Champion
the Researchers

RESEARCH PROJECT: BIOMIMETICS

Stefani and Brubeck's research is inspired by nature. They look at how the body heals itself, and they apply this to mending cracks in concrete. Nature is often looked to for the solution to engineering problems – a process called biomimetics. Nature has been the inspiration behind various feats of engineering, from space technology to Velcro.

PUPILS RESEARCH AND PRESENT A SOLUTION TO AN ENGINEERING PROBLEM, INSPIRED BY NATURE

Have you ever wondered ...

... how engineering relates to the natural world?

Imagine ...

... you are assisting a leading biomimetics engineer with her research. She has asked you to present with her at a prestigious scientific conference. She wants you to provide some background information about biomimetics, and create a five minute presentation using a real biomimetic application as an example. You decide to undertake research to find out how nature has inspired engineering, and how biomimetics might be used to help people in the future.

Some things for pupils to think about

- Why do engineers look to nature for ideas? What can the natural world tell us about engineering?
- Are there any famous examples of nature-inspired engineering?
- Do any buildings, modes of transport, or everyday gadgets mimic nature?
- Are researchers looking to nature for solutions to today's big engineering challenges?
- What kind of engineering most interests you? Is there any biomimetics research in going on in this area?

Suggestions for supporting pupils

Students must research and select information for themselves. However, they may need some direction from the teacher in order to identify suitable sources of relevant information at an appropriate level. In addition, students may need some direction from the teacher in how to produce a presentation – formatting, section headings etc.

Possible equipment, materials and resources

Internet access; presentation software (PowerPoint, for example); a list of biomimetics examples such as shark skin (swimming costumes), octopus (surgical robot arms), birds (aeroplane wings) and polar bear feet (snow shoes).

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