



Photographs: Heidi Paul

Pledging for Change

High school students modify one personal action to help the environment

By **Heidi Paul**

HOW OFTEN HAVE WE HEARD that one person can change the world? Mahatma Gandhi said to “Be the change that you wish to see in the world,” but realistically, how can one person make a difference? With over 7 billion people on the planet, won’t one change in one person’s lifestyle, be just a drop in the bucket?

Inspiring students to recognize the interconnection between their actions and effects on the rest of the world and society can be a monumental task as it requires individual sacrifice. The *Student Pledge of Sustainable Change (SPSC)* lesson plan is a way to stimulate students to make a pledge changing one action to something more sustainable. Ask high school students to choose a personal habit related to sustainability in which they think they would be able to make a small change. Then ask them to research how implementing this change over time will collectively make a marked difference in the world.

High school learners are more engaged when the learning is experiential and integral to their own lives. By selecting a sustainable action which *they* have control over and

would like to change, students will be more likely to follow through with the change in behavior. Motivating a student to change an action that they have control over will encourage them to apply lessons in sustainability and will ultimately benefit themselves and society.

Effective project-based lessons should include behavioral, emotional and cognitive strategies.¹ The behavioral aspect applies to this project as the students actively participate in personally chosen positive behaviors. The emotional aspect comes into play as the students demonstrate motivation to change their activity or lifestyle choice and positively benefit society as a whole. The cognitive aspect arises as they calculate the costs and benefits associated with that change of action, exhibiting awareness and responsibility for their newly proposed change in behavior.

Having students choose and implement their own projects allows for them to be active rather than passive learners, and recognize their personal responsibility in their community. When students make a pledge toward sustainability they hold a magnifying glass up to their choices and self-evaluate areas that can be improved. They become personally aware of their consumption and how acts of convenience affect resources.

This active component aligns student learning with Common Core standards as it integrates science with math, social studies and art. As a result, this lesson works well within the last few months of the school year, after the majority of core standards have been covered in Environmental Science. Students will have the ability to include multiple perspectives which will help contribute to starting points for action. In our experience, topics that were first covered in class and then become a part of student's personal pledges have included: waste, energy, food, water, air pollution, ecosystem dynamics and cycling of matter and elements.

Students recognize that there is no "away" since earth is a closed system. They understand that even though trash gets collected and substances go down drains, it is still here on the planet, just somewhere else. Many actions of our daily lives involve the short-term conveniences associated with disposables. By examining the effects of consumption, students will eliminate more of what goes "away" aiming toward long-term sustainability.

Math is utilized in calculating the daily effect of the student's change in sustainable action. The daily quantities may, for example, be pounds of carbon dioxide not being added to the atmosphere by taking the bus instead of a personal car, or daily monetary cost saved by using a reusable water bottle. The students will further extrapolate the monthly and yearly effects. As economics is often cited as reason for not forging ahead in sustainable practices, having quantifiable data substantiating the long-term effects will be undeniable motivators toward change. Especially when the data instead shows cost savings as a result.

In social studies classes students come to understand the implications of collective actions. The sustainable pledge may impact jobs, health, policy or social justice. Students will identify and weigh the societal and environmental cost and benefits associated with their sustainability pledge. Students will evaluate how the society they belong to shapes their behaviors as well as their effects on ecosystems.

In visual arts, the students will create a three-dimensional piece displaying their chosen pledge; including the researched science, math and social data. The art piece will be constructed with recycled materials found at school or from the student's home. This kinesthetic element provides students the individual freedom of art as a tool toward personal expression. When displayed throughout the school, it comes with the added bonus of engaging the larger school community in the knowledge of the pledged sustainable behaviors performed by their peers. In turn, inspiring peers to make sustainable changes of their own. The art pieces could also be part of a traveling display to junior high and grade schools motivating students to adopt sustainable changes even earlier in life.

After the pledges and art pieces have been posted, and students have begun implementing their pledges into action for at least two weeks, each class should evaluate and assess their achieved impacts as a whole, by calculating the total



environmental, economic and societal savings of *all* student pledges. You may want to celebrate your student's successes as a community by a day of food and fun including a sustainability photo scavenger hunt and/or a homework-free day. It is important to acknowledge and give recognition to their environmental action pledge and their power to make changes. This action can also be repeated at the end of the school year, encouraging the students to continue implementing their sustainable change and forming a long-term habit. By completing the *Student Pledge of Sustainable Change*, students will recognize that they themselves made these positive impacts, which demonstrates that when put together, everyone's small action can make a marked difference in the world.

