

CLASSROOM READY Weekly News

LEVEL 2

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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 distinctive bright green roof, it also has totally 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 consists of 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 to protect itself.

Within the concrete stem of the flower is a battery system that stores the electricity collected from the panels—for use when needed. Inside one of the classrooms, students are able to monitor how much electricity the Smartflower is producing and control how it operates.

Not only will the Smartflower provide power to the school—it will become part of the learning experience for students attending Bishop James Mahoney. The teachers plan to incorporate it into their **curriculum** beginning in the fall of 2022.

The most obvious connection for the Smartflower to learning is science, of course. 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.

Janet Uchacz-Hart is the executive director of the Saskatoon Industry Education Council, one of the groups that partnered to help build the Smartflower. She says green technology will be critical to Saskatchewan and the world, and it is important for young people to learn about it at an early age. ★



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/hfhe>

Video



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.

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 will the Smartflower be used at the school?

5. What are some ways the Smartflower could be used to teach students?

CRITICAL THINKING

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

2. Write down some other ways the Smartflower could be used as part of the curriculum.

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 listed below, fill in the blanks in the following sentences. 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, consists, detect, distinctive, distributes, generated, incorporate, monitor, operates, politics, silicon, unfurl

Quiz

1. The solar flower is fifty metres tall, and is made of silicon, metal, and concrete.
True False
2. The panels close up and clean themselves during the day.
True False
3. Each of its _____ consists of a solar panel.
4. The Smartflower is able to detect _____ conditions.
5. The most obvious connection for the Smartflower to learning is _____.

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 consists of 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 to protect itself.

4. **How else will the Smartflower be used at the school?**

Not only will the Smartflower provide power to the school—it will become part of the learning experience for students attending Bishop James Mahoney. The teachers plan to incorporate it into their curriculum beginning in the fall of 2022.

5. **What are some ways the Smartflower could be used to teach students?**

The most obvious connection for the Smartflower to learning is science, of course. 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. **The solar flower is fifty metres tall, and is made of silicon, metal, and concrete.**
False – Five metres
2. **The panels close up and clean themselves during the day.**
False – At night
3. Each of its **PETALS** consists of a solar panel.
4. The Smartflower is able to detect **STORM** conditions.
5. The most obvious connection for the Smartflower to learning is **SCIENCE**.