



# Letter to a representative

Citizen Scientists for the Internet  
Lesson 4 of 4

## Overview

The power of citizen scientists lies in the fact that they can have very close and unique insights into problems deeply related to their communities. A citizen scientist can use his knowledge to advocate issues that affect his community and help bring positive changes.

In this lesson, students will learn how to advocate for their communities as citizen scientists using their knowledge of the digital divide and the data gathered from the Internet measurements.



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## Standards

Standards are based on fifth-grade learning standards unless otherwise specified.

### Computer Science

CSTA 1B-NI-04  
AZ 5.NI.NCO.1  
CSTA 1B-IC-18

CSTA Standards: <https://www.csteachers.org/page/standards>  
AZ Computer Science:  
[https://www.azed.gov/sites/default/files/2018/10/Arizona%20Computer%20Science%20Standards\\_3\\_5\\_Final%2006.24.2019.pdf?id=5bc90a611dcb2510102f55b8](https://www.azed.gov/sites/default/files/2018/10/Arizona%20Computer%20Science%20Standards_3_5_Final%2006.24.2019.pdf?id=5bc90a611dcb2510102f55b8)

### Social Justice

AC.3-5.19  
AC.3-5.20

Learning for Justice:  
<https://www.learningforjustice.org/sites/default/files/2021-11/LFJ-2111-Social-Justice-Standards-Anti-bias-framework-November-2021-11172021.pdf>

### English Language Arts

AZ 5.W.1  
AZ 5.W.4  
AZ 5.W.5  
AZ 5.W.6  
AZ 5.W.8  
AZ 5.W.10

AZ English Language Arts:  
<https://www.azed.gov/sites/default/files/2016/12/5th%20Grade%20ELA%202016%20Final.pdf?id=585aa90eaadebe12481b8443>

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## Math

NA

AZ Math:

[https://www.azed.gov/sites/default/files/2016/12/Math%20Final%2005Fifth%20Grade%20Standards%204\\_2\\_2018.pdf?id=58546f66aadebe13008c1a31](https://www.azed.gov/sites/default/files/2016/12/Math%20Final%2005Fifth%20Grade%20Standards%204_2_2018.pdf?id=58546f66aadebe13008c1a31)

## Social Science

AZ 5.C3.1  
AZ 5.C4.1  
AZ 5.C4.2  
AZ 5.SP3.3  
AZ 5.SP3.6  
AZ 5.SP3.7

AZ History and Social Studies:

<https://www.azed.gov/sites/default/files/2018/10/3-5%20Grade%20Band%20Standards%20at%20a%20Glance%206.10.19.pdf?id=5bd772a61dcb250b94e916ef>

## Learning Outcomes

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

- Explain how they can advocate for community issues as citizen scientists
- Describe how new legislations are made to solve various issues
- Express their concerns about community issues to appropriate legislative representatives

## Background

### Big Ideas

- Citizen scientists can be heroes for their community by giving of their time and talent
- We can use our measurement findings to advocate for our community

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## Pre-Lesson Prep for Teachers

Watch <https://www.youtube.com/watch?v=w0BYMqONzgM>

Watch <https://www.youtubekids.com/watch?v=OvwIRTYvU8o>

## Lesson Plan

Total time: **50 minutes (Part-1: 25 minutes, Part-2: 25 minutes)**

Part-1			
Time	Teacher is...	Students are...	Materials needed
5 minutes	Engaging students in a talking circle  Some questions to get started <input type="checkbox"/> <i>How can citizen scientists use their measurements to help their community?</i>	Listening to the teacher, asking questions, answering questions	A space for students to sit in a circle
5 minutes	Showing students the video on philanthropy and advocacy. At the end of the video, there is a specific discussion on how research and measurement can be used to help advocate and educate	Watching the video	A space for students to sit in a circle  Projector to show video