Lesson Plan

Time: 4 days x 45 minutes (3 days to complete poster + 1 follow-up day 10 days later)

Objectives: Students will

- Choose a sustainable action in which to research
- Create a personal pledge to change a behavior
- Quantify the long and short term effects of changing their personal action
- Incorporate environmental, economic and social factors and explain how the chosen action pledge will be reflected in each
- Increase personal awareness of behavior
- Construct a 3-dimensional poster
- Improve community awareness

Advanced preparation: Create an editable Google document and share it with your students. It should include the daily objectives, a data table in which each student will type (in the class), the *Project Idea Worksheet* and *Assessment Rubric*. Samples of the *Project Idea Worksheet* and *Assessment Rubric* can be found at the end of this article. This will be posted on Google classroom on day one of the lesson.

Day 1: Watch the YouTube videos *iMatter*² and *I will be a Hummingbird*³, then visit the *Daily Acts*⁴ site and view the five action ideas icons. These sites, along with the students notes and textbook, are used as a brainstorm session of topics covered in class that had an impact on students in any way. The students will write topics on the board that they see a need to change.

After the students have written topic ideas, hand out *Project Idea Worksheet* (at end of article). Students are to begin filling in sections and researching project ideas that they have an interest in.

For homework, students will choose an action and fill in their pledge idea and what they will be measuring on the Google document. For example, I gave an example to the students that they could choose reducing disposable water bottles as their action provided they measure something different as a result. Different measurements could include: volume of waste not going to a landfill, volume of petroleum not being used, volume of not being released into the atmosphere from bottle production factories, the volume of water saved from the production of plastic bottles or volume of recycling saved as recycling is the last step to reducing solid waste. While multiple students may choose the same action, there are many different quantities to measure as a result from that action.

Day 2: Show examples of three-dimensional posters for ideas and inspiration. Students will have the entire class time to continue individual research from their project idea worksheet topics.

For homework, students are to type information to be printed out for their poster. This information is to include: the economic factor, social factor, environmental factor and graph of measured change. Referring to the example posters, remind students that this should be large and colorful. They are trying to get other student's attention to promote more sustainable change. They may print out their information at home or at school making sure to print on recycled paper. Lastly, they are to gather their three-dimensional materials needed for construction of their poster; no purchasing of new products for the posters.

Day 3: Students have this class period to create their three-dimensional informational poster. Glue guns, glue sticks, construction paper and markers were provided in classroom. Once all the posters were complete, they were brought to the cafeteria and posted for our Earth Week display.

Days 4-9: The next unit of the curriculum was covered in Environmental Science. At the end of each day, students were asked about their pledge commitments and how it is/is not progressing. We discussed the challenges and successes.

Day 10: After the next unit was complete and before the

next unit of the curriculum began, there was a follow-up and celebration day. On a half piece of recycled paper, each student wrote down how they have or have not completed their pledge and why these are their results. They DO NOT include their name on the half piece of paper with their response. The half pieces of recycled paper with responses were collected and randomly redistributed. Each student read the pledge result distributed to them. All results were read without knowing which student wrote which result.

Positive results were written on the board. The positive pledge results were calculated for the total class showing that together the students made a difference in the world in ten days. The students celebrated the positive environmental changes with a class period dedicated to eating sustainably, locally produced food (chosen from food unit field trip to Earth Fare grocery), zero waste activities including a photo scavenger hunt on school campus (included at the end of this article) and a day of no homework.

Photo Scavenger Hunt

Instructions: With your lab partner, photograph the following items on the school campus. The group with the most objects photographed in 20 minutes will win. Note: you may NOT go into a classroom that is occupied.

Compost sign	A classroom with the overhead lights off
Recycle sign	An object made from recycled materials
Sun tube	Hybrid or alternative fuel vehicle in parking lot
No idling sign	Reusable lunch containers/Tupperware
Bike rack	School work printed on recycled/reused paper
Reusable lunch bag	Bus stop
Reusable water bottle	Low E-glass
Permeable pavers	Water barrel
Local native plant	
White roof	
CFL light bulb	
Compostable cup/napkin/utensil	

Heidi Paul currently teaches at Magnificat High School in Rocky River, Ohio, and developed this lesson plan as part of her graduate work with Project Dragonfly at Miami University in Oxford, Ohio. She would like to thank her department for candidly reviewing this article and her students for implementing their pledges.

See <https://greenteacher.com/wp-content/uploads/2017/06/Worksheet.pdf> for Heidi's Project Idea Worksheet and her evaluation Rubric for these activities.

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