



Video Title: The New Frontier for Swarming Robots

Activity Vocabulary: Define each word and then use it in a sentence.

- Swarm Intelligence:
- Social Animals:
- Collective Transport:

Reflection Questions:

- *Why is the swarm robotic field so innovative?*
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- *Swarm robotics is inspired from swarm intelligence of social animals. What other areas of STEM do you think were inspired by nature or animal interaction?*
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- *What are the two ways that are being used to control swarm robots?*
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- *Can you explain how swarm robotics could be used for cancer treatment?*
o
- *Professor Pincioli gives a few examples of how swarm robotics could be utilized such as biomedical engineering and disaster recovery. What other applications do you see swarm robotics having on day-to-day life in the future?*
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Answer Sheet:

Video Title: The New Frontier for Swarming Robots

Activity Vocabulary: Define each word and then use it in a sentence.

- Swarm Intelligence: **the intelligence that is displayed by social animals (ants, bees, termites).**
- Social Animals: **They can behave as individuals but at the same time form a smart superorganism that can act in a very intelligent way.**
- Collective Transport: **when robots autonomously coordinate to move an object to a specific location**

Reflection Questions:

- *Why is the swarm robotic field so innovative?*
 - *It uses swarm intelligence inspired by social animals that can behave as individuals but at the same time form a smart superorganism that can act in an intelligent way*
- *Swarm robotics is inspired from swarm intelligence of social animals. What other areas of STEM do you think were inspired by nature or animal interaction?*
 - *Answers may vary*
- *What are the two ways that are being used to control swarm robots?*
 - *Control groups of robots and to control individual robots*
- *Can you explain how swarm robotics could be used for cancer treatment?*
 - *We could send in the body very simple robots that individually would not be effective. But because swarm robotics display a level of collective intelligence we would be able to collectively find the location of the cancer and attack it specifically.*
- *Professor Pinciroli gives a few examples of how swarm robotics could be utilized such as biomedical engineering and disaster recovery. What other applications do you see swarm robotics having on day-to-day life in the future?*
 - *Answers may vary*