

## **Antarctica Video Answers**

### **Wednesday 5 November**

#### **1. Sea Stars and Urchins**

Leave the main building at Scott Base and walk across the snow to the wet lab to see what Kate Sparks has been working on.

1. Where does the Antarctic cushion star live?
  - On the sea floor under the sea ice
2. Where do these Antarctic cushion stars fit into the food web?
  - They are scavengers and eat dead and dying things so are helpful recyclers of nutrients
3. What do these urchins use their spines for?
  - Searching around in the darkness, trying to get food into their body and for sensing what they touch.

Next step learning: What do you think would happen to the Antarctic marine food web if there were less cushion stars?

#### **2. Science in the Wet Lab**

Take a closer look at one of Kate's experiments on Antarctic sea stars and see how she is monitoring the response of these sea stars to warmer water.

1. What is Kate monitoring?
  - The breathing rate (oxygen consumption) of the sea stars in warmer water
2. What is the temperature of the water that Kate is using in the experiment at the moment?
  - 1.4 degrees Celsius.
3. How many times does Kate want to repeat this experiment?
  - 50 times

Next step learning: How is respiration rate related to metabolism and what do you think will happen to the Antarctic cushion stars in warmer water?

### 3. *The fair test – science in action*

Find out more about how science is done in a certain way to make sure that it is fair test and the results are accurate

1. What is a control?
  - When you have changed nothing so that you have something to compare with when you do change something (a variable) such as temperature, so the control in this experiment is where the sea water is the same temperature as it was where the cushion stars were found
2. Why has Kate collected Antarctic cushion stars from more than one place?
  - So that she knows that the results are not just a coincidence but show how sea stars from different areas react
3. How many sea stars is Kate sending back to New Zealand?
  - 200

Next step learning: Design your own experiment to test the ability for an Antarctic animal to survive warmer oceans. Include a control and step by step method that could be repeated by someone else.