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5 minutes	<p>Debriefing with students about different ways that they want to advocate for their community using the measurements that they have been collecting</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>What are some ways you would like to advocate for your community using the measurements you have collected?</i></li> <li><input type="checkbox"/> <i>Who are people you could share your measurement information with that might be able to help improve the digital divide in Flagstaff? Or on the reservation?</i></li> </ul>	Answering questions	A space for students to sit in a circle
10 minutes	<p>Provide students with a Plan for Action Worksheet to help them think about how they want to advocate and who they want to advocate for with their Internet measurements</p> <p>When students are finished, collect the worksheets.</p>	Answering questions on worksheet	Plan for Action Worksheet

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Part-2			
Time	Teacher is...	Students are...	Materials needed
5 minutes	<p>Engaging students in a talking circle</p> <p>Some questions to get started</p> <p><input type="checkbox"/> <i>How can we take action for our communities to have better Internet?</i> Possible answer: making new laws, building new data links</p>	Listening to the teacher, asking questions, answering questions	A space for students to sit in a circle
5 minutes	<p>Showing students the video on how new laws are made</p> <p><a href="https://www.youtubekids.com/watch?v=OvwIRTYvU8o">https://www.youtubekids.com/watch?v=OvwIRTYvU8o</a></p>	Watching the video	<p>A space for students to sit in a circle</p> <p>Projector to show video</p>
5 minutes	<p>Debriefing with students about how laws are made.</p> <p>Let students know that even though the laws are made by congress, we have local congressional representatives whose job is to listen to the people living in their area in order to come up with ideas for new laws.</p>	Answering questions	A space for students to sit in a circle

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	<p>One way we can help congress come up with new laws is by educating them about issues that impact our community and using evidence to support our message.</p> <p>Tell students that they will be writing a letter to their congressional representative, Representative Tom O'Halleran, who represents Coconino County, Navajo Nation, and the Hopi Reservation and helps write laws that will be helpful to people who live in those places.</p>		
<p>10 minutes</p>	<p>Tell students they will be writing a letter to Tom O'Halleran to advocate for their community based on the measurements they collected and what they have learned about the Internet and the digital divide.</p> <p>You can provide them with a letter template on their iPad or as a worksheet. Let's plan to modify it to fit your classroom.</p>	<p>Answering questions on worksheet</p>	<p>Plan for Action Worksheet</p>

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## Plan for Action Worksheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Who** do you want to advocate for with your Internet measurements?

**What** message do you want to share about the Internet and who do you want to share it with?

**What** evidence do you have that could support your message?

**Why** is it important for there to be a change?



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May 20, 2022

[NAME]  
W. F. Killip Elementary School  
2300 E 6th Ave.  
Flagstaff, AZ 86004

The Honorable Tom O'Halleran  
U.S. House of Representatives  
Washington, DC 20515

Dear Representative O'Halleran,

I am writing to you as a fifth grade constituent from Killip Elementary School in Flagstaff, AZ.

I am writing to tell you about the digital divide in our community. In our class, we learned that the digital divide is

\_\_\_\_\_.

As a class, we collected measurements of the Internet to compare to the FCC Broadband map and we found that

\_\_\_\_\_.

It is important to fix the digital divide in our community because \_\_\_\_\_.

One example of how people in my community are impacted by the digital divide is

\_\_\_\_\_.

I hope that you will address this important issue by \_\_\_\_\_.

Sincerely,

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## Assessment Ideas

### Quiz Questions and Answers

Use these questions in whatever format you use in your class to check for understanding, including Kahoot, iClicker, or Google Classroom quizzes.

- Q:** How can a citizen scientist contribute to his community?
- A. By collecting data and investigating issues related to his community
  - B. Talking about community-related issues with various community representatives (For example: community leaders, state representatives, congressional representatives, etc.)
  - C. Raising public awareness using their citizen science knowledge
  - D. All of the above
  - E. None of the above

**Ans:** Option D

- Q:** Who can make new laws to help your community fight the digital divide?
- A. Your local congressional representative
  - B. Your favorite superhero
  - C. None of the above

### Reflection Questions

You can use these in whatever format you use in your class for reflection, including science journals, Near Pods, exit tickets, or in Exploratory Talking Circles.