

BLOOM!®

Powered by **Seed Your Future**

Horticulture offers countless careers. These real-life professionals spend their days working with plants and helping communities.

Landscape Architect

Designs outdoor spaces for homes, cities, and businesses. Trained in horticulture, urban planning, and architectural practices.



Florist

Brings beauty and delight to people. Designs and creates floral arrangements for many occasions.



Drone Pilot

On the cutting edge of tech! Navigates drones to manage and grow plants in fields and forests.



Greenhouse Grower

Grows food and other plants in the controlled atmosphere of a greenhouse—no need to battle the weather!



Urban Forester

Works for a city or company to keep trees trimmed and healthy. Provides urban trees with the special maintenance they need.



PHOTO COURTESY OF NORTH CAROLINA STATE UNIVERSITY

Hydroponics Specialist

Grows plants in liquid without soil—so the plants can stay free of all soil diseases!



Botanist

The ultimate expert on plant biology. Studies the power of plants and teaches, conducts research, or advises businesses.



Natural Lands Manager

Manages, protects, and conserves our lands, streams, and wetlands. Works with others to ensure a healthy future for Earth.



PHOTO COURTESY OF LONGWOOD GARDENS

Problem-Solving Plants



Help students explore ways plants can help solve local environmental and community challenges—and brainstorm their own solution!

Objective

Students will design solutions to help combat real-world challenges that put their community's ecosystem, biodiversity, and/or human health at risk.

Standards

NGSS

MS-LS2-3

Examine cycling of matter in an ecosystem

MS-ETS1-1

Design solutions to problems

MS-LS2-5

Evaluate solutions for maintaining biodiversity and ecosystems

MS-ESS3-3

Minimize human impact on the environment

Time

60 minutes

Materials

Create Community Solutions activity sheet

Enter the Plant Mash-Up Contest



Students will imagine, describe, and draw a plant hybrid that benefits their community. For a rubric, full rules, and prize details, visit [scholastic.com/bloom/contest](https://www.scholastic.com/bloom/contest). Mail entries to: **BLOOM! Plant Mash-Up Contest, Scholastic Inc., ATTN: K. Clark, 557 Broadway, 3rd Floor, 3-214, New York, NY 10012.**

DEADLINE: MARCH 6, 2020

1 Display the headings in step 2 below in a random order on the board.

Ask students what the words have in common. Confirm that they're the stages of the plant growth cycle.

2 In small groups, have students draw on their prior knowledge to order and then outline each of the steps. (Alternately, assign each stage to a group.) Review as a class and work together to create definitions (shown below).

Decrease the challenge by providing prompts at each stage (e.g., what conditions are needed for this stage to begin, then end? What is achieved at this stage?). **Increase the challenge** by making note of energy transfer in each stage.

① Germination Cell duplication begins under the right conditions for the type of plant: temperature (usually warm, sometimes cold), moisture (the just-right amount), and location (like soil, sometimes water) conditions.

② Sprouting The primary root emerges to anchor the seed and absorb nutrients from soil.

③ Vegetative Leaves grow and begin to convert light energy into chemical energy that can later be released to fuel the plant's activities (photosynthesis)—plants make their own food!

④ Flowering Ovules, the female reproductive parts of the plant, grow as part of the flower. Flowers use scent and color to attract pollinators.

⑤ Pollination Ovules are fertilized by pollen, often via pollinators (e.g., insects, birds).

⑥ Seed Dispersal Fertilized ovules develop into seeds, which are dispersed (e.g., gravity, wind, animals), and the cycle can begin again with germination.

3 Direct student pairs to brainstorm ways that plants are important to humans, animals, and the environment. Then create a class list, such as: food, medicine, habitat, building materials, mental health, paper products, clean air to breathe, atmospheric balance, etc.

4 Challenge the class to identify how plants react differently from other materials to environmental changes (example: When it rains, an asphalt street will start to flood much sooner than a lawn with grass, shrubs, and trees). After students have shared their observations, explain that some of these differences demonstrate that plants don't just give us commodities but can also help address problems in our communities. For example, planting trees can help a city reduce noise and air pollution, and planting a native species in your yard may increase biodiversity.

5 Distribute the Create Community Solutions activity sheet. Students may complete the sheet individually or break into small groups and work together on one issue. **Increase the challenge** by having them expand on their selected solutions with research, then present the best solution they found. Next, have students consider a plant that grows well in your region and think of ways it might be used to solve a problem in your community. Invite students to share their ideas and solutions with the class.

