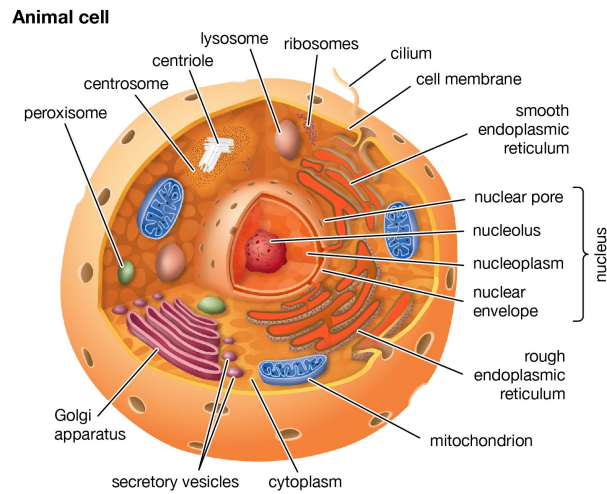




Summer Homework for A Level Biology

Get ready for A-level Biology



© Encyclopædia Britannica, Inc.

Cells

The cell is a unifying concept in biology, you will come across it many times during your two years of A level study. Prokaryotic and eukaryotic cells can be distinguished on the basis of their structure and ultrastructure. In complex multicellular organisms cells are organised into tissues, tissues into organs and organs into systems. During the cell cycle genetic information is copied and passed to daughter cells. Daughter cells formed during mitosis have identical copies of genes while cells formed during meiosis are not genetically identical

Read the information on these websites (you could make more Cornell notes if you wish):

<http://www.s-cool.co.uk/a-level/biology/cells-and-organelles>

<https://alevelbiology.co.uk/notes/cell-structure/>

And take a look at these videos:

<https://www.youtube.com/watch?v=gcTuQpuJyD8>

<https://www.youtube.com/watch?v=L0k-enzoeOM>

<https://www.youtube.com/watch?v=qCLmR9-YY7o>

Task 1:

Produce a one page revision guide to share with your class in September summarising one of the following topics: Cells and Cell Ultrastructure, Prokaryotes and Eukaryotes, or Mitosis and Meiosis.

Whichever topic you choose, your revision guide should include:

Key words and definitions

Clearly labelled diagrams

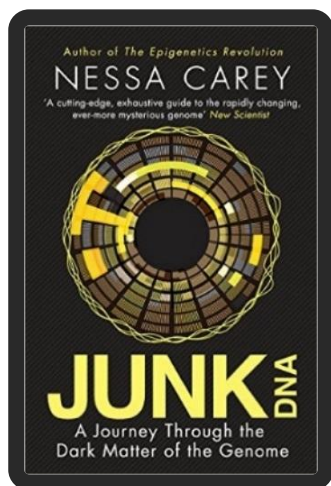
Short explanations of key ideas or processes.

Task 2:

Answer the questions on the insert sheet and hand in September

Book Recommendations

Kick back this summer with a good read. The books below are all popular science books and great for extending your understanding of Biology

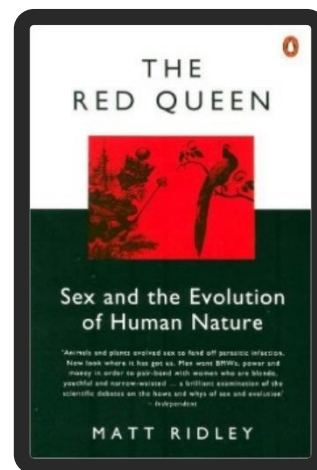


Junk DNA

Our DNA is so much more complex than you probably realize, this book will really deepen your understanding of all the work you will do on Genetics. Available at amazon.co.uk

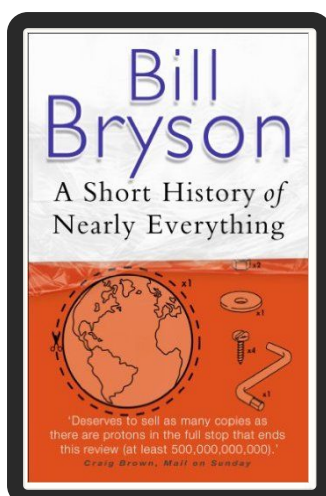
The Red Queen

Its all about sex. Or sexual selection at least. This book will really help your understanding of evolution and particularly the fascinating role of sex in evolution. Available at amazon.co.uk



A Short History of Nearly Everything

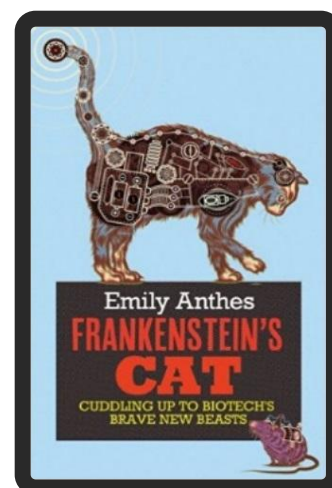
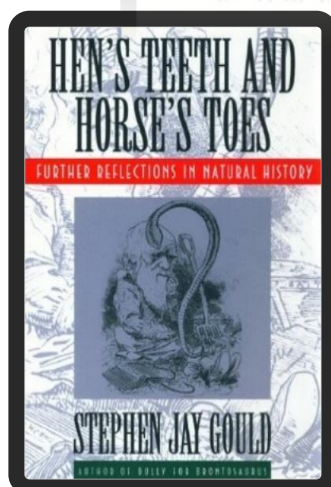
A whistle-stop tour through many aspects of history from the Big Bang to now. This is a really accessible read that will re-familiarise you with common concepts and introduce you to some of the more colourful characters from the history of science! Available at amazon.co.uk



Studying Geography as well?

