

# Solar Mamas Light the Way

*This lesson can be presented over 1-2 sessions. Instructors should feel free to use whichever discussion questions and activities you think best for your class or group. We advise giving students the sheet with the definitions of the virtues before the discussion questions.*

## Lesson Goals

Help students...

- Learn about the challenges faced by communities without electricity.
- Understand how energy empowers individuals and communities.
- Recognize how creativity often leads to better solutions in addressing problems and important issues.
- Appreciate the power of education and hands-on learning to create change.
- Reflect on what duty means and their own sense of duty to their communities.
- Discuss how generosity improves lives and makes the world a better place.
- Recognize ways they can promote a healthy environment.
- See why inclusivity matters and how everyone has something valuable to offer.

## Highlighted Virtues and Character Traits

**Creativity:** the ability to think of new ideas and approaches for accomplishing a goal or solving a problem

**Duty:** something that one is expected or required to do according to one's own standards, moral or legal obligation, especially as a citizen and / or member of various communities

**Environmental Stewardship:** taking care of our environment so it is clean, healthy, and safe for people, plants, and animals for generations to come; using resources wisely and reducing waste

**Generosity:** giving freely of our own possessions, time and/or talent.

**Inclusivity:** the practice and mindset of including people who might otherwise be excluded; making sure that everyone feels valued and respected, no matter who they are or where they come from.

### **Leader Introduction:**

Imagine a world without electricity - no lights, no refrigerator, no computers, no TV, and no phones. Think of all the ways our lives would be different?

This is the reality for many villages across the world, including the village of Ambakivao, Madagascar, where the video we will watch was filmed. They used candles and bonfires for light, but that was unsafe and unhealthy for the people of the village to breathe. Villagers could not work or study after dark. Wild animals, even elephants, sometimes roamed through the village making it dangerous for anyone to be outside after dark.

Now imagine a group of problem-solvers arriving to help the village. You might picture scientists or formally educated engineers... but what if I told you it's a group of grandmothers?

This is the true story of the Solar Mamas—women from some of the poorest villages around the world. They never went to school and most cannot read. Yet, because of generous donations to a program at Barefoot College in India, they have been trained as solar engineers and learned to build, install, and repair solar panels, bringing electricity and light to their villages. Since 2015, Barefoot College has trained over 3,500 women from 93 countries and brought light to over 2.5 million people.

Let's watch a video about how the Solar Mamas of Madagascar changed their village forever.

**Lesson Video:** (We strongly recommend reading the subtitles aloud so the students can best understand the non English speakers.)

<https://www.youtube.com/watch?v=DzLxFZcC9Ag>

### **Leader Summary...**

The Solar Mamas prove that anyone—no matter where they come from—can learn new skills and make a big difference. These women, many of whom never went to school, embraced this challenge and accomplished what most would assume is impossible for them—becoming solar engineers. Let's talk a little more about how they did this and why their work is so important.

The women traveled all the way to Barefoot College in India to go through a six month training program designed just for them. Because many of them cannot read or write, the teachers there use colors, symbols, and hands on training instead of textbooks and chalk boards that you might know from school. They learned by actually building the solar panels piece by piece, with wires and circuits color coded so they can remember how to fit them together. Instead of reading instructions, they watched, practiced and learned by working with their hands.

Training these women is only possible because of generous donors from around the world. Charities and individuals have come together to pay for the women to travel, to learn, and buy the solar systems that they bring home. Once the solar systems are installed, the energy from the sun is free. And for the first time, the people in these villages have electricity at no cost to them.

Before solar, most people relied on dangerous and expensive options like wood, charcoal, or kerosene for energy, all of which are harmful to the environment and can make people sick. To make charcoal and firewood, lots of trees that keep our air clean and that give animals homes have to be cut down. This also means less shade and rain, which makes land drier over time.

What more, burning charcoal and firewood creates thick, black smoke that makes the air dirty and can hurt people's lungs.

But with the solar panels, they now have free, clean, and safe energy that enables a healthier environment. Children can now read and study in the evening and with outdoor lights the villagers are more protected from wild animals.

One of the amazing parts of this program is the way it has transformed the individual lives of the women installing the solar panels. They return home as respected leaders and are now able to teach others, fix broken solar panels, and help their villages prosper.

