



MARINE BIOLOGY WITH DR SEAN COLIN

TALKING POINTS

KNOWLEDGE

1. What is the difference between a prolate and an oblate jellyfish bell?
2. What are ctenophores and what are their main differences with jellyfish?
3. What is one major difference between Semaestome and Rhizostome jellyfish?

COMPREHENSION

4. Why do jellyfish swimming motions need to be so efficient?
5. Explain how a large, oblate jellyfish uses motions in its bell to swim.
6. Why do smaller, prolate jellies need to swim more quickly?

APPLICATION

7. If you were studying a particular jellyfish while on a SCUBA dive, what characteristics would you look for in determining its feeding behaviour?
8. How might you predict the ecological impact of a particular jellyfish species if it were introduced to a new ecosystem?

ANALYSIS

9. What steps have Sean's team taken to correct previous misconceptions about the motions of jellyfish?

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

- Do some research online and pick two species of jellyfish: one with an oblate bell, and the other prolate. Create a chart comparing the differences in how they swim and feed.
- Draw a basic labelled design for a biomimetic robot based on a jellyfish, designed to move through the water while using as little power as possible. Hint: Your design should include a thin sheet of flexible material. Think about where its power source should go and pay particular attention to the margin at the bottom of the bell.
- Imagine you were interviewing Sean for an article on your school website, and write a list of 10 questions to ask him. You might want to find out more about his career path, his motivations, how he conducts his research and where his research will lead in the future.

MORE RESOURCES

- The Roger Williams University offers a Marine Biology Summer Camp each year:

<https://www.rwu.edu/academics/schools-and-colleges/fssns/departments/biology-marine-biology-environmental-science/marine-biology-camp>

- *Shape of Life* is the website of Sean's research partner, Dr Jack Costello. It contains much more information, as well as pictures, and videos of his research:

<https://www.shapeoflife.org/scientist/dr-costello-biologist>