RIPLEY ST THOMAS

GCSE BIOLOGY

Y11 NEWSLETTER OCTOBER 2020

RIPLEY ST THOMAS
CHURCH OF ENGLAND ACADEMY

I BIOLOGY Ripley St Thomas

Dear Parents/Guardians,
Welcome to October!

It has been absolutely wonderful to welcome back Year 11 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:

11J1 Separate:
Homeostasis in Action - The Kidney, Transplants & Dialysis = Chapter 12 Assessment. WB 6th OCT * *Only separates content hence the removed chapter & subsequent numbers* *
Reproduction - Reproduction, Meiosis, Inheritance & Genetics = Assessment.

11J2,J3,T1,T2,T3 Combined Higher:
11J4,J5,T4,T5 Combined Foundation:
Reproduction - Reproduction, Meiosis, Inheritance & Genetics = Assessment. WB 19th OCT
Variation & Evolution - Variation, Natural Selection, Selective Breeding, Genetic Engineering = Assessment.

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).

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 both for the end of chapter assessments but also for Mocks too. I have also included a general help sheet on revision.

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BRAVO ON BEING A BRILLIANT BIOLOGIST!

science AT RIPLEY ST THOMAS
Bring out the scientist in everybody!

"THE COMEBACK IS ALWAYS STRONGER THAN THE SETBACK"

Unknown

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)

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

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!

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!

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

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

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

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!

L.pellegrino

11J1 ONLY: HOMEOSTASIS

Chapter 12 Key Words List

Key word	Definition
Dialysis	The process of cleansing the blood through a dialysis machine when the kidneys have failed.
Selective Reabsorption	The process in the kidney where the materials needed in the body such as glucose, some mineral ions and water are reabsorbed back into the blood from the filtrate.
Urea	The waste product formed by the breakdown of excess amino acids in the liver.
Vasodilation	The blood vessels that supply the skin capillaries dilate.
Vasoconstriction	The blood vessels that supply the skin capillaries constrict.
ADH	Hormone which regulates the water balance of the blood by changing the amount of water reabsorbed by kidney tubules.
Homeostasis	The maintenance of a constant internal environment.
Thermoregulatory centre	Monitors and controls body temperature.

Chapter 12 Checklist

Your chapter 12 Homeostasis in Action 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.
- Doddle
- Quizlet

You should know...	Revision Notes?	Revised?	☺☹
I can explain in detail how mechanisms lower or raise body temperature.			
I can explain why it is dangerous if the body temperature is too high or too low.			
I can calculate percentage changes in volume of water lost or gained by the body.			
I can suggest an effect of liver failure on the body.			
I can explain the link between high levels of protein in the diet and an increase in urea concentration of urine.			
I can apply knowledge of the processes of filtering and selective reabsorption to diagnose problems and suggest treatments for patients using results from a urine test.			
I can explain how the production of ADH will change in given situations.			
I can explain how these changes will affect the amount of water in the urine.			
I can suggest and explain suitable concentrations of substances in dialysis fluid.			
I can apply knowledge of what affects the rate of diffusion, to explain how dialysis is made efficient.			
I can evaluate in detail a model of kidney dialysis.			
I can explain why family members are usually a good choice for an organ donor.			
I can use economic, social and ethical arguments to evaluate treating kidney failure by dialysis and transplant.			

