Antarctica Video Answers

Monday 3 November

1. Flying to Cape Bird

Jump aboard the helicopter destined for Cape Bird and the Adelie penguin colony to begin your scientific work down here in Antarctica.

1. About how far was the journey from Scott Base and how fast was the helicopter going?
   - Approximately 70 kilometres at a speed of 150km/hour
2. Which volcano could you see from the helicopter?
   - Mount Erebus
3. Where is Cape Bird located?
   - At the northern end of Ross Island

Next step learning: Why do you think some of the windows in the helicopter fogged up during the flight?

2. Why Cape Bird

Come down onto the sea ice and meet scientist Steve Wing from the University of Otago and find out why he chose to come to Cape Bird.

1. Why study Adelie penguins?
   - Because they are sentinels – indicators of how the ecosystem is functioning
2. Where else is the science team going to take samples?
   - Cape Royds
3. Why have these two sites been chosen?
   - Because they both have Adelie penguins but one Cape Royds has more sea ice while Cape Bird has less so the scientists can see if the penguins' food sources are different because of this.

Next step learning: Find out more about what penguins eat and how their food source might be affected by climate change.

3. Penguins

Come and have a closer look at the Adelie penguins in the colony at Cape Bird and find out why these birds are so important to the Antarctic marine ecosystem.

1. Where do Adelie penguins spend most of their time?
   - Out in the ocean feeding
2. Where do penguins fit into the Antarctic marine food web?
   - Up towards the top of the food web eating other consumers such as krill and fish
3. How do penguins help the marine ecosystem?
   - By recycling nutrients in the form of guano which boosts the productivity of the ocean

Next step learning: What impacts do you think people have on the Antarctic marine food web and how could we reduce these impacts?

4. Collecting Guano

Come and help collect a sample of penguin guano to help Steve with his science project.

1. Why is Steve collecting the penguin guano?
   - To see what the penguins have been eating and trace this back through the food web
2. How are the samples collected?
   - Samples have to be carefully collected from an area of snow which is clean and there must be no contamination from your hands, the plastic tubes and bags have been specially cleaned and need to stay clean so the sample stays pure
3. What will happen to the samples after today?
   - They will be refrigerated and taken back to New Zealand to put through a machine to analyse trace metals and elements that indicate specific foods from the marine ecosystem

Next step learning: Why would it be better for Steve to collect more samples rather than less?

5. Doing Science in Remote Places in Antarctica

Come into the hut at Cape Bird and find out how scientists keep their impacts to a minimum when working in the field.

1. What happens to human waste when out in the field?
   - It has to be kept separate (you pee in a bottle and pooh in a bucket and it is taken back to base).
2. What paperwork needs to be filled out by scientists so they have permission to work in particular parts of Antarctica?
   - Permits for the ASPA, permits for taking samples home for collecting animals and for working on dead animals
3. How is the hut powered?
   - Diesel, LPG and solar panels (photovoltaics)

Next step learning: Design a hut that is suitable for eight scientists working out in the field in Antarctica.