

LESSON

#PlanetProtector

Grade Levels: 3-12

Duration: 120 min

Students work together to create a Public Service Announcement (PSA) which educates others about protecting our planet.



Outline

Frame the Activity	10 min total
Activate Prior Knowledge	10 min
Creating the PSA	60 min total
Brainstorm Time	15 min
Design	45 min
Sharing the PSA	50 min total
PSA Showcase	40 min
Debrief	10 min



Lab Connections:

Down the Drain
Sustainable Cities

Grade Levels: 3-8

Duration: 120 min

Concepts/Skills

Presentation skills, research, environmental care and action

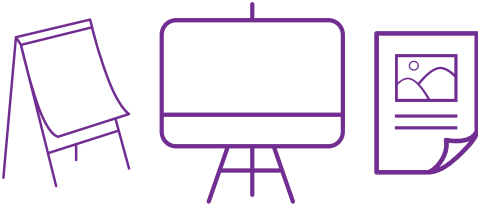
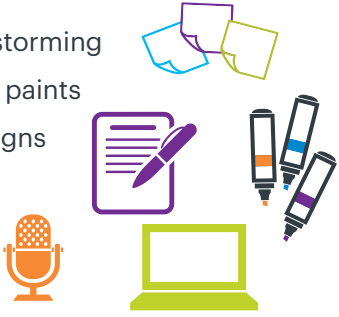
Objectives

Students will:

- Analyze existing PSAs to determine the most effective attributes.
- Apply their understanding of effective PSAs to brainstorm their own.
- Create and present a PSA as a team and receive feedback.

Materials and Preparation

Materials

For the classroom:	Each team of 3-5 students will need:
<ul style="list-style-type: none">□ Whiteboard or poster board□ <i>Optional:</i> Projector and screen if there are digital PSAs made or digital samples will be shown 	<p>Note: Materials used may vary depending on that kind of PSA students decide to make:</p> <ul style="list-style-type: none">□ Sticky notes or notepads for brainstorming□ Pens, pencils, crayons, markers, or paints□ Paper or poster board for final designs□ A way to record video or audio□ Online drawing program□ Online video editing program 

Preparation

1. Review different formats for PSAs and decide on 2-3 for students to choose from. *For example,* you may give students the option to create a poster, brochure, or social media campaign.
2. Collect a few PSA examples to share with students, preferably in the formats that will be available for teams to make. (See [Background Information](#) for a few samples.)
 - Prepare to share the sample PSAs with students.
3. Gather materials needed to brainstorm and create PSAs in the chosen formats.
 - If students are making digital PSAs, there will need to be equipment to design, save, and share them.
4. Plan to have students work in groups of 3-5.

Note: Depending on the time available this lesson can be divided into multiple sessions. With a short timeframe, have students do rapid brainstorming and design. With a longer amount of time, they can revise and polish their PSAs to present to a larger audience.

Sustainability at The Tech Interactive

- The [Solve for Earth](#) exhibition at The Tech Interactive engages visitors with many climate issues including water and sustainable cities.
 - **Down the Drain:** Engage students in understanding the problems facing local waterways and how to protect them. Learn more at [Down the Drain](#).
 - **Sustainable Cities:** Consider the challenges of developing a sustainable city.
- This lab pairs well with The Tech's [Down the Drain Lab](#). Students who attended the lab and visited The Tech Interactive on a field trip can use what they learned to refine their PSA messaging.











Background Information

The Earth is our source of life, and it's everyone's responsibility to keep it clean and healthy. Youth are especially concerned about climate issues and are becoming more invested in communicating and sharing about them. There are many ways for youth to learn more about climate issues and get involved. One way educators can help is to give students the opportunity to research, share out, and create actionable steps for others on topics they feel passionate about.

Public Service Announcements

What makes a good PSA?

A public service announcement, or PSA, is a message that educates people about a social issue and promotes attitude or behavior change. PSAs are usually about something that you care strongly about. They can be:

 Posters	 Brochures	 Radio/TV advertisements	 Videos
 Social media campaigns	 Community projects	 Skits or performances	 Any other ideas you come up with!

PSAs should be:

- Eye-catching but informative — don't bore the audience!
- Focused on only the most important information. PSA's are usually short — people are bombarded by information every day, so you have to get their attention quickly.
- Aimed at a certain audience — is your PSA for teens? Farmers? Residents of a certain area? What language and graphics will best appeal to them?
- Accurate — Do research to make sure your information is true.
- Focused on behavior that can be changed. What do you want your audience to do — or stop doing?
- Easy to remember. PSA's often include a cool catchphrase, something everyone can quickly understand.

For example:

- For shelter-in-place: "Stay home. Save lives."
- "Click It or Ticket" for seatbelts

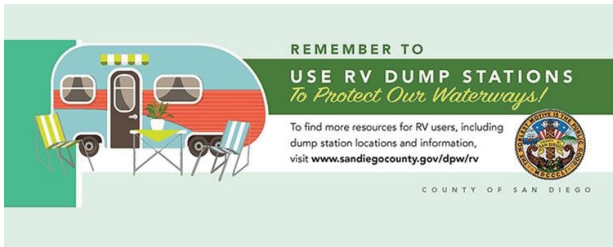
PSAs can be as simple or as detailed as you want them to be - as long as they get your message across. You can concentrate on one single thing you want to change or the bigger picture. What is important is to let people know that their actions can make a difference!

