### 1.1 Systems in physical geography

#### Section outline
The concept of systems in physical geography and their application to the water and carbon cycles.

#### Section outcomes
By the end of this section, most students should be able to:
- understand the concept of a system and know the meaning of the terminology associated with it
- understand the difference between an 'open' system and a 'closed' system
- appreciate how systems terminology can be applied to the water and carbon cycles
- be able to represent the water and carbon cycles in the form of a systems diagram
- begin to appreciate the importance of the two cycles and how they are linked together

#### Key words
- input
- output
- stores
- flows
- feedback
- dynamic equilibrium
- open system
- closed system

#### What’s on Kerboodle?
- Digital Books
  - Student Book: Pages 8-9
  - Teacher Handbook:

#### Resources
- Chapter 1 Glossary
- Chapter 1 Glossary worksheet

#### Assessment
- Chapter 1 On your marks
- Chapter 1 Test yourself

#### Key skills
Understanding and calculating simple mass balance.

#### Specification key ideas
- 3.1.1.1 Water and carbon cycles as natural systems

#### Exam link
- AL: Paper 1 Section A (core)
- AS: Paper 1 Section A (optional)
### 1.2 The global water cycle

#### Section outline
The global water cycle and its stores.

#### Key words
- soil water budget
- lithosphere
- hydrosphere
- cryosphere
- atmosphere

#### What’s on Kerboodle?
- Student Book: Pages 10-11
- Teacher Handbook:

#### Section outcomes
By the end of this section, most students should be able to:
- understand the concept of the water cycle system and know the meaning of the terminology associated with it
- understand the concepts of ‘stores’ and ‘transfers’ in the context of the water cycle
- understand the breakdown of global water storage and appreciate the relative proportions of freshwater stores
- interpret and understand the distribution of major freshwater stores – ice caps and groundwater aquifers
- understand the factors affecting global aquifer distribution
- appreciate the potentially unsustainable nature of fossil aquifers

#### Key skills
Drawing and annotating diagrams of physical systems.

#### Resources
- Chapter 1 Glossary
- Chapter 1 Glossary worksheet

#### Specification key ideas

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#### Exam link

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| Chapter 1 On your marks
| Chapter 1 Test yourself |

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