YEAR 9 A-F – BIOLOGY

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio WhatsApp Group/G mail/Google Classroom

Topic SB2c-Growth in plants& Topics: SB2b-Growth in animals.

L.O –Describe growth in organisms, including cell division, elongation and differentiation in plants & animals .

Sunday-Zero period(boys) **Sunday-7th period(girls)**	**Zoom Session**: SB2c-Growth in plants. **Resources**: Board works & Video link https://www.youtube.com/watch?v=11QOg4dLa3U https://www.youtube.com/watch?v=yVd9Z3av1Ew **Textbook page : 34 - 35.** **Students able to** ●Explain how do plants grow ●Describe how cell division, elongation & differentiation contribute to the growth and development of plant cell ●Explain how some specialized plant cells adapted to their function. **Discussion of questions pg.34&35**
Sunday -1st period(boys) **Wednesday-2nd period (girls)**	**Zoom: Describe** growth in organisms, including a cell division and differentiation in animals. Explain the importance of cell differentiation in the development of specialized cells **Resources**: Textbook, Video Links & Power point https://www.youtube.com/watch?v=UZwT-Jx8LzY&t=2s https://www.youtube.com/watch?v=UZwT-Jx8LzY&t=2s **Textbook page : 32-33.** **Students able to** ●**Define** the differentiation .●**List four** different kinds of differentiated cells in the body .●**Identify** few similarities and differences between the growth of plant and animal. ●**Describe** how cell division, elongation & differentiation contribute to the growth and development of an animal.
Sunday-2nd period(boys) **Wednesday -3rd period(girls)**	**GC:** Students write answers to textbook qns on Growth in plants pgs 34-35 and turn in their work on GC.. **Resources:** Textbook

YEAR 10 A-F – BIOLOGY

WEEK 26 (21st Feb to 25th Feb)
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SB4f-Tissue Culture in plants

L.O- Describe the process of tissue culture and its advantages in medical research and plant breeding programs.

Sunday – 3rd Period (Boys) **Sunday – 5th Period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Students must watch the video link given below on** https://www.youtube.com/watch?v=uSY6m1gqtYc Read Text book Page- 86-87 Complete questions 1-4 &Exam Style Question **Resources:** PowerPoint /Board work &Video link **Students able to:-** ●**Identify** cloning as an example of asexual reproduction that produces clones. ●**Define** a clone & tissue culture . ●**Describe** the process of micropropagation (tissue culture) in which small pieces of plants (explants) are grown *in vitro* using nutrient media**.** ●**Enlist** advantages of using tissue culture in plant breeding programs.

SB4f-Cloning in Animals

L.O- .O- Describe the process of cloning and its advantages in medical research and animal breeding programs.

Monday-4th period (Boys) **Tuesday -1st Period (Girls)**	**ZOOM SESSION/GOOGLE MEET** **Students must watch the video link given below on** https://www.youtube.com/watch?v=Krh7V3Z4Vr4 https://www.youtube.com/watch?v=hNq-y2Kg5CE&t=7s Read Text book Page- 86-87 Complete questions 5-7 **Resources:** PowerPoint /Board work &Video link

	Students able to:- ●**Describe** the process of cloning in animals-the Dolly Sheep ●**Enlist** advantages of using cloning in animal & plant breeding programme. ●**Explain** the use of Cloning & tissue culture techniques in medical research & plant breeding programme .

SB4f-Therapeutic Cloning

L.O- Describe the process of Therapeutic cloning and its advantages & disadvantages in medical research.

Tuesday -2nd Period (Girls) **Thursday-1st Period(Boys)**	**ZOOM SESSION/GOOGLE MEET** **Students must watch the video link given below on** https://www.youtube.com/watch?v=159GtbFMzj4 Read Text book Page- 86-87 Complete Questions S1,S2&E1 **Resources:** PowerPoint /Board work &Video link **Students able to:-** ●Define a Therapeutic cloning ●**Describe** the technique using Therapeutic Cloning**.** ●**Enlist** advantages and disadvantages of using Therapeutic cloning in medical research.
Wednesday-4th period (Girls) **Thursday-2nd Period (Boys)**	**GOOGLE CLASSROOM** **Students to complete the Text book questions Page 86-87 and 90-91and turn in the work within the assigned period.**

YEAR 11 A,D&E BIOLOGY (GCSE)

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio Whats App Group/G mail/Google Classroom.

Topics – SB8e- Core practical – Respiration rates

L.O – Investigate the rate of respiration in living organisms.

