

DESIGN CHALLENGE - Wangari Maathai

OVERVIEW

In this challenge, students will work to identify an issue about their community that they care about and want to improve. Through exploring the issue and brainstorming solutions, they'll identify *one* small thing they can do that will have a big impact, and commit to doing the small thing for 2 weeks in order to track progress, and reflect on the change that they created.

Students will use the design process and to design, implement, and reflect on their actions. Feel free to tailor this experience to meet the needs and interests of your students, retaining following essential elements:

1. Students should identify a small, manageable action that they can reasonably do and repeat daily over the course of two weeks (or the duration of this design challenge.)
2. Students should follow the 5 steps in the design process to guide their design challenge.

What can this look like?

- Students can work individually, with a partner, or in a small group
- This design challenge can be done in the classroom, as part of an after school club or project, or a combination of at home and in-school work
- You can make this design challenge as small or large scale as you'd like, and complete it in a couple of weeks (dedicating one day to each of the stages of the design process below) or extend it to a month or semester.
- Steps in [the design process](#):
 - Step 1: Empathize
 - Step 2: Define the problem
 - Step 3: Ideate
 - Step 4: Prototype
 - Step 5: Test

(students should be encouraged to return to any of the above steps to continue problem solving and iterating until they've found an effective and sustainable way to take action)



Design Challenge: Small Change for Big Impact

Part 1

What is a Grassroots Movement?

A grassroots movement is an effort that starts small with the people in a given community who are trying to create change by implementing small but powerful actions. Grassroots movements and organizations use collective action from the local level to effect bigger change at a bigger scale.

Materials:

- Articles, videos, or other resources to provide students with examples of grassroots movements.

Steps:

1. Provide students with examples of Grassroots Movement and explain how small actions turned into something bigger and more powerful with a profound impact. Educators are encouraged to select grassroots movements that would be most aligned with their curriculum or students' interests. Sharing examples of youth-led grassroots movements will help encourage students and build confidence in their ability to create change.

Use any of the following grassroots campaigns as examples, or choose your own.

- [Buddy bench](#)
- [Meatless Monday](#)
- ["Play me I'm Yours"](#)
- [Before I die](#)
- [Lego Street Art](#)
- [Little Free Library](#)

Websites that highlight youth-led grassroots efforts:

- [Alliance for Youth Action](#)
- [Meddling Kids Movement](#)
- [DoSomething.org](#)

2. Share sample *strategies that can be used as part of grassroots movements:
 - Hosting local meetings or gatherings
 - Organizing demonstrations
 - Putting up posters to provide information or deliver a call to action
 - Talking with people on the street or walking door-to-door
 - Gathering signatures for petitions
 - Letter-writing, phone-calling, and emailing campaigns
 - Setting up information tables
 - Holding "get out the vote" activities, which include the practices of reminding people to vote and transporting them to polling locations
 - Using social networks to organize virtual communities

*Encourage students to brainstorm and add their ideas to this list of strategies!



3. Ask students to choose *one* of the examples you shared and break it down using a mind map template or online tool to explore the issue(s) the project tackles and how small actions helped create impact.

Teacher Resource:
[Mind Mapping websites](#)
[and apps for students](#)

Part 2

Design process step 1: Empathize

Once your students have identified an issue they want to address, but before they decide on the action they will take, guide them through the first step of the design process: Empathize.

Materials:

- Student worksheet: Step 1: Empathize
- Student worksheet: K-W-L chart

Steps:

1. Review the student worksheet for this step in the design process.
2. Ask students what they know and what they might not know about the issue they are trying to take action to change. This can be done in discussion, or using a simple [K-W-L chart](#) or other graphic organizer.
3. Using the questions or topics students identified as wanting to learn more about, have students spend time researching and taking notes about what they learn.
4. The goal in the Empathize step is for students to learn as much as they can about the issue they chose by getting as close as possible to the people or place(s) most affected by it. This type of “research” can take many forms, such as:
 - Field trips
 - Reading
 - Online research
 - Conducting or listening to interviews
 - Watching documentaries
 - Listening to podcasts
 - Exploring social media from trusted source.

Remind your students to take notes during this step in the design process, to record what they learn. They can do this in a notebook, on a computer, or by completing the “L” (“What Did I Learn”) column of a K-W-L chart.

Part 3

Design process step 2: Define the Problem

Once your students have spent time learning more in order to empathize with those most affected by the issue they chose, they should narrow down the “problem” to identify a specific and achievable piece of the problem that their small action will help change.



By the end of this step, the goal is that students have a specific and clear problem statement that will guide the rest of their Design Challenge.

Materials:

Student worksheet: Step 2: Define the Problem

Steps:

1. Review the student worksheet for this step in the design process.
2. In addition to the student worksheet, you may have students use any of the following additional strategies to help them define the problem and create their problem statement:
 - Peer discussion
 - Journaling
 - List making
 - Drawing
 - Idea mapping
 - Sharing possible actions with people affected by the problem (if possible) for feedback

Part 4

Design process step 3: Ideate

Now that your students have narrowed down a piece of the issue they want to act upon, and created a problem statement to guide them through this challenge, they are ready to have some fun coming up with lots of different ways to take a small action step!

Materials:

- Student Worksheet: Step 3: Ideate

Steps:

1. Review the student worksheet for this step in the design process.
2. As students ideate, and encourage them to be bold, creative, and unafraid of listing as many possible ideas as they have to complete this challenge. Let them dream big and go for quantity—the more ideas the better!
3. At the end of this step, have students choose and share the one “small action” they’ve decided to move forward with.

Part 5

Design process step 4: Prototype

In this stage of the design process, students create a plan for their action and try it out. The idea is to see if their action has the potential for impact, to get feedback and ideas on how to improve their impact, or even to scrap their plan all together and circle back to step 3 (Ideate) to continue brainstorming or choose a different action to try.

Materials:

- Student Worksheet: Step 4: Prototype



Steps:

1. Review the student worksheet for this step in the design process.
2. Have students using the following questions to create a plan for carrying out their action:
 - When will I carry out this action?
 - Where will I carry out this action?
 - Will I need help from my teachers, parents, or peers?
 - Do I need any materials or resources to carry out my action?

Part 5

Design process step 5: Test

Once your students have a basic prototype, it's time to test it to see if it has the potential for impact. For this design challenge, students should carry out their "one small act" daily for two weeks, and record their observations.

In addition to their own observations, students should collect feedback from other people or the community to learn how their action is creating change from others' perspectives.

Materials:

- Student Worksheet: Step 5: Test
- Student Worksheet: Daily Observation Log

Steps:

1. Review the student worksheets for this step in the design process.
2. Explain that students will begin carrying out their "small action" every day for the next two weeks (or another predetermined frequency or period of time)
3. Together or in small groups, have students brainstorm a list of people they can ask for feedback, and questions they can ask those people to help measure the impact of their actions.

Part 6

Share & Reflect

It's time to celebrate your students' hard work and achievements. Consider having a class celebration where students or groups can share the story of the journey they took in this design challenge. Invite others to come and look, listen, and ask questions. Remind your students (and any invited audience) that this Design Challenge was not simply a "school project," but rather the same exact process designers, engineers, scientists, and many others use in the real world every day to develop solutions to complex challenges.



Teacher Resources

Teacher resources for Design Challenge:

- [Write a Problem Statement](#) (teacher and student resource)
- [Mind Mapping and Brainstorming Apps and Websites](#)
- [The Design Thinking Process](#)