Sample PSAs

There are many great examples of different types of PSAs on the internet. Pick which type you feel more comfortable discussing and look for examples online.

For example, here are some PSAs related to watersheds and the environment:

Here's a **poster** for a group of very specific users — RV owners.



Social media is a great tool to highlight issues and encourage action. The #trashtag challenge post from March 2019 was shared on Facebook 323,000 times and had over 25,000 Instagram posts in less than a week, with people all over the world joining in and clearing their local beaches, parks, and communities of trash.

Public art is a great way of getting attention for your cause. Lots of communities around the country have storm drain mural projects to encourage keeping them clear of trash.



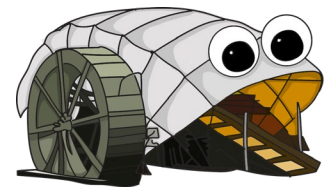
While we would not recommend painting the storm drains directly, you can always design a mural on a piece of paper, or online. Why not submit it to your local water board once finished and explain why you think it would be a good idea to have similar murals in your town or city?

Videos can provide a relatable character for the audience to follow and allow for a range of content to be explored. The **#CleanSeas Break-Up PSA** on single use plastics uses unexpected comedy to help viewers understand the problem while also showcasing reasonable solutions.

Memorable characters can appear in any kind of PSA.

Woodsy Owl has been helping children appreciate and look after the environment since the 1970s.

Baltimore's Mr. Trash Wheel even has his own social media accounts!



For more PSAs in different types of formats check out:

- **Browse Campaigns**, Ad Council website.
- **Public Service Announcements** - PSAs, United Nations website.

Frame the Activity

Activate Prior Knowledge (10 min)

1. Share a few of the sample PSAs with students to help them consider their goals.
2. Lead a whole class discussion around qualities of effective PSAs. As ideas are brought up, create a list on a whiteboard or poster board so groups can reference it during their work time. Use the [Background Information](#) to fill in any gaps.
 - What do you notice about these PSAs?
 - What do these PSAs have in common? Differences?
 - What are some things you think make them effective?



Lab Connection

In the [Down the Drain Lab](#) students focused on learning about watersheds and designed their storm drains for a particular area's needs. To continue the connection in Planet Protectors, have teams consider how they could design a PSA that is focused on protecting the same area that they designed for in the lab.

The areas include:

- Cities
- Landfill
- Factories
- Schools
- Farms
- Parks
- Homes
- Recreational Areas

Some questions to guide team discussions could include:

- What was the biggest source of pollution for your area?
- Who lives in or visits the area? (think about animal species as well)
- What kind of PSA would fit best in the environment?

3. Introduce the goal of the PSA students will make today:

The Earth is our source of life, and it's everyone's responsibility to keep it clean and healthy. One way to do this is to keep trash and pollutants out of our oceans and rivers. How can you create a PSA that will inspire your friends and families, your school, your community, or even your country to make changes that will better the environment?

For a wider variety of PSA presentations:

- Give multiple topics for student teams to choose from. *For example:* recycling, food waste, or water usage
- Have teams choose a climate issue they feel passionate about.
- Have teams decide the best format for their audience and message.

Creating the PSA



Brainstorm (15 min)

1. Place students in groups of 3-5 students.
2. Use your preferred brainstorm method to help teams decide key details for their PSA like a slogan, characters, and delivery method. Questions to spark brainstorming:
 - *What format will the PSA be?*
 - *Will you have a character and slogan?*
 - *Who is the PSA for?*



Tip: If your class is new to brainstorming check out our [Explore Design Challenge Learning](#) page for our [Tech Tip on brainstorming](#).



Adaptation for Advanced Engineers

- Provide students time to research PSAs to explore the different calls to action that a PSA can make.
- A call to action is what the PSA is asking the audience to do. This could include giving the audience more information on an issue, asking them to make a specific behavior change, or encouraging them to pass a message along to others.
- Questions to spark research could include:
 - *Are some calls to action more common than others?*
 - *Are some calls to action more effective or inspiring than others?*
 - *Are some calls to actions more fitting for certain PSA formats?*



Work Time (45 min)

1. Give students time to work in their groups to create their PSAs. This time can be adjusted as needed.
2. Questions to ask while students are working:
 - *What methods are you using to catch the audience's attention?*
 - *How will you make sure your message is clear and understandable?*
 - *Do you think your audience will relate to your message?*
 - *Where will your audience be able to see this PSA (i.e., is it digital or physical, where would it be located, etc.)*



Sharing the PSA

PSA Showcase (40 min)

1. Have a PSA showcase with the class. Depending on the method of creation this could look like a poster tour, individual presentations, pair and share between teams, or something else. Plan on spending about 5-8 minutes per team.
2. Share the process for the **Listen and Help Feedback Protocol**.