SB9c-Sampling technique

L.O – Explain how to determine the number of organisms in a given area using raw data from field-work techniques, including quadrats and belt transects.

Sunday- 6th period(girls)	**Zoom session: Discussion of Core Practical-Respiration rates** **Resources: Board works & Video link** **https://www.youtube.com/watch?v=WChr35ilD0o** **https://www.youtube.com/watch?v=WzO-gDnxhe8** **Students able to** ● Describe the use of respirometer ●Analyse the data obtained for respirometer experiment● Compare the use of respirometer & spirometer. **Discussion of textbook questions pg.173.**
Monday - 3rd period(girls)	**Zoom session-SB9c-Sampling technique** **Resource: Board works & Video link** **https://www.youtube.com/watch?v=2MW6nwf80XM** **https://www.youtube.com/watch?v=649HT8KVYKo** **Students able to** ●Define species abundance ●**Identify** the different methods of sampling plants & animals. ●Give **two basic** differences between random & systemic sampling .●Explain how various abiotic factors affect the distribution of organisms in its habitat**.** **Discussion of textbook questions pg.183.**
Tuesday- 7th period &8thperiod(girls)	Zoom session Students watch the recorded video shown by teacher **Resources:** Video – Yeast Respiration **Students able to** ●Outline a method to determine respiration rate ●Identify risks and hazards. ●Calculate respiration rate. ●Interpret the results obtained. Students to complete the Core Practical sheet and to turn in their work in GC within the assigned period.
Wednesday- 7th period (girls)	**Google classroom** Complete exam style questions on page 173 & turn in the work in GC .

YEAR 11 B,C&F BIOLOGY (GCSE)

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio Whats App Group/G mail/Google Classroom.

Topics - SB9a- Ecosystem, SB9b-Energy Transfer & SB9C-Abiotic Factors & Sampling Techniques.

L.O – Discuss components of ecosystem &energy transfer in an ecosystem through food chain/food web. Explain energy efficiency within ecosystem. Compare ecological pyramids. Role of abiotic factors and interdependence in organisms within ecosystem. Explain how to determine the number of organisms in a given area using raw data from field-work techniques, including quadrats and belt transects.

Sunday- 8th period(boys)	**Zoom session-SB9b-Energy Transfer** **Resource: Board works & Video link** **https://www.youtube.com/watch?v=gS8XyJQJBZs** **https://www.youtube.com/watch?v=sgh1OWm0oTQ** **Students able to** ●Define trophic level ●Predict few ways by which energy is lost from a food chain ●Explain why does keeping chicken indoors mean that they lose less energy ●Define ecological pyramid ●Explain why might a scientist choose to construct a pyramid of number rather than a pyramid of biomass?●Describe what happens to the biomass in a food chain as you go up the trophic levels **Discussion of textbook questions pg.178**
Tuesday - 5th period (boys)	**Zoom session - SB9b-Enegy transfer** **Resources: Board works & Video link** https://www.youtube.com/watch?v=XNuPKBIdqxQ **Students able to** ●Explain in terms of energy transfer how living things are interdependent ●Describe how is energy transferred from each trophic level ,including ways in it is not used ●How does energy transfer limit the length of food chain ●Calculate the energy efficiency between trophic levels **Discussion of textbook questions pg.179**
Wednesday- 6th period (boys)	**Zoom session-SB9c-Abiotic factors** **Resources : Board works & Video link**

	https://www.youtube.com/watch?v=bVJqkFWX9As **Students able to** ●Predict &describe few factors affecting distribution of organisms – availability of air, water ,light & temperature ●Differentiate abiotic & biotic factors ●Describe how natural abiotic factors affect communities? **Discussion of textbook questions pg.180.**
Thursday-5th period(boys)	**Zoom session-SB9c-Sampling technique** **Resource: Board works & Video link** **https://www.youtube.com/watch?v=2MW6nwf80XM** **https://www.youtube.com/watch?v=649HT8KVYKo** **Students able to** ●Define species abundance ●**Identify** the different methods of sampling plants & animals. ●Give **two basic** differences between random & systemic sampling .●Explain how various abiotic factors affect the distribution of organisms in its habitat**.** **Discussion of textbook questions pg.183.**
Thursday-6th period(boys)	**GC** Students to complete the textbook questions on ecosystem and energy transfer and turn in their work in GC.

YEAR 11 G – BIOLOGY (IGCSE)

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio WhatsApp Group/G mail/Google Classroom

Topics 14: Ecosystem.

