



ARCTIC OCEAN
SCIENTIFIC ADVENTURES

EDUCATIONAL PACKAGE

NO.10

Dimethylsulfur (DMS)

GENERAL NOTIONS

What are the 3 major roles of DMSP in the algal cell ?

1. **Cryoprotection**

2. **Osmoregulation**

3. **Antioxidant**

What are the 2 major roles of DMS at the level of 1) trophic network and 2) climate ?

1. **Chemical mediator (trophic network)**

2. **Cooling gas (climate)**

DMS cycle

a) Write the correct letters in the circles in the diagram :

A - Phytoplankton
B - Bacteria

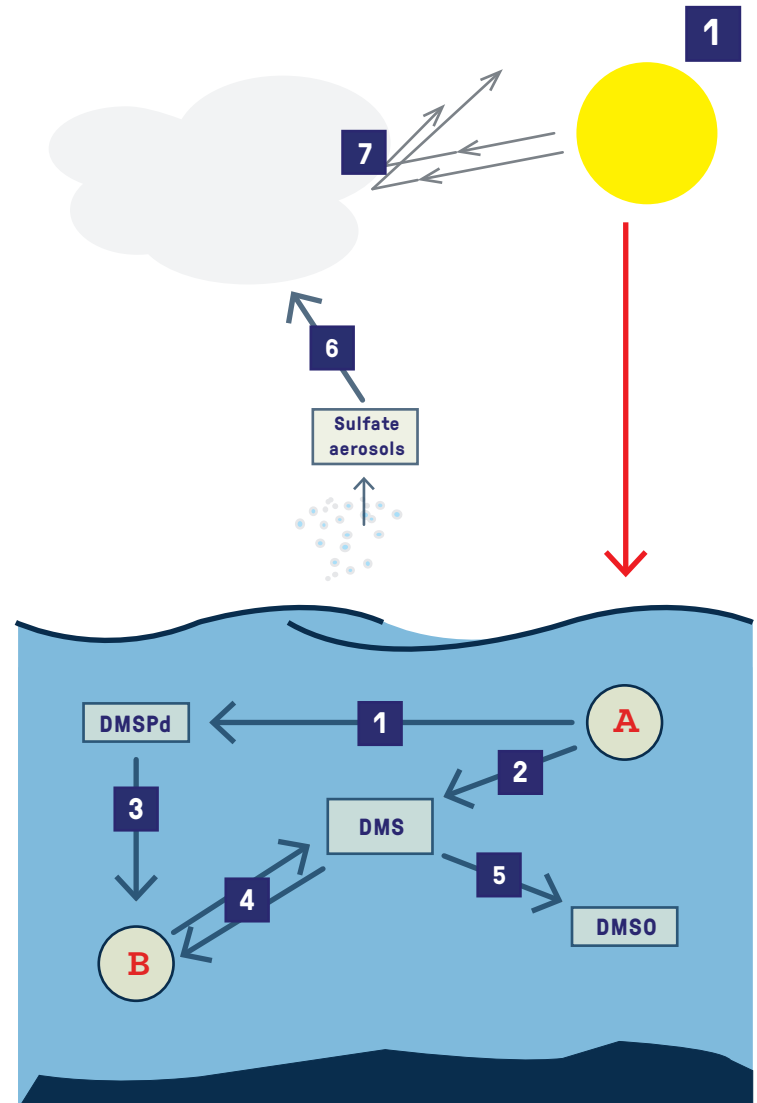
b) Link the following processes with the numbers in the diagram

- Exudation, lysis & grazing 1
- Cloud formation 6
- Photooxidation 5
- Assimilation 3
- Increase in albedo 7
- Direct exudation 2
- Consumption & production 4

c) What is the missing arrow that links the oceanic and atmospheric processes of the cycle ? Draw it!

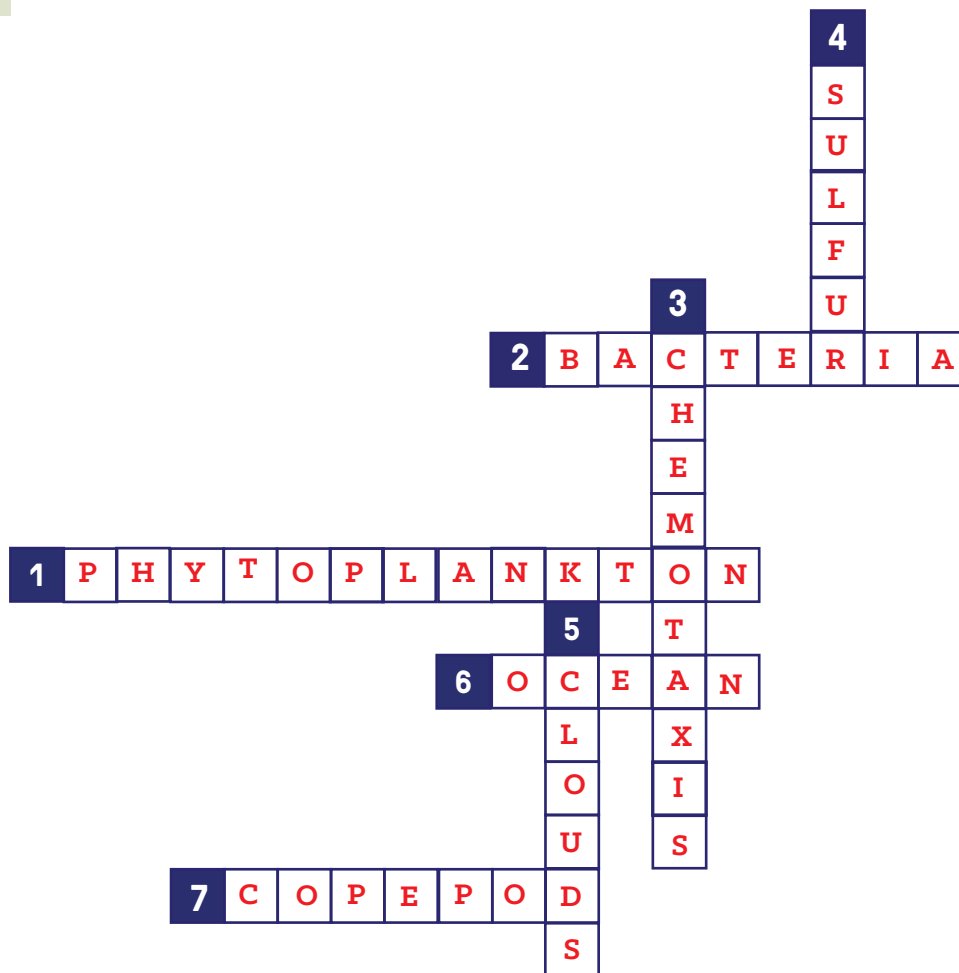
To which process does it correspond ?

This is solar radiation that may or may not stimulate phytoplankton blooms.



Let's sum up...

Using the definitions below, try to find the right answers to complete these crossword puzzles !



1. Photosynthetic organism, main producer of the DMS precursor, DMSP.

2. Organism that cleaves DMSPd to DMS and acrylate or metabolizes it to meet its sulfur requirements.

3. Process by which organisms may be attracted to certain chemicals, enabling them to detect their food.

4. Chemical element whose cycle is greatly influenced by DMS, particularly by atmospheric fluxes.

5. DMS contribute to their formation via condensation nuclei.

6. Area where DMS is produced by photosynthetic organisms.

7. Small microzooplankton crustacean able to “smell” DMS to detect preys.