

GCSE BIOLOGY

Y9 NEWSLETTER OCTOBER 2020

RIPLEY ST THOMAS
CHURCH OF ENGLAND ACADEMY



**Dear Parents/Guardians,
Welcome to October!**

It has been absolutely wonderful to welcome back Year 9 these past few weeks. We've been really impressed with their enthusiasm and dedication to getting on with this new normal. I wanted to outline how we are approaching this year for them. As ever, if you have any questions or concerns please get in touch via Parentline.

**Miss Montgomery
Subject Leader, Biology**

TOPICS UNTIL CHRISTMAS:

**Chapter 1: Cell Structure
Chapter 1: Cell Transport
Chapter 2: Cell Division**

*There will be a Ch1 Cell Structure Assessment in the WB 12th October. Your child's teacher will give them the exact date shortly.
The Ch1 Cell Transport Assessment will roughly take place in the WB 23rd November.*

Attachments:

I have included checklists and key words for the current chapters your child will be studying. They have also been given these in class. These will be really useful for the end of chapter assessments. I have also included a general help sheet on revision.

FIREFLY:

If your child misses a lesson, they should log into Firefly and follow:
Science - Blended Learning

HOMEWORK:

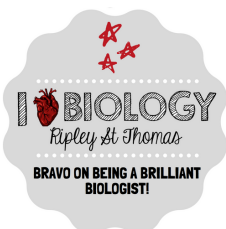
Your child will get set 2 homeworks a fortnight, 1 based on the current topic (an exam style question), and 1 based on a topic from lockdown (learning style - quiz/mind map etc).

USEFUL LINKS:

<https://ripley.fireflycloud.net/science/gcse-science/gcse-biology/> - (The Biology page)
<https://www.kerboodle.com/app> (Online Textbook access)
<https://quizlet.com/en-gb/> (Useful for revising key words)
<https://senecalearning.com/en-GB/> (Your child will have a class set up with revision Qs)

**"THE COMEBACK
IS ALWAYS
STRONGER THAN
THE SETBACK"**

Unknown



A student's guide to

EFFECTIVE REVISION



find what works for you!



Lets get started!

Leaving all your revision and cramming at the last minute is stressful and has limited success. The earlier you start revising, the more likely you are to effectively cover all the content and remember it



Create a suitable space

Find a quiet spot away from distractions such as the TV/your phone and keep your things all in one place, organized by subject!



Put a plan in place

Work out how much time you have and how long you can spend on each subject/topic- make sure all subjects get adequate time set aside!



Take regular breaks

It is possible to work too hard or for too long in one go! Your brain needs a rest to help it process information.

REVISION STRATEGIES:



Create your own revision resources using Flashcards.

Method 1: Write a question on one side of the card and the answer on the back.

Method 3: Write the quote on one side, and your thoughts/themes on the back



Method 2: Write a key term or concept on one side, definition on the back

Method 4: Draw a diagram on one side, and the sequence and process on the back

You can colour code your flash cards into topics, case studies or subjects!



Dual Coding- putting a visual next to your written information!

Your images must be relevant to the information you have written. Therefore if you were to see the image without the text, it should trigger you to remember/recall the information



Quizlet is another online platform in which you can create your own flashcards but digitally. You can access hundreds of other quizzing resources for your chosen topic/subject created by other users too!



Seneca Learning website:

Seneca has been designed by cognitive scientists to help students remember topics better and reduce their stress levels. You can access revision notes on each of your topics and then take quick tests to check your learning.



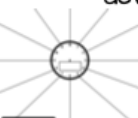
Switch the subject of conversation:

It's so easy to be distracted by friends or be tempted to put revision on the backburner for a quick chat so get the best of both worlds, quiz each other. Showcase all your knowledge to your friend, share ideas, you never know, they may have an idea or understanding about something, that you haven't!



Concept maps/mind maps:

A popular method is concept/mind mapping. Put a question or a topic in the center of the page and develop the idea into subtopics, including facts, chains of development, themes and/or quotes.



Revision clocks:

These sheets are available with a quick google. Broken into 12 sections this is a good way to break down a topic into small manageable chunks. You can even break it down into 5 minute chunks to see how much you remember!



Deliberate practice

Set time aside to practice what you will be doing in the exam - answering exam questions! Ask your teacher for questions!



Personal learning checklists:

Using the specification, create a list of topics you need to know and RAG your confidence. Ask your teacher first as they may have these already.

Revision guides/ knowledge organisers:

Use revision guides or knowledge organisers to help you focus in on what you need to learn. Use these in conjunction with another method mentioned.



Provide someone at home with a list of key terms or questions:

Provide someone at home with a list of key terms or questions that you want to master this week, every time they see you, they have to ask you one of these questions! It may even replace the usual conversation at the dinner table!

REVISION MISCONCEPTIONS:

There are many ways to revise, yet there are certain activities that make you feel like you are effectively revising, but in most cases, are just superficial!



Highlighting: More often than not we highlight text without actually thinking about why we are highlighting what we are highlighting. "To highlight everything, is to highlight nothing!"



Re-reading/summarising: Ensure that you are reading and making notes with an intended purpose, simply reading text is unlikely to provide you with information that will make its way into your long term memory!