Hen's teeth and horses toes

Stephen Jay Gould is a great Evolution writer and this book discusses lots of fascinating stories about Geology and evolution. Available at amazon.co.uk



An easy read..

Frankenstein's cat

Discover how glow in the dark fish are made and more great Biotechnology breakthroughs. Available at amazon.co.uk

Movie Recommendations

If you have 30 minutes to spare, here are some great presentations (and free!) from world leading scientists and researchers on a variety of topics. They provide some interesting answers and ask some thought-provoking questions. Use the link or scan the QR code to view:

A New Superweapon in the Fight Against Cancer

Available at :

http://www.ted.com/talks/paula_hammond_d_a_new_superweapon_in_the_fight_agai_nst_cancer?language=en

Cancer is a very clever, adaptable disease. To defeat it, says medical researcher and educator Paula Hammond, we need a new and powerful mode of attack.



Why Bees are Disappearing

Available at :

http://www.ted.com/talks/marla_spivak_why_bees_are_disappearing?language=en

Honeybees have thrived for 50 million years, each colony 40 to 50,000 individuals coordinated in amazing harmony. So why, seven years ago, did colonies start dying en-masse?

Why Doctors Don't Know About the Drugs They Prescribe

Available at :

http://www.ted.com/talks/ben_goldacre_what_doctors_don_t_know_about_the_drugs_they_prescribe?language=en

When a new drug gets tested, the results of the trials should be published for the rest of the medical world — except much of the time, negative or inconclusive findings go unreported, leaving doctors and researchers in the dark.



Growing New Organs

Available at :

http://www.ted.com/talks/anthony_atala_growing_organs_engineering_tissue?language=en

Anthony Atalla's state-of-the-art lab grows human organs — from muscles to blood vessels to bladders, and more.

Ideas for Day Trips

If you are on holiday in the UK, or on a staycation at home, why not plan a day trip to one of these :

