



ARCTIC OCEAN  
SCIENTIFIC ADVENTURES

## EDUCATIONAL PACKAGE

NO.11

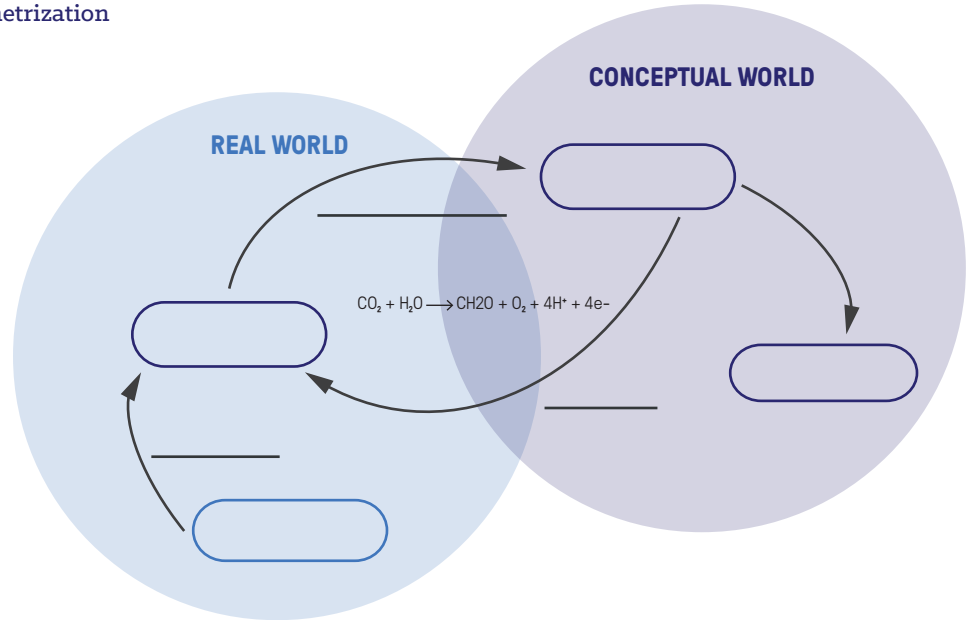
Mathematical  
models

## GENERAL NOTIONS

Complete the drawing using the following words to describe a mathematical model.

Modelling  
Description  
Observations  
Parametrization

Predictions  
Phenomenon  
Validation



Complete the following sentence

conditions  
representation

model  
observations

theory  
phenomenon

predicts

A \_\_\_\_\_ is a simple \_\_\_\_\_ of a complex \_\_\_\_\_. It allows elaboration of a \_\_\_\_\_ based on \_\_\_\_\_ and \_\_\_\_\_ what would happen under certain \_\_\_\_\_.

## MODELLING IN THE GREEN EDGE PROJECT

Why use models in the GreenEdge mission ?

- \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What are the 4 major components studied in modelling natural science processes in the GreenEdge project ?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

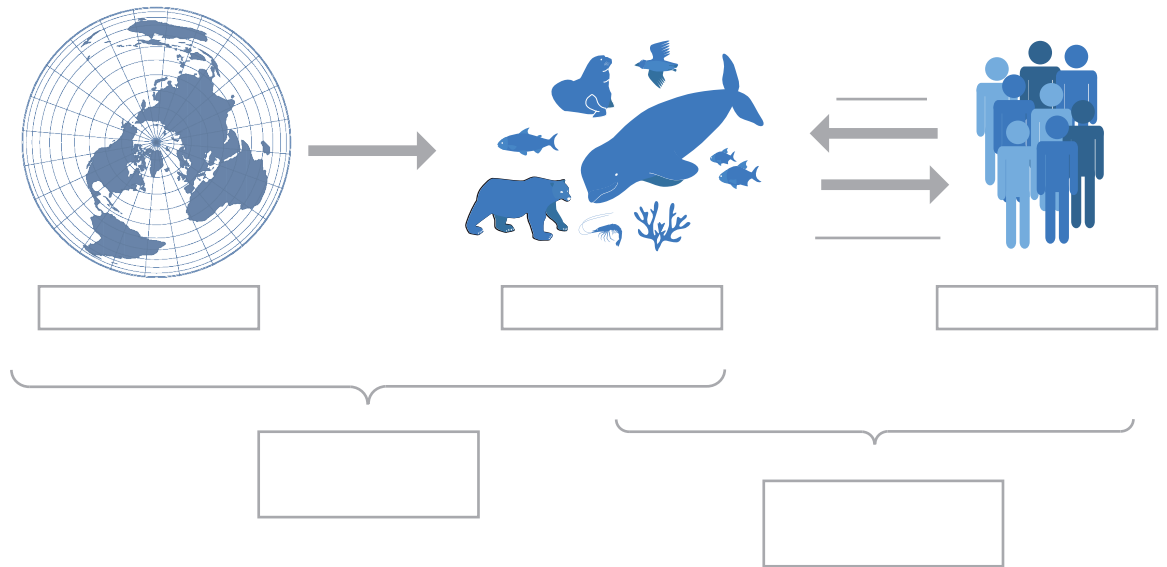
Caption this drawing with the following words

- Arctic species
- Harvest

- Human health
- Environment

- Resources
- Ecosystem modelling

- Food security models



## ARCTIC ECOSYSTEM MODELLING

In order to model the Arctic ecosystem, scientists use coupled biological physical models.

Why couple these two types of models ?

What is the major objective of biological models in GreenEdge ?

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Physical models developed in GreenEdge are validated using observational data collected in the field using different instruments.

Match each instrument to its definition.

Measures speed  
current

■

■

CTD probe

■

■



Measures water  
turbulence

■

■

Current meter (ADCP)

■

■



Measures conductivity,  
temperature and depth

■

■

SCAMP

■

■



FOOD SECURITY MODELS

The aim is to develop a participative model connecting environmental changes with food security and health issues among Inuit populations.

What is a “participative model” ?

What are the interests of this kind of project ?

1.

2.

3.

4.