TOP TIP: Colour code into themes to ensure your notes have a logical thinking process behind them

L.pellegrino

CH1: CELL STRUCTURE

Chapter 1 Cell Structure Key Words



Key word	Definition
Resolving power	A measure of the ability to distinguish between 2 separate points that are very close together.
Nucleus	Organelle found in many living cells containing genetic information surrounded by the nuclear membrane.
Cytoplasm	The water-based gel in which the organelles of all living cells are suspended and most of the chemical reactions of life take place.
Cell Membrane	The membrane around the contents of a cell that controls what moves in and out of the cell.
Mitochondria	The site of aerobic cellular respiration in a cell.
Ribosome	The site of protein synthesis in a cell.
Algae	Simple aquatic organisms that make their own food by photosynthesis.
Cell wall	The rigid structure around plant and algal cells. It is made of cellulose and strengthens the cell.
Cellulose	The complex carbohydrate that makes up plant and algal cell walls and gives them strength.
Chloroplast	The organelles in which photosynthesis takes place.
Chlorophyll	The green pigment found inside chloroplasts.
Permanent vacuole	Space in the cytoplasm filled with cell sap.
Eukaryotic cells	Cells from eukaryotes that have a cell membrane, cytoplasm and the genetic material is enclosed in a nucleus.
Bacteria	Single celled prokaryotic organisms.
Prokaryotic cells	From prokaryotic organisms which have a cytoplasm surrounded by a cell membrane and a cell wall which does not contain cellulose. The genetic material is a DNA loop that is free in the cytoplasm and is not enclosed by a nucleus. Sometimes there are one or more small rings of DNA called plasmids.
Ventilated	Movement of air or water into and out of the gas exchange organ, for example lungs or gills.
Alveoli	Tiny air sacs in the lungs that increase the surface area for gas exchange.
Stomata	Openings on the underside of a leaf. They open and close by guard cells allowing gases to enter and leave the leaf.

Chapter 1 Cell Structure Checklist



Your chapter 1 Cell Structure test is on _____ Please ensure you revise. This can be done in lots of ways:

- Making mind maps
- Making flash cards
- Making revision notes
- Quizzing your parents/your parents quiz you.
- Doodle

You should know...	Revision notes	Revised	☺ ☹
The differences between light and electron microscopes.			
The definitions of magnification and resolution.			
The structures found inside animal cells and their functions.			
The structures found inside plant cells and their functions.			
How to set up and observe onion cells & cheek cells.			
The difference between eukaryotic and prokaryotic cells.			
How to calculate magnification using the equation/triangle.			
How nerve, muscle and sperm cells are adapted.			
How root hair, photosynthetic, xylem & phloem cells are adapted.			

CH1: CELL TRANSPORT

Chapter 1: Transport Key Words List



Key word	Definition
Diffusion	The spreading out of particles in any substance in a solution or gas, resulting in the net movement of particles from an area of high concentration to an area of low concentration down a concentration gradient.
Partially Permeable membrane	A membrane that allows only certain substances to pass through.
Osmosis	The diffusion of water through a partially permeable membrane from a dilute solution to a concentrated solution down a concentration gradient.
Isotonic	A solution that is the same concentration as the cell contents.
Hypertonic	A solution that is more concentrated than the cell contents.
Hypotonic	A solution that is less concentrated than the cell contents.
Turgor	The pressure inside a plant cell exerted by the cell contents pressing on the cell wall.
Plasmolysed	The state of plant cells when so much water is lost from the cell by osmosis that the vacuole and cytoplasm shrink and the cell membrane pulls away from the cell wall.
Active Transport	The movement of substances from a low concentration to a high concentration against a concentration gradient, requiring energy from respiration.
Ventilated	Movement of air or water into and out of the gas exchange organ, for example lungs or gills.
Alveoli	Tiny air sacs in the lungs that increase the surface area for gas exchange.
Stomata	Openings on the underside of a leaf. They open and close by guard cells allowing gases to enter and leave the leaf.

You should know...	Revision notes	Revised	😊 ☹️
How diffusion takes place & why it is important.			
Factors that affect the rate of diffusion.			
How osmosis differs from diffusion.			
Why osmosis is so important in animal and plants cells.			
How active transport works and examples of this.			
How surface area to volume ratio differs with the size of an organism.			
Why large multicellular organisms need specialised exchange surfaces and examples of this.			

CH2: CELL DIVISION



Chapter 2 Cell Division Key Words

Key word	Definition
Cell cycle	Three stage process of cell division that involves mitosis and the formation of two identical daughter cells.
Mitosis	Part of the cell cycle where one set of new chromosomes is pulled to each end of the cell forming two identical nuclei during cell division.
Differentiate	The process where cells become specialised for a particular function.
Stem cell	Undifferentiated cells with the potential to form a wide variety of cell types.
Adult stem cell	Stem cells that are found in adults and differentiate and form a limited number of cells.
Cloning	The production of identical offspring by asexual reproduction.
Zygote	The single new cell formed by the fusion of gametes in sexual reproduction.
Embryonic stem cell	Stem cells from an early embryo that can differentiate to form the specialised cells of the body.
Therapeutic cloning	The process where an embryo is produced that is genetically identical to the patient so the cells can then be used in medical treatments.

Your chapter 2 test is on _____. Please ensure you revise. This can be done in lots of ways:

- Making mind maps
- Making flash cards
- Making revision notes
- Quizzing your parents/your parents quiz you.
- Doodle
- BBC Bitesize

However, you choose to revise, you should bring evidence to the lesson on _____. Please ask your parents to sign if they have quizzed you.

You should know...	Revision notes	Revised	☺☺
The role of chromosomes in cells.			
The importance of the cell cycle & the process of mitosis.			
The differences between differentiation in plants and animals.			
The production and use of plant clones.			
The definition of a stem cell.			
How stem cells can be used in medical treatments.			
The ethics surrounding the use of embryonic stem cells.			