



2013-2015

LIFE IN EXTREME ENVIRONMENTS
PRINCESS ELISABETH ANTARCTICA STATION

START



YOU SCHEDULE A VIDEO CONFERENCE BETWEEN THE PRINCESS ELISABETH ANTARCTICA STATION AND A SCHOOL IN BELGIUM. WHAT IS THE TIME DIFFERENCE?



No time difference

1 hour

4 hours

6 hours

Incorrect !

TRY AGAIN

Correct!

Geographical coordinates of the Princess Elisabeth Station:

71°57' S - 23°20' E

Geographical coordinates of the Polar Quest 2 winning school:

50°40' N - 5°30' E

Due to its geographical location, the time at the Station should be an hour ahead of Belgium.

However as there is 24h daylight in the summer when the station is occupied, the **station works to Belgian time** so that it is easier to communicate with International Polar Foundation Headquarters.

NEXT



THIS IS THE FIRST TASK ON ARRIVAL AT THE PRINCESS ELISABETH STATION. WHAT IS THE MECHANIC DOING?

- ▶ HE IS SEEING HOW COMPACT THE SNOW IS
- ▶ HE IS CLEARING A SPACE IN FRONT OF THE STATION TO PUT THE CONTAINERS
- ▶ HE IS UNBLOCKING THE ENTRANCE TO THE GARAGE TO GAIN ACCESS TO THE VEHICLES STORED THERE OVER WINTER
- ▶ HE IS BUILDING A WALL OF SNOW TO PROTECT THE BASE FROM THE WIND



Incorrect !

TRY AGAIN

Correct!

On arrival at the station early in the season, access to the garage is blocked by snow that has accumulated during the winter. Also, the photovoltaic panels are covered with snow.

A bulldozer parked outside the station provides **quick access to garages and Prinoth tractors**. They clear the snow around the station and prepare the runway for aircraft. They clean the solar panels and start the snow melter to provide potable water to residents. All other station systems are then checked and started.

NEXT



IN ANTARCTICA THERE AREN'T ANY...



Mountains

Trees

Lakes

Lichen

Incorrect !

TRY AGAIN



Correct!

There are mountains, lakes and lichens.

There are no **trees** in Antarctica.

Only two species of higher plants grow on the Antarctic Peninsula - *Colobanthus quitensis* and *Deschampsia antarctica*.

Except for marine mammals and birds that live near the coast, much of the Antarctic life is microscopic. In the interior of the continent some invertebrates, mosses, lichens, cyanobacteria and bacteria have been recorded. Snow petrels feed in the ocean and nest on the mainland.

NEXT



UNDER CERTAIN WEATHER CONDITIONS, VISIBILITY IS VERY LOW AND THE LANDMARKS DISAPPEAR. WHAT IS THIS KNOWN AS ?



Blackout

Hoar frost

Whiteout

Halo

Incorrect !

TRY AGAIN

Correct!

It is known as **Whiteout**. Visibility is greatly reduced by snow and strong wind.

What do the other words mean?

Blackout

Power failure on a large scale.

Hoar frost

Spiky, needle-like ice which forms when water vapour freezes onto surfaces cooled by radiation.

Halo

Circle around the Moon or the Sun, due to the refraction of light through ice crystals.

NEXT



YOU ARE WORKING OUTSIDE IN THE SUNSHINE AND YOU PUT A BLACK TOOL DOWN ON THE ICE. ON GOING TO PICK IT UP YOU REGRET PUTTING IT THERE. WHY ?

- ▶ IT HAS FLOWN AWAY
- ▶ A SKUA (BIRD) HAS TAKEN IT
- ▶ YOU NEED TO DIG INTO THE ICE TO GET IT BACK
- ▶ A GROUP OF INQUISITIVE PENGUINS PREVENT YOU FROM GETTING IT



Incorrect !

TRY AGAIN

Incorrect !

The station is about 220 km from the coast.
There are no penguins near the station.