ALL CLASSES

Key Words List: Reproduction

Key word	Definition
Asexual reproduction	Involves only one individual and the offspring is identical to the parent. There is no fusion of gametes or mixing of genetic information.
Sexual reproduction	Involves the joining (fusing) of male and female gametes, producing genetic variation in the offspring.
Meiosis	Two stage process of cell division that reduced the chromosome number of daughter cells. It is involved in making gametes for sexual reproduction.
Natural Selection	The process by which evolution takes place. Organisms produce more offspring than the environment can support. Only those that are most suited to their environment will survive to breed and pass on their useful characteristics to their offspring.
Bases (DNA)	Nitrogenous compounds that make up part of the structure of DNA and RNA. They are represented by the letters A, C, T and G.
Nucleotide	A molecule made up of a sugar, a phosphate group and one of four different bases. They are key units in the structure of DNA and RNA.
Mutation	A change in the genetic material of an organism.
Alleles	Different forms of the same gene sometimes referred to as variants.
Homozygous	A genotype with two identical alleles for a characteristic.
Heterozygous	A genotype with two different alleles for a characteristic.
Genotype	The genetic makeup of an individual for a particular characteristic, for example hair or eye colour.
Phenotype	The physical appearance/biochemistry of an individual for a particular characteristic.
Dominant allele	The phenotype will be apparent in the offspring even if only one of the alleles is inherited.
Recessive	A phenotype that will only show up in the offspring if both of the alleles coding for that characteristic are inherited.
Sex chromosomes	Carry the information that determines the sex of an individual.
Polydactyly	A dominant inherited disorder that results in babies born with extra fingers and/or toes.
Cystic fibrosis	An inherited disorder that affects the lungs, digestive and reproductive system and is inherited through a recessive allele.
Carrier	A person with one copy of the recessive allele for a genetic disorder. They therefore have no symptoms of the disorder, but can pass the allele on to the next generation.
Genetic engineering	The process by which scientists can manipulate and change the genotype of an organism.

ALL CLASSES
*=11J1 ONLY

Reproduction Checklist

Your chapter 13 Reproduction 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.
- Doddle

You should know...	Revision notes	Revised	☺ ☹
The differences between asexual and sexual reproduction.			
The process of meiosis.			
The importance of meiosis in genetic variation.			
* Reproduction in fungi, plants & malaria parasites *			
The structure of DNA			
The importance of the human genome.			
* What bases & nucleotides are *			
* How proteins are made *			
* What gene expression and mutations are *			
How to create a punnet square/genetic diagram			
How to use a family tree.			
How Polydactyl is inherited.			
How cystic fibrosis is inherited.			
How embryo screening is done & the concerns.			

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ALL CLASSES

Key Words List: Variation and Evolution

Key word	Definition
Natural Selection	The process by which evolution takes place. Organisms produce more offspring than the environment can support. Only those that are most suited to their environment will survive to breed and pass on their useful characteristics to their offspring.
Mutation	A change in the genetic material of an organism.
Selective breeding	Speeds up natural selection by selecting animals or plants for breeding that have a required characteristic.
Clone	Identical offspring, produced by asexual reproduction.
Variation	Differences in the characteristics of individuals in a population, due to genetic causes or environmental.
Theory of evolution	States that all species of living things have evolved from simple life forms that first developed over 3 billion years ago.
Mutations	A change in the DNA.
Genetic Engineering	Genes can be transferred to the cells of animals and plants at an early stage of their development, so they develop desired characteristics.
Taking cuttings	An older and simpler method of producing many new identical plants from a parent plant.
Tissue culture	A modern technique for cloning plants using small groups of cells taken from a part of a plant.
***Adult cell cloning ***	Cloning by dividing an embryo.

Variation & Evolution Checklist

Your chapter 14 Variation & Evolution 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.
- Doddle
- Quizlet

You should know…	Revision Notes?	Revised?	☺ ☹
I can list some examples of variation in plants and categorise as being due to genetic, environmental causes or both			
I can suggest reasons why identical twins will start to show variation as they get older.			
I can use data to explain why studying identical twins helps scientists investigate which traits have genetic causes.			
I can explain how a mutation may lead to a new phenotype.			
I can describe the steps that take place during evolution by natural selection.			
I can analyse data from an activity modelling natural selection.			
I can explain the process of selective breeding.			
I can explain why humans have used selective breeding.			
I can explain what inbreeding is and why it is a problem in dog breeding.			
I can describe the steps used in genetic engineering to produce GM organisms.			
I can analyse data to describe why growing GM crops maybe be beneficial to a farmer.			
Describe the benefits of reproduction using cuttings or tissue culture rather than seeds, for plant growers.			
* I can describe how embryo transplants are produced and why they are clones. *			
* I can explain why the animal produced using adult cells cloning is a clone. *			
* I can design a flow chart to describe the process of adult cell cloning. *			
* I can list some benefits and drawbacks of adult cell cloning *			
I can outline the potential benefits and risks of genetic engineering.			
I can describe economic and ethical concerns that people may have about cloning animals.			