Listen and Help

	Team Presenting	Audience
3 min	Present their PSA.	Silently listen. Take notes.
3 min	Respond to clarifying questions.	Ask clarifying questions.
2 min	Silently listen. Take notes.	Provide feedback.

- Explain that the goal for this activity is to get thoughtful and critical feedback from friends.
 - Encourage learners to focus on both strengths and questions in their feedback. If using simple sentence frames, introduce them at this time. *For example:* "I like..." or "I wonder..."
3. Act as timekeeper for the class during the presentations and give warnings as needed to switch to the next step or team.



Tip: See The Tech's [Lesson and Activity resources](#) for our Peer Feedback Protocol and more suggestions on facilitating this process, including Distance Learning adaptations.



Debrief (10 min)

1. Bring the class back together and discuss how the PSA activity went overall. Have teams discuss among themselves then pair and share. Debrief questions could include:
 - *What was your favorite part of making your PSA?*
 - *Was there a part of this process that you would want to do differently if you made another PSA?*
 - *What part of another team's PSA did you feel was very effective? Why?*



Career Connection: Civil Engineering, Water Industry

Civil engineering is a type of engineering that involves the construction and maintenance of infrastructure that is needed to keep towns and cities functioning. In Santa Clara, civil engineers at [Valley Water](#) ensure their communities receive clean water and are protected from floods by managing water infrastructure, designing and overseeing water plants, and monitoring the health of waterways.

To learn more about the science behind water and careers in the industry check out the resources below.

- **Research:** Educators can help younger students learn more about water and the water industry through [Teacher Resources](#) at the Santa Clara Valley Water website, like [“Where Your Water Comes From,”](#) YouTube (2:35 min) that highlights how water reaches communities.
- **Try it:** High school students can get involved with local communities, participate in civic leadership, and learn about careers in the water industry through the [Valley Water Youth Commission](#), Santa Clara Valley Water website.



Corinne Okada Community BioArtist and STEAM Educator

Interested in what community art looks like in real life? Meet Corinne Okada, an artist and educator who focuses on public art projects that help connect community culture and history with public facing art installations and hands-on workshops. [BioQuilts](#) was a community workshop focused on creating quilt squares from bio-materials that allowed participants to explore bio-materials and themselves. One place Corinne’s work can be spotted is at The Tech! Corinne designed a [mycelium chandelier](#) that hangs in the BioTinkering area and created workshops and guides to help others create DIY mycelium creations.

In her work Corinne uses hands-on skills such as 3D design, 3D printing, and material sculpting, as well as innovator mindsets like supporting perseverance and curiosity in others and herself. One of the most important parts of Corinne’s work is working with community members. She feels it is key to include collaboration, iteration, and playfulness in her workshops and experiences.

To learn more about Corinne’s work and careers in BioArt and education check out the resources below.



- **Research:** Learn more about Corinne’s journey to support connections between community identity and representations of culture in public art. [“Where Are We? Who Are We? Finding Our Roots & Identity in Public Art”](#) or see other articles on her website.
- **Get Involved:** There are many ways to get started with community bio-art and education. Corinne recommends checking out biology makerspaces such as [bioCurious](#) or [Counter Culture Labs](#). These are spaces where people explore different topics in biology and making in a community based space. You could even check out The Tech Interactive’s [BioTinkering Lab](#) space in person or online.
- **Try it:** Jump in! Try learning how to design using free CAD resources on [Udemy](#) or learn about a bio-organism like cabbage. Maybe even combine them somehow!

Standards Connections

Next Generation Science Standards

Grade	Performance Expectation	Description
6-8	MS-ESS3-4	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
9-12	HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
Related Standards		4-ESS3-1, 5-ESS3-1, HS-ESS3-1
Science and Engineering Practices		Engaging in Argument from Evidence Obtaining, Evaluating, and Communicating Information
Cross Cutting Concepts		Cause and Effect

Common Core State Standards: English Language Arts

Grade	Performance Expectation	Description
3-8	CCSS.ELA-LITERACY.SL.[grade].1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on [grade] topics, texts, and issues, building on others' ideas and expressing their own clearly.
3-8	CCSS.ELA-LITERACY.SL.[grade].5	...add visual displays when appropriate to emphasize or enhance certain facts or details.
3-5	CCSS.ELA-LITERACY.SL.[grade].4	Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details <ul style="list-style-type: none"> [to support main ideas or themes Grade 4, 5] Speaking clearly at an understandable pace.
6-8	CCSS.ELA-LITERACY.SL.[grade].4	Present claims and findings: <ul style="list-style-type: none"> [sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes Grade 6] [emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples Grade 7] [emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details Grade 8] Use appropriate eye contact, adequate volume, and clear pronunciation.
9-12	CCSS.ELA-LITERACY.SL.[grade].4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task. [Grade 9-10] Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. [Grade 11-12]