



Understanding of hazards in the context of place-based community resilience

Framing Environmental Issues and becoming a climate leader for mental empowerment



Visioning Possibility with Flood - Teacher Guide

Activity Summary

In this lesson, students will find inspiration from innovative solutions, envisioning a hopeful future and their role in it.

Instructional Overview	
Grade Level	3rd Grade - High School
Instructional Time	30-60 minutes
Learning Objective	- To envision a resilient and hopeful future. - To envision one's role in a resilient future.
Social-Emotional Learning Focus	- Identifying solutions for social problems - Reflecting on one's role to promote personal, family, and community well-being - Evaluating personal, interpersonal, community, and institutional impacts (CASEL Core Competencies: Responsible Decision-Making)
Materials	☐ Computers and internet access to help inspire solutions
Opportunities for Bringing Experts into the Classroom	Invite a counselor to come lead this lesson and support students with any difficult feelings they might have about floods
Sources and Research	Emotional Resiliency in the Era of Climate Change: A Clinician's Guide by Leslie Davenport, Jessica Kingsley Publishers, 2017. CLEAN Climate Mental Health Pages .

Instructional Process

The following guided visualization is designed to be a grounding exercise and should be suitable for all audiences, even those who have recently experienced a flood. However, if you would like an alternative or supplemental activity, students can read about the mythology and folklore relating to willows, or read about willow trees' adaptations and use in ecological restoration here:

- [Willow mythology and folklore](#)
- [Novel ways with willow in flood management | Forestry Journal](#)
- [Versatile and sustainable: Here are five ways willow is used in ecological restoration](#)



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1. Lead students through a guided visualization (script in green):

Ask students to spread around the room with enough distance between them that they cannot touch. If you have the ability to go outside, you may do so, giving students the option to take their shoes off.

Welcome. Today we are doing a visualization exercise. Imagine you are a tiny willow seed that has floated downriver and found a safe spot at the edge of a pool. Take a moment to spread out in the room so you can reach your arms out wide without touching anyone. You need lots of space to grow in all directions, with your roots stretching far and wide.

As you settle into your spot in the room, pick a position that feels comfortable for you. Now, stretch your arms and body up toward the sun as if you're growing into a big tree. Imagine getting nutrients from the soil below and energy from the sun above. Let's take a few big breaths together as a class.

Breathe in for three seconds and out for three seconds, three times.

Pause for a moment.

Imagine you are a willow tree. Stand tall and stretch your back, reaching up to the sky for sunlight. Stretch your arms wide and let them sway with the wind; these are your leafy branches that move gracefully with the wind. Feel your feet or body grounded, imagining your roots spreading out into the earth in all directions.

Every year, you grow by using energy from the sun. You take in carbon dioxide and release fresh oxygen through a process called photosynthesis. At night, you use some of the sugars you stored in your sap to grow, giving off a little carbon dioxide. Then, during the day, you make a lot more oxygen.

You work hard to store carbon in your branches, leaves, trunk, and roots. The extra sugars you create help the fungi living with your roots, giving you the nutrients you need from deep in the soil.

Close your eyes and take a deep breath in through your nose, and hold for three seconds. Exhale through your mouth and release any tension in your body. Keep your eyes closed and continue to breathe fully but slowly.



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You live in a flood plain near the bank of a river. Over the years, the river has risen and fallen many times. Your strong and widespread roots hold tight to the earth around you. As the water rises, you respond by growing extra roots from your trunk and branches to make sure you are getting the oxygen you need. If some of your branches break off, they float downstream and grow roots and shoots where they land.

You can see signs of your life in the way your trunk leans and in the mud that lines it, telling the story of your journey. Each time the river floods, you spread your seeds and pass on your DNA for the future. You take another deep breath, feeling happy and safe in your important role in nature's cycle.

Take a deep breath in through your nose, filling your lungs and holding for three seconds. Exhale strongly through your mouth and let the breath flow, as a river. Open your eyes.

A willow tree is adapted to survive and thrive in environments with frequent flooding. In folklore, the tree is often seen as a symbol of human resilience in the face of adversity, and, because of its ability to propagate and regrow, it often represents renewal. Take a moment to imagine what it might look like for us, as humans, to withstand and recover from difficult conditions like floods with the adaptability and wisdom of a tree. Think of three ways we might better prepare our communities to live with floods, and be ready to share with a partner in one minute

Take some time afterward to pause and reflect on ideas generated by students.

1. Engage students by sharing or exploring some of the innovative and interesting ways that mitigate floods below:
 - [7 inventions and ideas to stop flooding and mitigate its effects - Interesting Engineering](#)
 - [Facing floods: What the world can learn from Bangladesh's climate solutions](#)
 - [How 'Daylighting' Buried Waterways Is Revitalizing Cities Across America | Innovation | Smithsonian Magazine](#)
 - [Cities Around the Globe Are Eagerly Importing a Dutch Speciality—Flood Prevention | Innovation | Smithsonian Magazine](#)
 - [Room for the River Explained | Dutch Water Sector](#)
 - [The nation learning to embrace flooding](#)
 - [Virginia Smith: How we could better predict and stop floods | TED Talk](#)



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2. Ask students to brainstorm their own innovative or unconventional ideas about how to address floods. The sky is the limit! Encourage innovation and ingenuity. Have students make their own drawings of what their innovations look like, and share them with the rest of the class.

Closure

Ask students to reflect on the impacts that their invention could have on their community and the environment. What current or future role could they have in their community to mitigate the impacts of floods?