L.O.: Understand the terms interdependance, biodiversity and ecosystem and how abiotic and describe how biotic factors affect the population size and distribution of organisms. Describe the concepts of food chains, food webs, pyramids of number, pyramids of biomass and pyramids of energy transfer. Explain the stages in the biogeochemical cycles: carbon cycle.

Sunday- 4th period	**Zoom: Understand** the terms population, community, habitat, interdependance, biodiversity and ecosystem and how abiotic and how biotic factors affect the population size and distribution of organisms **Resources**: Textbook, Video Links & Power point. https://www.youtube.com/watch?v=dvfQqL1VVTI https://www.youtube.com/watch?v=SMmZ3I9axeM Textbook page : 187-203

	Students able to: ●**Define** ecosystem. ●**Explain** the importance of interdependence in communities ●**Explain** the importance of biodiversity .●**Predict & describe** few factors affecting distribution of organisms – availability of air, water ,light & temperature.
Monday- 7th period	**Zoom: Understand** the concepts of food chains, food webs, pyramids of number, pyramids of biomass and pyramids of energy transfer. **Resources**: Textbook, Video Links & Power point. https://www.youtube.com/watch?v=pQQpzIlba3Y Textbook page : 187-203 **Students able to:** ●**Calculate** the energy efficiency between trophic levels. ●**Describe** what happens to the biomass in a food chain as you go up the trophic levels. ●**Explain** using a food web how the loss of one organism can affect the population size of other organisms.
Tuesday – 3rd and 4th period	**Zoom: Describe** the stages in the carbon cycle, including respiration, photosynthesis, decomposition and combustion **Resources**: Textbook, Video Links & Power point. https://www.youtube.com/watch?v=n_svwXrzMMs https://www.youtube.com/watch?v=BuV5GQFz0gg Textbook page : 187-203 **Students able to:** ●**Identify** which process removes /adds carbon dioxide from/into the air. ●**Draw** a diagram / flow chart to show what happens to the carbon in an animal that is eaten by a predator. ●**Describe** how carbon dioxide is used in photosynthesis and given out in respiration.
Wednesday – 5th period	**GC:** Students complete textbook questions on Ecosystem: Pages 202-203 and turn in their work on GC **Resources**: Textbook

YEAR 11 H – BIOLOGY (IGCSE)

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio WhatsApp Group/G mail/Google Classroom

Topic 14: Ecosystem.

L.O.: Understand the concepts of food chains, food webs, pyramids of number, pyramids of biomass and pyramids of energy transfer. Describe the stages in the biogeochemical cycles: carbon and nitrogen cycle.

Sunday- 4th period	**Zoom: Understand** the concepts of food chains, food webs, pyramids of number, pyramids of biomass and pyramids of energy transfer. **https://www.youtube.com/watch?v=pQQpzIlba3Y** Textbook page : 187-203 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**Calculate** the energy efficiency between trophic levels. ●**Describe** what happens to the biomass in a food chain as you go up the trophic levels. ●**Explain** using a food web how the loss of one organism can affect the population size of other organisms.
Monday- 7th period	**Zoom: Describe** the stages in the carbon cycle, including respiration, photosynthesis, decomposition and combustion https://www.youtube.com/watch?v=n_svwXrzMMs https://www.youtube.com/watch?v=BuV5GQFz0gg Textbook page : 187-203 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**Identify** which process removes /adds carbon dioxide from/into the air. ●**Draw** a diagram / flow chart to show what happens to the carbon in an animal that is eaten by a predator .●**Describe** how carbon dioxide is used in photosynthesis and given out in respiration.

Tuesday – 3rd and 4th periods	**Zoom: Describe** the stages in the nitrogen cycle, including the roles of nitrogen fixing bacteria, decomposers, nitrifying bacteria and denitrifying bacteria https://www.youtube.com/watch?v=LbBgPekjiyc https://www.youtube.com/watch?v=UrP1E-yM7Cs Textbook page : 187-203 **Resources**: Textbook, Video Links & Power point. **Students able to:** ●**Define** terms nitrification , de-nitrification, ammonification and nitrogen fixation. ●**Draw** a labelled diagram to show how nitrogen recycles through food chains.●**Explain the** Significance of crop rotation in nitrogen cycle.
Wednesday – 5th period	**GC:** Students complete textbook questions on Ecosystem: Pages 202-203 and turn in their work on GC **Resources**: Textbook

YEAR 12 - Batch 1&2 - BIOLOGY

WEEK 26 (21st Feb to 25th Feb)

