

Letters to David: Super Duper Trees Instructions and Answers

- Venue: Supertree Grove, Golden Garden or Silver Garden (Outdoors)
- Estimated duration to complete all the activities: 30 minutes (excluding welcome and briefing)

Age Range / Subject

- 4 - 9 years old (Science): Conservation and Biodiversity

Learning Objectives:

- Learn about plants and animals at the Gardens
- Learn about conservation and environmental responsibility
- Develop investigative and problem-solving skills

About Letters to David: Super Duper Trees

Letters to David is a series of online children's activities which visitors can download for free, for their visit to Gardens by the Bay.

Each activity sheet features a different set of correspondences between David, the Botanist, and his friends around the world. Within each letter, is something interesting for your children to do in a different part of Gardens by the Bay.

Letters to David: Super Duper Trees introduces the children to our sustainable superheroes, the Supertrees. Learn about how these giant structures have gardens growing on them and about how they house an eco-friendly alternative energy source! For this activity, it is recommended that you select one of the three Supertree clusters to visit.

Welcome and Briefing (10 min)

Upon arrival, allow the children to adjust to the new surroundings. Give a quick list of instructions to the children:

- Do not run or push your friends as you walk in the gardens
- Do not touch any plants unless instructed
- Whatever you bring to the gardens, bring them back with you; whatever you find in the gardens, leave them in the gardens
- Raise your hand if you wish to speak or answer any questions
- Let your teachers know if you feel unwell

Give the children time to visit the toilet. Once ready, prepare to take the children to the [Golden Garden](#), [Supertree Grove](#) or [Silver Garden](#). Before setting off, ensure that the children are properly prepared for their time outdoors.

Suggested Plan (30 min)

Once there, point out the Supertrees to the children. Ask them to observe and describe the Supertrees. Then, use the information found in Mel's email to David to tell the children more about these structures and vertical gardening.

Next, find a shady spot to seat the children and allow them to design their own vertical gardens on the drawing of the Supertrees in their activity sheet.

For younger children, you may wish to end here and allow them more time to complete this design activity as the concepts in the next one may be too complicated.

For older children, when they are done, explain that some of the Supertrees in the Gardens have a very special feature – photovoltaic cells / solar panels. Use David’s email to Mel to explain what solar panels are, and how they work.

Next, ask them if they can think of any other alternative energy sources e.g. wind, biomass and hydroelectric power. If the children are not familiar with the concept of alternative energy sources, explain it to them with the following notes.

Alternative Energy Sources:

In Singapore, the electricity we use is primarily generated through the burning of fossil fuels. Fossil fuels are produced over millions of years from the remains of living things. They include fuels like coal, natural gas and petroleum. The burning of fossil fuels releases harmful gases into the environment. Too much of these harmful gases lead to global warming and changes in our climate.

Apart from the negative effects of fossil fuels as an energy source, they are a non-renewable resource, because once you burn it up, you cannot reuse it or make more easily. Hence it is important to find alternative energy sources which are both environmentally friendly and renewable.

At the Gardens, one renewable resource we use is solar power, as explained earlier. Another alternative energy source we use is biomass. Biomass refers to any organic matter that is used as fuel. In our case, we use horticultural waste i.e. dead plant parts. Instead of burning fossil fuels to power the machines that generate electricity, we burn biomass. The gases released are much less harmful.

Wind is another renewable energy source. Some countries have large wind-powered structures that convert kinetic energy (movement from wind) into electricity. Water can also be a renewable energy source. Hydroelectrical plants are places that use the kinetic energy from moving water to generate electricity.

End off the activity by asking the children to think of alternative uses for solar panels. Ask them to draw the most exciting one on the activity sheet.

Note to Educator:

The above is a suggested plan. Please feel free to adjust the duration and complexity of the activities to suit the needs of your children.