TRY AGAIN

Correct!

The black tool absorbs heat from the sun. When you put it on the ice, the ice around the tool melts and it goes into the ice. **We'll have to dig into the ice to get it back!**

NEXT



ANY FIELD TRIP REQUIRES CAREFUL PLANNING. WHAT SOURCES OF INFORMATION ARE USED BY GLACIOLOGISTS DURING THE PREPARATION PHASE ?

- ▶ SATELLITE PHOTOS
- ▶ MAPS OF THE STUDY AREA
- ▶ INFORMATION FROM OTHER SCIENTISTS AND FIELD GUIDES
- ▶ ALL OF THE ABOVE



Incomplete answer !

TRY AGAIN

Correct!

Any field trip requires a detailed planning to determine exactly where the work will be carried out, the materials needed, the sources of energy to operate the equipment in the field, organization of the field work and availability of support staff.

In this preparation phase, scientists use **satellite photographs, existing maps produced as part of research projects and other information available from people who have already worked in the study area.**

Planning meetings are organized to prepare the logistical and operational aspects to ensure the smooth and safe running of the expedition.

NEXT



YOU ARE GOING ON EXPEDITION TO THE ANTARCTIC PLATEAU. YOU MUST EQUIP YOURSELF WELL TO PROTECT YOURSELF FROM...



The cold

The wind

The UV radiation

All three

Incomplete answer !

TRY AGAIN

Correct!

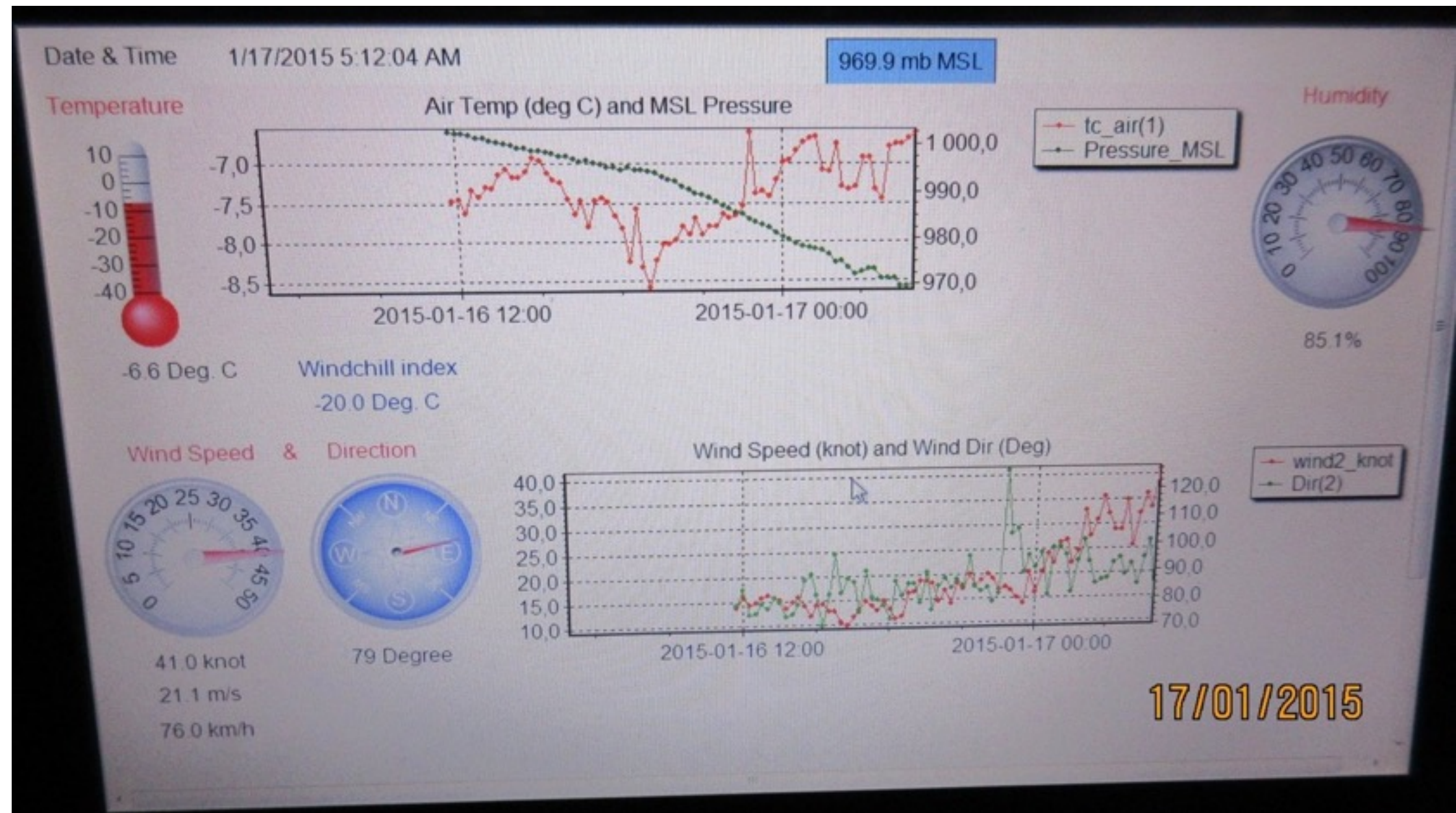
You need to protect yourself from the **cold, wind and UV radiation**.
The wind strengthens the feeling of cold.