Work sent through Google classroom/G mail/Online Quiz/ZOOM Learning Platform

Topic : 4,2,3,4 Gaseous exchange system in fish and insects

L.O – Discuss need for gaseous exchange surfaces in fish and insects

Biology worksheet file, past papers and text book, Board works

B1- Sunday – 8th period [GC] **B2- Tuesday – 3rd period [GC]**	**GC-Asynchronous learning-Research Work** **Thinking Bigger-240-241 Text book** **Asthma–Collect relevant details about this topic answer the questions given on page 241, include bibliography** and task to be turned in Google classroom **Text Book Page Numbers – 240 & 241**
B1 - Monday – 1st & 2nd period (Zoom) **B2- Thursday – 5th and 6th period(Zoom)**	**Students able to:-** • Describe the gaseous exchange in insects and fish • Identify and explain the features of gas exchange surfaces in living organisms • Enlist **few** stages to study the structure of the gas exchange systemin insects. • Identify the various parts of the respiratory system in insects. • **Explain few** safety precautions& ethical considerations of this method. • Adaptations of fish for gas exchange • ***Explain the significance of counter-current system in fish*** • What are the adaptations of fish for gas exchange **BOARD WORKS –Gaseous exchange No -3-7]** **Video and PPT: Gaseous exchange in locust** **Websites:**www.science.co.uk/biology/gaseous exchange in locust and fish.html, www.internet4classrooms.com Construct a table to compare how insects and fish increase surface area, reduce diffusion distance (to cells) and increase the concentration gradient to maximise gas exchange.. **Text Book Page Numbers – 232 & 235**

YEAR 12 - Batch 1 - BIOLOGY

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio Whats App Group /Google Classroom

Topic 2 . 4 - 3 – Gametogenesis

L.O – Discuss Spermiogenesis forming functional sperm & Ovarian cycle forming mature follicle favoring fertilization in humans . Compare structure of sperm and egg cell & parts of a typical flower to help sexual reproduction

Biology Students Book 1

B1- Tuesday– 4th period (Zoom) **B1- Thursday– 1st period (Zoom)**	**Students able to** ● **Identify** phases of spermiogenesis & ovarian cycle in humans . ●**Explain** spermiogenesis in the testis & maturation of follicles in the ovary. ●**Differentiate** primary follicle ,secondary follicle & mature follicle . **Resources:** Boardworks & PowerPoint - Gametogenesis & Video link **https://www.youtube.com/watch?v=de0B-dLFYAU** **https://www.youtube.com/watch?v=7C9JmIA0fbw** **https://www.youtube.com/watch?v=QUY9pJsvNlU**
B1- Thursday– 2 nd period (Zoom)	**Students able to** ●**Compare** structure of sperm cell to egg cell. ● **Identify** parts of flower in sexual reproduction. ●**Describe** microgametogenesis and maturation of pollen grain . **Resources:** Boardworks & PowerPoint - Gametogenesis & Video link https://www.youtube.com/watch?v=_Mum9z-8kks https://www.youtube.com/watch?v=q5aO62pTAiA https://www.youtube.com/watch?v=oEnQRWKuQ5c https://www.youtube.com/watch?v=2hh23Fcg-g0 **Students to draw and label –sperm cell ,ovum ,carpels & stamens**

YEAR 12 - Batch 2 - BIOLOGY

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio Whats App Group /Google Classroom

Topic 2 . 4 - 3 – Gametogenesis

L.O – Compare structure of sperm and egg cell & parts of a typical flower to help sexual reproduction. Discuss gametogenesis in plants .

Biology Students Book 1

B2- Monday – 5th period(Zoom)	**Students able to** ●**Compare** structure of sperm cell to egg cell. ● **Identify** parts of flower in sexual reproduction. ●**Describe** microgametogenesis and maturation of pollen grain . **Resources:** Boardworks & PowerPoint - Gametogenesis & Video link https://www.youtube.com/watch?v=_Mum9z-8kks https://www.youtube.com/watch?v=q5aO62pTAiA https://www.youtube.com/watch?v=oEnQRWKuQ5c https://www.youtube.com/watch?v=2hh23Fcg-g0 **Students to draw and label –sperm cell ,ovum ,carpels & stamens**
B2- Monday –8th period(Zoom) **B2- Wednesday– 5th period(Zoom)**	**Students able to** ● **Compare** megagametogenesis and maturation of ovule to microgametogenesis ●**Differentiate** sporophyte &gametophyte generation in plants **.** ●**Explain** types of pollination and its role in sexual reproduction in plants . **Resources:** Boardworks & PowerPoint - Gametogenesis & Video link **https://www.youtube.com/watch?v=eHIVMpq923g** **https://www.youtube.com/watch?v=uD4qxTYQwVc** **https://www.youtube.com/watch?v=KlR96TBN9QI** **https://www.youtube.com/watch?v=aT-_ueLkQKw** **Students to complete text book questions pg.139**

