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## The Big Green Machine: Plants and their Ecosystems | Kindergarten (K)

Meet the Big Green Machine - plants! Learn where we get our energy and how plants support all life on earth. During this tour, an experienced Garden Guide will help you investigate and answer the question - “What do living things need to survive?” while exploring the natural resources we have available in our unique California habitats.

### *Program Overview*

Students will be divided into groups of no more than 10 students for each group. Each group will then be paired with one of our volunteer Garden Guides who will take the group on a walking tour of the Garden and facilitate different activities. Activities include an interactive sorting exercise where students will sort objects into “source of energy” categories (sun, plants, animals, etc.); the other activity included is a bush beating sheet where students will observe and tally different insects found in bushes. Chaperones are expected to assist with some of the activities by managing the materials, along with managing student behavior so that our Garden Guide can focus on facilitating the tour and activities.

Please review our [pre-visit materials](#) prior to your visit. As a reminder, be sure to have your class dress for the weather, wear comfortable walking shoes, and carry water bottles. Refillable water stations are available in the Garden.

### *Next Generation Science Standards ([NGSS](#))*

- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
  - LS1.C: All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)
- K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

California Botanic Garden

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- ESS2.E: Plants and animals can change their environment. (K-ESS2-2)
- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
  - ESS3.A: Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)

### *Vocabulary*

- **Shelter**
- **Habitat**
- **Water, Food, Air**
- **Web of Life**
- **Resource**
- **Survival**
- **Environment**
- Producer, Consumer, Herbivore, Carnivore, Omnivore
- Living, Nonliving
- Photosynthesis
- Energy
- Reproduction

### *Resources*

- *Up in the Garden and Down in the Dirt* by Kate Messner (Ages 4-8 / Grade TK-3)
- *Green: The Story of Plant Life on Our Planet* by Nicola Davies (Ages 5-8 / Grade K-3)
- *The Night Flower* by Lara Hawthorne (Ages 3-7 / Grade TK-2)
- *Over and Under the Canyon* by Kate Messner (Ages 5-8 / Grade K-3)
- *The Forest in the Trees* by Connie McLennan (Ages 3-8 / Grade TK-3)
- Learning @ Home: A Link in the Chain  
[https://cdn.prod.website-files.com/5a6e317c7bd20a000184f439/601c36ce9844cf44d453dc23\\_A%20link%20in%20the%20chain.pdf](https://cdn.prod.website-files.com/5a6e317c7bd20a000184f439/601c36ce9844cf44d453dc23_A%20link%20in%20the%20chain.pdf)
- Project Learning Tree: Backyard Safari Activity for Grades K-2  
<https://www.plt.org/free-download-k-2-backyard-safari>
- How to Beat for Insects <https://www.youtube.com/watch?v=N1HFjW6dgHY>



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*Resources (Cont'd)*

- Source of Energy: Sorting Activity  
<https://docs.google.com/presentation/d/1Sq0LycFMHpttNoYz18w7DOD8kUlcKQs5Oa3jkRaICvo/edit?usp=sharing>