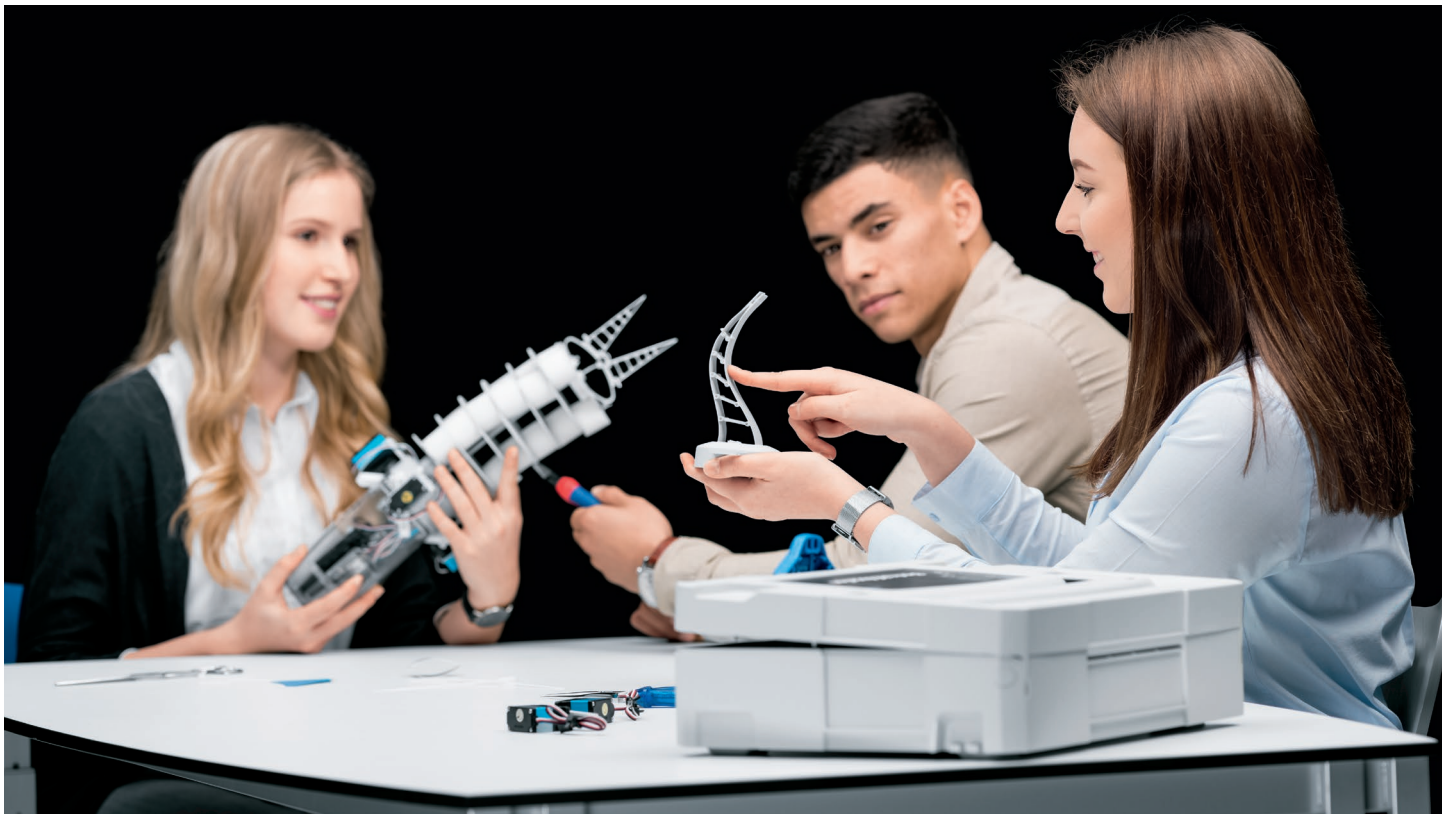
Bionics4Education

Bionics Kit by Festo



Highlights

- Explore bionics concepts
- Understand and apply the Fin Ray Effect®
- Demonstrate how to use microcontrollers
- Create three bionic-inspired models
- Control robots using a smartphone
- Discover technical innovations inspired by nature

Bionics, or bio-inspired engineering recognizes that nature has something to teach us. For billions of years, nature has successfully engineered natural, adaptive technologies for its survival. The organisms and ecosystems we are surrounded by face many of the same challenges that we do.

Studying how nature has developed solutions for living organisms can be very effective in terms of solving today's engineering problems and has inspired human engineers to mimic many natural designs to solve complex problems and develop incredible technologies. Over the years, Festo has explored these principles of nature through its Bionic Learning Network. Our engineers take an innovative "bionic" approach, imitating elements of nature to seek solutions to the challenges facing our automated world. In the process, many samples of bionics-inspired projects have been developed, which the Bionic Learning Network's team of engineers, designers, and biology experts realized could be used to inspire and engage learners in the subject of bionics. So, they created the Bionics4Education innovative learning environment and Bionics Kit, which together, offer students a fascinating, hands-on experience in the world of bionics as they complete similar bionic-inspired projects. Since bionics serves as a link between biology and technology, the Bionics Kit is a perfect addition to any integrative STEM education program.

www.bionics4education.com
www.FestoSTEM.com

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Three bionic robots...

The Bionics Kit contains the material to build three different bionic-inspired robots:
1. Bionic fish
2. Bionic elephant
3. Bionic chameleon

Content, including bionics concepts, project instructions, and career exploration, is available on the Bionics4Education website.

This comprehensive collection of information helps guide learners through their bionics experience while encouraging them to ask the right questions and look to the correct models in our environment to understand how living things meet specific functions.

For example, why are fish tails designed like they are? How would nature pick up objects?

How does an elephant control its trunk? How can we optimize the swimming ability of a fish?

All bionic robots are actuated by servo drives and controlled by a microcontroller. Detailed instructions allow students to create the robots and easily control them by using their smartphones.

...one Bionics Kit

Bionics Kit shown with optional Systainer

Because all objects can be disassembled and reassembled, it is possible to create all three models one after another with one Bionics Kit.

Please contact Festo Support for pricing information and to learn about the “Learning from Nature,” Integrative STEM learning solution.

The Bionics Kit contains[1]:
- Material to build the three bionic robots
- 4 electronic servos
- Arduino-compatible microcontroller
- 3D printed Fin Ray Effect® parts

[1] Common items, e.g., a balloon and paper, are required. Use of these additional items promotes student creativity and resourcefulness.

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