CLASSROOM READY
Weekly News

LEVEL 1 www.classroomready.com WEEK 35 • 2021/22

Solar Microgrid Powers Saskatoon High School

It isn't hard to spot Bishop James Mahoney Catholic High School in Saskatoon. Not only does the school have a bright green roof, but it also has unique, flower-shaped **solar array** on its lawn.

The solar flower is five metres tall, and is made of silicon, metal, and concrete. It is called a Smartflower. Each of its petals is a solar panel.

The solar panels collect energy from the light of the sun, turning it into electricity. That electricity is fed into a microgrid. A microgrid is a type of **electrical grid** that holds a small amount of power and distributes that power over a smaller area than a city or province. In this case, the power is distributed to the school, powering its lights and equipment.

The Smartflower can adapt to conditions. Its petals unfurl during the day when it is sunny to collect energy from the sun. The panels close up and clean themselves at night. The Smartflower is also able to detect storm conditions and will close its petals when there are high winds.

Within the concrete stem of the flower is a battery system that stores the electricity collected from the panels. Students are able to monitor how much electricity the Smartflower is producing and control how it operates.

The Smartflower also will become part of the learning experience for students attending Bishop James Mahoney. The teachers plan to include it in their **curriculum** beginning in the fall of 2022. Students in science programs can learn about how solar panels work, and how electricity is generated, stored, and distributed. The solar flower could also be a topic of discussion in other areas. For example, students in social studies could discuss the politics behind investing in renewable energy sources versus other forms of energy.

DID YOU KNOW

The Smartflower was built using a $158,000 investment from Innovation Saskatchewan and the Ministry of Immigration and Career Training.

To view videos, go to:
http://resources.dynamic-classroom.ca/books/rnsz

WORD POWER

SOLAR ARRAY: A collection of solar panels that work together to collect energy from the sun.

ELECTRICAL GRID: The network of equipment used to collect electricity from a power source and distribute it to users.

CURRICULUM: The topics and subjects students are to study while attending a school.

Weekly News Q & A

Solar Microgrid Powers Saskatoon High School

1. Describe the solar flower.

2. How does the Smartflower work?

3. How can the Smartflower adapt to conditions?

4. How else with the Smartflower be used at the school?

5. How can the Smartflower be used to help students learn?

CRITICAL THINKING

1. What are your thoughts on the high school using solar energy for power?

Uses of the Smartflower

Working by yourself or in a small group, come up with a list of other uses for the Smartflower.

Word Power

Using the words defined below, fill in the blank in each of the following sentences with the word that fits best. All of the words have been used in the article.

1. We needed to _____ the plants for our experiment.
2. The tulip is a flower that will _____ its petals every morning and close them at night.
3. He could _____ that his brother was hiding something from him.
4. The wind turbine _____ enough electricity to power the factory.
5. We had to _____ the wings on the model airplane so that it would fly better.

Adapt: To change something so that it functions better or is better suited for a purpose.
Detect: To discover or notice the presence of something that is hidden or hard to see.
Distributes: Gives or delivers something.
Generated: Produced.
Monitor: To watch, observe, listen to, or check something for a special purpose over a period of time.
Politics: Activities that relate to influencing the actions and policies of a government or getting and keeping power in a government.
Silicon: A chemical element that is found in the Earth's crust and is used especially in computers and electronics.
Unfurl: To cause something that is folded or rolled up to open.

Quiz

1. Not only does the school have a bright green roof, but it also has unique, flower-shaped solar array on its lawn.

   True False

2. The petals of the Smartflower are open when there are high winds.

   True False

3. The solar panels collect energy from the light of the _____, turning it into electricity.
4. The panels close up and clean themselves at _____.
5. Students in _____ programs can learn about how solar panels work, and how electricity is generated, stored, and distributed.

Weekly News Answer Key

Solar Microgrid Powers Saskatoon High School

1. **Describe the solar flower.**
   The solar flower is five metres tall, and is made of silicon, metal, and concrete. It is called a Smartflower. Each of its petals is a solar panel.
2. **How does the Smartflower work?**
   The solar panels collect energy from the light of the sun, turning it into electricity. That electricity is fed into a microgrid. The power is distributed to the school, powering its lights and equipment.
3. **How can the Smartflower adapt to conditions?**
   Its petals unfurl during the day when it is sunny to collect energy from the sun. The panels close up and clean themselves at night. The Smartflower is also able to detect storm conditions and will close its petals when there are high winds.
4. **How else with the Smartflower be used at the school?**
   Smartflower also will become part of the learning experience for students attending Bishop James Mahoney. The teachers plan to include it in their curriculum beginning in the fall of 2022.
5. **How can the Smartflower be used to help students learn?**
   Students in science programs can learn about how solar panels work, and how electricity is generated, stored, and distributed. The solar flower could also be a topic of discussion in other areas. For example, students in social studies could discuss the politics behind investing in renewable energy sources versus other forms of energy.

Word Power

1. monitor
2. unfurl
3. detect
4. generated
5. adapt

Quiz

1. **Not only does the school have a bright green roof, but it also has unique, flower-shaped solar array on its lawn.**
   True
2. **The petals of the Smartflower are open when there are high winds.**
   False – The Smartflower will close its petals when there are high winds.
3. The solar panels collect energy from the light of the **SUN**, turning it into electricity.
4. The panels close up and clean themselves at **NIGHT**.
5. Students in **SCIENCE** programs can learn about how solar panels work, and how electricity is generated, stored, and distributed.