Technical mountaineering clothing is used in Antarctica. Multiple layers are worn during activities such as driving a snowmobile, where you are particularly exposed to cold and wind. Special care should be taken of extremities (hands, feet, face, head) to prevent frostbite. High factor sunscreen should be used on any exposed skin to protect from UV rays, which are particularly strong due to the hole in the ozone layer.

NEXT



HERE ARE THE METEOROLOGICAL CONDITIONS ON THE 17TH JANUARY 2015. WHAT IS THE WEATHER LIKE?



Fine

Very cold

Stormy

Sunny

Incorrect !

TRY AGAIN

Correct!

There is a **storm**. The display shows a wind speed of 21.1 m/s (41 knots).



NEXT



THE MAINTENANCE AND CHECKING OF ALL THE VEHICLES AND EQUIPMENT ARE ESSENTIAL FOR SAFETY. BEFORE LEAVING FOR THE FIELD, IT IS ALSO ABSOLUTELY NECESSARY TO...



Check the radios

Tell the station leader

Check the weather

All three

Incomplete answer !

TRY AGAIN

Correct!

Authorization from the station leader is needed before leaving the station. The destination, team members and the return time must be provided. No solo travel is allowed.

Equipment and radios are checked before leaving the station and a guide accompanies the group if necessary. The team will maintain regular radio contact with the station. If a radio transmission does not occur at the scheduled time, a relief expedition will get ready to go to check the team as quickly as possible.

NEXT



THE RESEARCH CAMPAIGN IS OVER. THE LAST PHOTO OF THE TEAM IS TAKEN BEFORE GETTING ON THE AIRCRAFT AND LEAVING ANTARCTICA. WHEN YOU GET BACK, WHAT DO YOU NOTICE THE MOST ?



Running water

Noise & darkness

The temperature

Communication

Incorrect !

TRY AGAIN

Correct!

In Antarctica, during the research season, it is day 24/24 and the light is very strong. On his return, Roger Radoux, explained:

"... I was no longer used to noise and darkness. At the South Pole, it is day 24/24 and there is only the immensity around us, with only the sound of the wind ... "

NEXT

Well Done !

You can now do this quiz again or visit www.educapoles.org for other quizzes, teaching files and educational projects for the polar regions, polar science, climate change and sustainable energy.

START AGAIN

A project of:



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