Thanks to the Solar Mamas, over 2.5 million people around the world now have electricity for the first time... and it all started with one simple idea: that anyone, no matter their background, can be a problem solver and make a difference.

**Discussion Question Options:** *(discussion prompts / answers are in parentheses)*

Before beginning our discussion, let's read over the virtues and their definitions, found in the online lesson as a separate document.

1. Before they had electricity, what problems did the villagers face in their daily lives?  
(Darkness at night and kids not being able to study in the evening, unclean energy sources like fire and charcoal to cook which damages their lungs, wild animals roaming their village at night making it dangerous to go out.)

How does having solar generated electricity change their lives?

(Children can study in the evening, giving them a better chance to learn and succeed. Cooking is easier and no longer requires dirty fuels. In the evening, people can go outside and feel safe and now can spend more time with each other. They no longer have to pay for heat and energy sources such as charcoal and candles.)

2. How is Barefoot College being **creative** in the way it teaches the women to install and maintain solar energy systems?  
(They adapted to the reality of their students not knowing how to read by teaching them through hands-on experience and the use of color coding and symbols.)

3. Yollande (Yo-lah-nd), one of the Solar Mamas, said, "It is our **duty** as people in the village to take care of our place. To improve it. And since the addition of solar panels, it is peaceful, healthy, and bright." Why do you think the Solar Mamas felt a sense of **duty** to improve themselves and their villages?

(They likely care deeply about their village and the people who live there and have a strong desire to improve it. Caring often leads to a sense of duty to improve a community that we are a part of.)

What communities do you feel a sense of duty to improve?

(Our family, school, sports teams, religious communities, town or city, our country, even global community)

What are some actual ways we can live out this sense of **duty** to others and communities that we are a part of?

(helping and caring for a sibling; helping with chores in our home; helping a friend in need; standing up for others being bullied; volunteering with charities in our area and

offered through our school; helping teammates in a sport; going into a community service profession such as the police, emergency responder and the military.)

4. When people share their time, money or talent, what virtue is this?  
(**generosity**)

**Generosity** creates a chain reaction—one act of giving leads to another. We saw this with the Solar Mamas: donors gave money so they could learn, teachers gave their time to train them, and the Solar Mamas gave their knowledge and skills back to their villages. Can you think of a time when someone's generosity helped you, and how that inspired you to help someone else?

(a friend shared their lunch, so you shared a snack later, a teacher taught you something and then you helped a friend or sibling with homework, someone offered you a ride, so you helped them with something in return...)

5. Solar energy promotes **Environmental Stewardship** by reducing the pollution often created in generating heat, light and electricity when we burn fossil fuels such as coal, natural gas and in the case of many third world countries wood and charcoal. How can we live out environmental stewardship and promote a healthier environment in our community?

(Turn off lights when you leave a room; use less water; recycle, plant trees; pick up trash, walk and bike instead of using a car, etc.)

6. **Inclusivity** is the practice and mindset of including people who might otherwise be excluded; making sure that everyone feels valued and respected, no matter who they are or where they come from. Do you think that the Solar Mamas felt like leaders in their communities before they became solar engineers?

Does this story change the way you view older members of our community and their ability to contribute to our community?

7. How do the Solar Mamas prove that everyone has something valuable to offer and should be included regardless of their background?

(Even though they could not read or write, they were still smart and capable. They used hard work and determination to bring electricity to their villages. It shows us that we should never think someone is incapable of helping others or being important.)

### Journal Writing Options:

1. If you could learn a skill that would help your community, what would it be? Would it be something that helps the environment, helps people in need, or makes life better in some way? How would you use that skill to help others?
2. The Solar Mamas gained new skills that changed their futures. Think about something new you've learned that opened up a new opportunity for you—maybe learning to swim, to read, to play an instrument, or to cook something on your own. How did learning that skill change what you were able to do and how you view yourself?

### Extended Activity:

Organize students into small groups and ask them to come up with a problem or issue where they have a creative solution for addressing the problem. Each group should then present to the

class outlining the problem, their proposed solution in detail, what makes their solution creative or different, and why they think it will work?

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