NATURAL SCIENCES

GRADE 9 TERM 1

Tracker

COVID – 19 INFORMATION:

What is COVID-19?
COVID-19 is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. Formerly, this disease was referred to as '2019 novel coronavirus' or '2019-nCoV.'
The COVID-19 virus is a new virus linked to the same family of viruses as Severe Acute Respiratory Syndrome (SARS) and some types of common cold.

What are the symptoms of COVID-19?
Symptoms can include fever, cough and shortness of breath. In more severe cases, infection can cause pneumonia or breathing difficulties. More rarely, the disease can be fatal. These symptoms are similar to the flu (influenza) or the common cold, which are a lot more common than COVID-19. This is why testing is required to confirm if someone has COVID-19.

PSYCHOSOCIAL SUPPORT

It is natural for children to feel stress, anxiety, grief, and worry during an ongoing pandemic like COVID-19. Fear and anxiety about their own health and the health of loved ones can be overwhelming and cause strong emotions. In today's digital world, children also access different kinds of information and news through social media and digital platforms, some of them may not be factually true, causing further stress and anxiety. It is enhanced when children are not able to go out, play, attend school or interact freely. For those children and families who are subjected to quarantine or isolation there may be an increased risk of violence and abuse. When stress levels go up for adults and children, there is a greater risk of gender based violence and other forms of violence against children.
Role as parent or caregiver:
• To promote an environment where children can grow up and develop their full potential having fun and being safe and healthy.
• To facilitate a space where children are listened to, they can express their thoughts and feelings, and are free to ask any question and are answered honestly.

Week 1												
CAPS Concepts and Activities	CAPS Page no.	Year:					Year:					
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Week 1 Lesson A												
Topic: Cells as the basic units of life **Content & Concepts: Cell structure** • The cell is the basic structural and functional unit of all living organisms. Cells can be seen under a microscope (they are microscopic) • Plant and animal cells have a cell membrane, cytoplasm, nucleus, and organelles such as mitochondria, vacuoles, and chloroplasts	56											
Week 1 Lesson B												
Topic: Cells as the basic units of life **Content & