what they shared and how it made them feel (30 seconds).

Ask students to raise their hand if they have ever heard the words “philanthropy” or “potlatch.” Provide students with the definition of each term, as well as a sample sentence and example for each. Have students turn to their partner and restate each term, provide additional examples, and use each term in a meaningful sentence. Have each pair of students share one example with the whole class.

Say:

In this lesson we’re going to be using mathematical operations to learn more about philanthropy in Oregon and specifically the philanthropy of Native American tribes. Several tribes in Oregon engage in what is called the spirit of potlatch. As you learned from the definition of the word, this is a way to share wealth, so that a whole community can be healthy and well cared for.

Some tribes have big gatherings each year in which they share food and resources with the local community, much as their tribal ancestors did. But tribes also engage in a more modern form of potlatch—one that fits the definition of philanthropy. Tribes create charitable organizations called foundations or funds. These foundations give money, time, resources, scholarships, and more to those in their community who are in need or who would otherwise not have a specific opportunity, such as the opportunity to attend a summer camp or to go to college or buy a house. Sometimes the foundations give money to other good causes that already exist.

Activity 1 (Continued)

For example, the Confederated Tribes of Siletz Indians has the Siletz Tribal Charitable Contribution Fund, which allows people to apply for funding to support work across 11 counties in Oregon in 12 categories, such as health care, the arts, and housing.

The Confederated Tribes of Grand Ronde has the Spirit Mountain Community Fund, which has fulfilled 2,839 grant requests worth more than \$83 million.¹ These grants have supported everything from clean water efforts to youth dance programs.

Say:

Right now, we're going to engage in an activity that will help us think more about how Native foundations provide money and support to good causes. We've been focusing on fractions and how we can combine or take apart separate fractions as part of a whole set. For this activity, you'll work in groups of four and use the strategy mat to think, plan, and solve independently, with help from your teammates if you need it, then come together as a group to share a single solution.

Distribute Philanthropy Tasks Worksheet and a strategy mat to each group.

Say:

At the end of this unit, we're going to plan how to engage in philanthropic acts based on a specific amount of funding that you have available. You're going to decide which projects will receive funding, and you're going to use a fraction model to show how the funds are distributed.

To get started, let's look at what tribes in Oregon do. Look at the table at the top of your task sheet. Before we do anything with numbers, we need to figure out what the information is and what types of questions we—as good mathematicians—are curious about. I want to be able to use this information to solve those fascinating questions. Take a minute with your team to discuss what you see and then come up with a few questions. Then we'll go around the room and hear your

¹ As of March 2020. Source: <https://www.thecommunityfund.com/>

Activity 1 *(Continued)*

questions. Some might be very easy to solve using this information, while others might require more time and energy.

Allow students time to organize their thoughts and generate questions. As you call on the teams, ask each one to share a question that has not already been given. Accept all questions that are connected to the information provided in the table and math. Remind students that generating questions helps engage our curiosity, even if we do not get to solve them all. Guide students to think about how fractions—or things being split into equal parts—can be considered. Questions may include:

- How much money was given out in total?
- How long has a foundation or fund been engaging in philanthropy? How does that compare to another foundation or fund and how does it impact the total amount given?
- Which organization gives out the most money each year?
- What is the average amount of money given out each year?
- How many projects in total were funded?
- What is half the amount one fund gave?
- Out of this fund [pick an example] how much is each fifth of the total amount?

Be sure to celebrate all questions and make note of possible extension activities.

Say:

Great mathematicians, like you, have come up with some great questions. I'm curious about this question that you see on your task set. I know there are a variety of ways I can separate out a whole unit into equal parts. In this case, we're looking at the amount of money the Coquille Tribal Community Fund gave. Using your mat, each team member is going to spend time completing this task. You will need to find at least five ways to divide the whole amount into equal fractional parts and



Activity 1 *(Continued)*

then determine how much each part would be worth. Then, as a team, you need to decide which five solutions you want to share with the whole class. You will have to explain how you know each part is equal and how all the parts make up the whole. You may have to share a solution that one of your team members came up with, so make sure that everyone on the team can explain all five solutions.

Monitor students' independent and group thinking. After student groups have chosen five solutions and justified their thinking, call on individuals within each team to share a solution and process. Students can also participate in Give One, Get One, Move On, in which they walk to a new member from another team, share their solution and process, listen to that person's solution and process, then move on to a new classmate not in their original group. It is important for students to understand there are a variety of ways to break a unit into fractional parts of equal value.

Debrief with students by asking: *What information did you use to begin to tackle the task? How did you choose where to start the task? Did you make errors? What did you learn from them?*

Activity 2

Explore Tribal Philanthropy

Time: 25 minutes

Students may either use fraction bars or fraction circle manipulatives, rulers, or straight edge supports to create a fraction model. Remind students that there are a variety of ways a fraction can be represented while also ensuring that all portions are equal and that together they add up to the total sum. They will use the information from the chart to answer another mathematical task involving a sum of money and fractions with unlike denominators to create a fraction model.

Say:

We're going to explore another math question related to our chart on tribal philanthropy. Let's look at this and figure out what we already know and how we can use that knowledge to solve this task. On the chart you'll notice it says "more than," so we know this \$12,000,000 isn't the exact amount. The Wildhorse Foundation has given various amounts over the years, but for this task we need to pick a specific number. Just know that this information isn't exactly how the foundation divides its funding and support.

Have students independently read and consider facts and applications from the task, then have them share with a partner. Call on partners to share. Some statements may be:

- \$12,000,000 is one unit and that unit can be divided into equal parts.
- I can make \$12,000,000 seem like an easier number by saying \$12, if I add the zeros later.
- The Wildhorse Foundation focused its giving in six areas.
- Each of these areas had different fractions.
- The same amount of money went to public safety and the arts (health and the environment/education and cultural activities).

Activity 2 (Continued)

- More money went to education and cultural activities (the least amount was spent on public safety and the arts).
- $\frac{1}{6}$ is the same as $\frac{2}{12}$ (and other equivalent fractions).

Say:

We know some great information, and we sometimes just need a place to start. So, think for a minute, then turn to your partner and share some ideas about how you might begin to approach this problem.

Allow students time to think and share, then call on a few students to share how they might begin. This may help students who have difficulty identifying an entry point. Once students have shared a few entry points, allow pairs to begin to tackle the task and answer the question: “What is tribal philanthropy and why is it important?” Student pairs must feel confident about sharing their solution and process.

After student pairs have solved the problem and are prepared to explain their process, give them the answer in both Fraction Bar and Fraction Circle form. If they came up with a different solution, ask them to consider where in their thinking they may have made an error. Have different student pairs display their solution and process for the whole class. Remind them that while the solutions may be the same, it is the problem-solving process that is most important.

Activity 3

Extend Student Thinking About Philanthropy

Time: 25 minutes

Say:

Native American foundations are among the largest philanthropic organizations in Oregon. Philanthropy is an important value to Native people and is deeply rooted in their cultural traditions. Each Native foundation has certain areas in which they focus their philanthropic efforts, and these choices reflect their tribal values. Think about how you might want to distribute funding if you oversaw a similar foundation. Maybe you would want to make sure that everyone has books available and can read well. Or maybe you would want to provide shelter to animals. Maybe you would want to make sure people have enough to eat and clean water to drink.

Think about the top five things you care about. This is what we mean by values—you place value on these things. You care deeply about them. Of course, when we speak of our values we mean much more than just monetary value, but sometimes you also have to make financial choices based on your values. This is the case with Native foundations: The members who serve on the foundation must decide how they will distribute the foundation's money based on how each cause aligns with the Tribe's values.

Distribute task set 3 in the Philanthropy Tasks Worksheet and the Student Giving Worksheet.

Say:

In this task you are serving on a foundation that must decide how to distribute funding. The foundation has \$3,000 total to give. On your worksheet is a list of projects that are applying for funding. Based on your list of the top five things you care about, decide which projects you are going to fund and how much funding each one will receive. You must choose at least four projects to give money to. You must also choose at least two different fraction denominators.

Activity 2 (Continued)

I want you challenge yourselves, so don't just pick four projects and divide the money into fourths. You can choose more than four projects, but no more than six. Remember, you have \$3,000 total. You must give away all the money, but you cannot give away more than the \$3,000 total. You must use a fraction representation to show how the funding was evenly divided.

Allow time for students to work. Monitor student work and answer questions as they arise.

When students have completed the task and documented their processes, have them compare their stories: *What projects did they fund? How much did they give each project? Why? How did these choices reflect their values?* While they are sharing their stories, have each partner group explain the specific fraction and dollar amount sums they came up with.