YEAR 13 - Batch 1&2 - BIOLOGY

WEEK 26 (21st Feb to 25th Feb)

Work sent through Google classroom/G mail/Online Quiz/ZOOM Learning Platform

Topic 10-Ecosystems [10.2 1,2,3]

L.O – Discuss Trophic levels ,energy transfer in ecosystems, nutrient recycling

Biology worksheet file, past papers and text book, Board works

B1- Tuesday – 3rd period (Zoom) **B2- Sunday – 0 period (Zoom)**	**Students able to** • Define trophic level. • Discuss energy losses occur along food chains and the efficiency of energy transfer between trophic levels. • **Calculate percentage efficiency of energy transfer in the given food chain.** • Use the knowledge gained in this section in new situations or to solve related problems • Differentiate between the terms gross and net production. • Give the equation for net primary production. Calculate NPP & GPP in the given food chain. .**Resources/Materials**: **BOARD WORKS –Energy transfer and ecosystem [3-18]** **Video and PPT:** Trophic levels and energy transfer. **:**www.science.co.uk/biology/trophic levels and energy transfer.html, www.internet4classrooms.com **Text Book Page Numbers – 270&274** Find out how primary production and secondary production are measured. Summarise each method in three bullet points Predict which type of ecosystem is most productive compared with its percentage of the area of the earth.

B1- Thursday – 1st and 2nd period(Zoom) **B2 - Monday – 8th & Thursday 7th period (Zoom)**	**Students able to-** **Describe** why increasing carbon dioxide levels are not balanced by increased photosynthesis. **Explain** how a change in atmospheric carbon dioxide levels can have an impact on disease in both animals and humans. Draw and **analyze** the different stages in carbon cycle and nitrogen cycle Why recycling of nutrients in ecosystem is important. **BOARD WORKS –Nutrient cycles and global warming[-1 -10]** **Video and PPT: Nutrient cycles** **:**www.science.co.uk/biology/Nutrient cycles.html, www.internet4classrooms.com A protocol for a detailed investigation can be found by visiting www.nuffieldfoundation.org, then searching for 'nitrogen fixing'. **Text Book Page Numbers – 276 & 279** The models of global carbon dioxide stabilization show a great deal of uncertainty and variety. **Explain** why the models are so uncertain. Research the recycling of another element that is essential for life, such as oxygen, phosphorous, magnesium or potassium...

YEAR 13 Batch 1& 2 - BIOLOGY

WEEK 26 (21st Feb to 25th Feb)

Work sent to students through Class Bio Whats App Group /Google Classroom

Topic 9.2 -2&3:- Nervous systems – Nerve impulse transmission

L.O – Discuss mechanism of nerve impulse transmission across axon and synapse & effects of drugs on nerve impulse transmission

Biology Students Book 2

B2 - Sunday –6th & 7 th Period (Zoom) **B1- Monday –1st & 2nd Period (Zoom)**	**Students able to** ● Differentiate resting potential & action potential . ● Describe transmission of nerve impulse along a nerve fibre ● Explain the significance of All or none law and relate it to absolute and relative refractory period **Resources:** Board works & PPT – Nervous system & Video link **https://www.youtube.com/watch?v=FEHNIELPb0s** **https://www.youtube.com/watch?v=Gsf9IB-wQdU** **https://www.youtube.com/watch?v=HYLyhXRp298** **Students to complete text book questions Pg.201**
B2 - Monday– 3rd Period (Zoom) **B1- Tuesday – 4 th Period (Zoom)**	**Students able to** ● Compare transmission of nerve impulse along myelinated and unmyelinated nerve fibre ● Describe structural features of a favoring transmission of nerve impulse between two neurons ● Differentiate EPSP & IPSP and neurotransmitters involved in nerve impulse transmission ●Explain effect of drugs on nerve impulse & synaptic transmission **Resources:** Board works & PPT – Nervous System & Video link **https://www.youtube.com/watch?v=8yC--NvBn_M** **https://www.youtube.com/watch?v=L41TYxYUqqs** **https://www.youtube.com/watch?v=3LTPX5yZYqk** **Students to complete text book questions Pg.204 &206**