

# BIOENERGY CAMP

## DAY TWO: WASTE TO WATTS



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# WASTE TO WATTS

Now that you have a basic understanding of bioenergy, buckle up and get ready to learn about how biomass is turned into biogas.

Biomass is any organic material made from plants or animals. This includes animal and human waste! Other examples of biomass include agricultural residues such as wheat straw, municipal solid waste such as manure, food processing and other industrial waste and energy crops.

Biogas is any gas that can be derived from biomass. We can use systems called bioreactors that allow us to turn wasted biomass into energy.



- Review the vocabulary words above (bioenergy, biomass, biogas)
- Read "A Biogas Story" provided in this handout.
- As you read, notice how bioenergy works in a pattern. Bioenergy is a renewable resource, which means it works in a nonstop pattern. Identify and draw out what pattern you think the biogas from this story is taking. Refer to our chart at the end of this handout to help you! There are no wrong answers.
- Watch the video "17-Year-Old Kenyan Creates Energy From Human Waste"
- As you watch, look for similarities you find between the video and "A Biogas Story."
- Record/share the similarities you found and the pattern you drew on the Flipgrid and answer the questions on the microsoft form linked below.

## A Biogas Story

Leah lives on a farm with her mother and father. They raise corn on their farm to feed their pigs. Every morning and evening Leah helps her father and mother feed the pigs.

The pigs are extremely important to the family's livelihood. On Saturday, they pick out the biggest pig and butcher it.

On Sunday, they go to the outdoor market in the village to sell the meat. They also buy things they need.

Leah's family lives on a farm in the country. There is no electricity in her house, but it has lights and a stove. The house is run on biogas. Leah's family makes the biogas on their farm.

Every day, Leah and her parents gather corn stalks from the fields and corn cobs that the pigs don't eat. They collect manure from the pig pens. They also save their own waste.

There is a large container in the backyard. All the waste is put into the container. The family is careful not to let in any air.

As the waste decays, it produces biogas. The biogas flows through a pipe into Leah's house. It supplies fuel for the lights. It also supplies fuel for the stove, which Leah's mother uses to cook food and keep the house warm. The biogas is clean and doesn't make any smoke.

Leah's father empties the container when the waste has decayed. The waste (residue) that is left makes a good fertilizer, which he spreads on his fields.

The corn grows tall to feed the pigs.

## Video: 17-Year-Old Kenyan Creates Energy From Human Waste

Click Here to Watch:

<https://www.youtube.com/watch?v=ziS7yYFT6jc>

