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.

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

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

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!

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.
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

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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.

   - **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.

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

   - **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!

   - **Flowering**
     Ovules are fertilized by pollen, often via pollinators (e.g., insects, birds).

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

   - **Seed Dispersion**
     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.)

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**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 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 cards to 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.
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.”

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

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

“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.”

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


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?
Plant Mash-Up Contest!

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!

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.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Student Name: ___________________________ Student Grade: ___________________

Teacher Name: ___________________________ Teacher Email: ___________________

School Name: ___________________________ School Address: ___________________

School City/State/Zip: ___________________________