Glasgow Science
Centre - Glasgow

Dundee Science
Centre - Dundee

The Lakeland Wildlife
Oasis - Milnthorpe

Scottish Seabird centre –
North Berwick

W5 - Belfast

Life –
Newcastle-upon-Tyne

Anglesey Sea Zoo -
Anglesey

Cambridge Science
Centre - Cambridge

Think-tank -
Birmingham

Horniman
Museum and
Gardens
- London

National Museum -
Cardiff

Centre of the Cell -
London

The Eden Project -
Cornwall

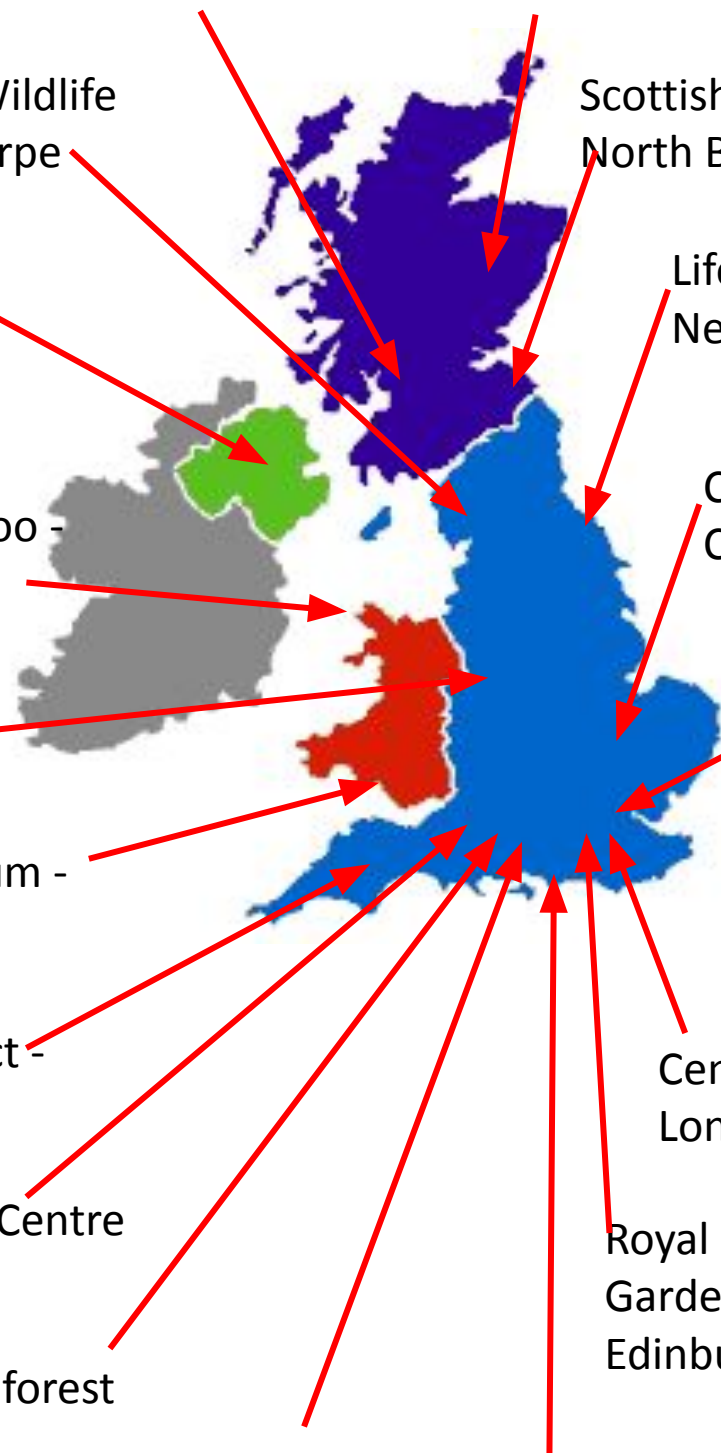
Bristol Science Centre
- Bristol

Royal Botanic
Gardens – Kew -
Edinburgh

The Living Rainforest
- Newbury

Oxford University
Museum of Natural
History - Oxford

National Marine
Aquarium - Plymouth



- 1 (a) Table 6.1 gives the functions of certain organelles in a eukaryotic cell.

Complete the table by stating the function associated with each organelle.

The first row has been completed for you.

Organelle	Function
nucleus	contains the genetic material
smooth endoplasmic reticulum
lysosome
ribosome

Table 6.1

[3]

- 4 (a) Complete Table 5.1 below which compares different types of

Place a tick (✓) or a cross (✗) in each box to indicate whether the feature is present or absent.
The first row has been completed for you.

Feature	Cell type		
	Plant cell	Animal cell	Bacterial cell
mitochondria	✓	✓	✗
chloroplasts			
cellulose cell wall			
centrioles			
ribosomes			

Table 5.1

[4]

3 Fig. 1.1 is a diagram of a plant cell.

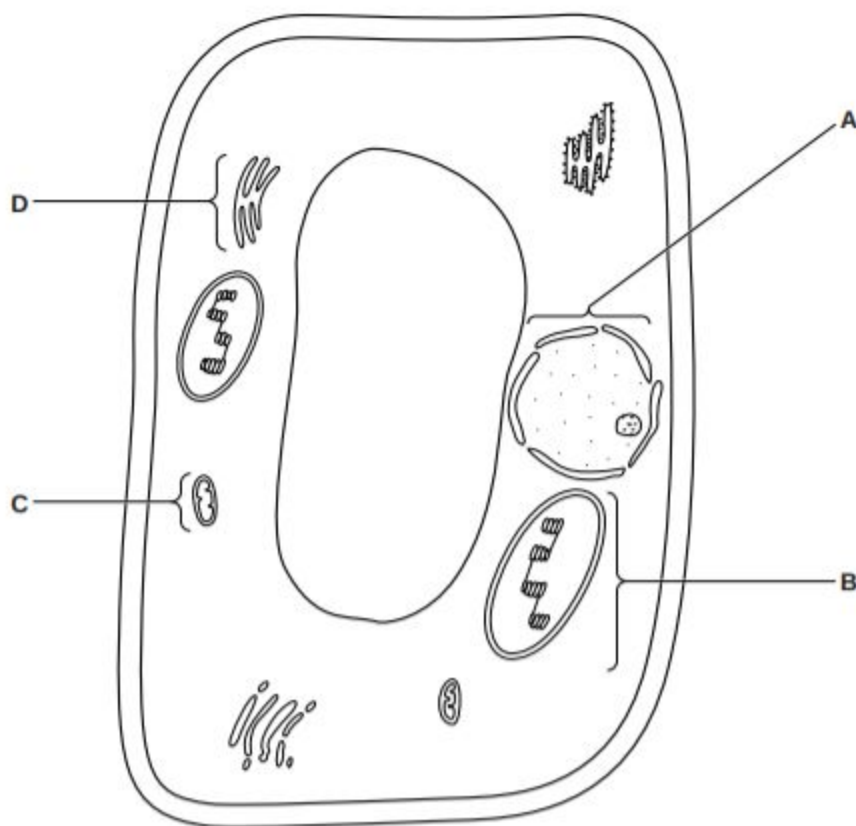


Fig. 1.1

(a) (i) Name the cell components labelled A and B.

A

B

[2]

(ii) State the **functions** of the components labelled C and D.

C

.....

.....

D

.....

.....

[2]