6 Hand out the Plant Mash-Up entry form and send us your students' plant creations! (See bottom left.)

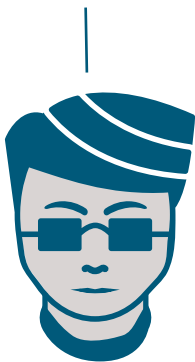
NO PURCHASE NECESSARY TO ENTER OR WIN. Void where prohibited. The promotion is open only to students currently enrolled in grades 6–8 at a public school, an accredited private school, home school in compliance with the laws and regulations of its state/district, or participating in an out-of-school time program in the 50 US/DC and who are residents of the 50 US/DC. Entries may only be submitted by a student's teacher, youth program leader, or his/her parents or legal guardians—submitting individuals must be over 18 (19 in AL or NE) and residents of the 50 US/DC. Only adults listed above may submit entries by uploading them to [scholastic.com/bloom](https://www.scholastic.com/bloom) by 11:59 p.m. ET on March 6, 2020, or mailing them (postmarked by March 6, 2020, and received by March 13, 2020) to Plant Mash-Up Contest, Scholastic Inc., Attn: Kaitlin Clark, 557 Broadway, 3rd Floor, 3-214, New York, NY 10012. All student winners will receive gift codes to [scholastic.com](https://www.scholastic.com) in the following amounts: Student Grand Prize Contest Winner: \$500; Student Runner-Up Contest Winner: \$250; Student Sweepstakes Winner: \$100. Prizes for the adult submitting the winning entries also awarded, see Official Rules for details (Total ARV: \$3,600). For Official Rules, visit [scholastic.com/bloom/rules](https://www.scholastic.com/bloom/rules).

Name _____

Create Community Solutions

The community needs your help! Consider each issue, then suggest plant-based solutions. Explain your choices on a separate sheet.

"The sidewalk and road outside my school is noisy, dusty, and hot. I can't even hear myself think."



1. Student

"My neighborhood looks abandoned, with nothing but weed-filled lots and broken concrete sidewalks."



2. Teen

"On our farm, we're losing topsoil to wind and water erosion. Our crops need the nutrients in that soil to flourish and grow."



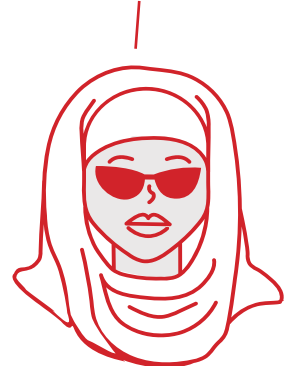
3. Farmer

"In our city, it's easy to buy a box of cereal or a can of soup. But our local market doesn't carry fresh fruit or vegetables."



4. Dad

"After a heavy rain, my basement floods, and all my neighbors have the same problem."



5. Mom

Choose one or more plant-based solutions

a) URBAN GARDENING Grow fresh and nutritious fruits and vegetables locally in urban centers using sustainable practices.

b) NEW PLANTING Plant a variety of diverse trees, shrubs, and flowers to break up sprawling lawns, provide windbreaks, and increase biodiversity.

c) MEDIAN PLANTING Add shrubs, grasses, small trees, and flowers to medians on the roadways to diminish traffic sounds as well as pollution.

d) GREENHOUSE GARDENING Extend the growing season for fruits and vegetables by

growing in greenhouses and other climate-controlled environments (such as hydroponics).

e) RAIN GARDEN PLANTING Plant shrubs, trees, and grasses to absorb rain and slow down soil runoff. Rain gardens are great for reducing flooding and erosion.

f) TREE PLANTING Plant trees. Their canopies block wind, slow heavy rain, provide habitat and shelter for wildlife, and offer shade. Their roots protect against erosion. Trees improve air quality and reduce noise pollution.

RESEARCH YOUR REGION! Choose a plant that grows well in your region and find out which climate and growing conditions it prefers. How could your plant create a solution in your community, school, or home?

Contest Entry Form



Plant Mash-Up Contest!

DEADLINE
MARCH 6, 2020



DIRECTIONS Consider the characteristics of two existing plants and use them to create your own hybrid with new qualities that will benefit a challenge in your community. You can use any two plants you can think of, but here are some to get you started. Make sure your final thoughts all fit on this page!



Tillandsia

- * Called “air plants” because they do not require soil to grow
- * Drought tolerant, requires only minimal water
- * Very effective at removing pollutants from the air



Cereal Rye

- * Provides food for wildlife and humans
- * Has an extensive soil-holding root system that helps control erosion
- * Suppresses weeds and pests



Lavender

- * Has antiseptic and antibacterial properties
- * Repels pests
- * Creates a fragrant, calming essential oil
- * Often used in flower arrangements



Coast Redwood

- * Ability to store thousands of gallons of water, making it very drought tolerant
- * Captures more carbon dioxide from air pollution than any other tree



Golden Barrel Cactus

- * Has a shallow, net-like root system to capture water
- * Waxy coating prevents loss of water via transpiration
- * Spines protect against predators



Raspberry

- * Attracts pollinators
- * Provides nutritious food for animals and humans
- * Offers shelter for small wildlife

Name the two plants you are combining:

1. _____ 2. _____

Name the challenge:

Illustrate your hybrid below:

In the space below, describe the features of your hybrid and how it will help your community.

[illegible]

Student Name: _____ Student Grade: _____

Teacher Name: _____ Teacher Email: _____

School Name: _____ School Address: _____

School City/State/Zip: _____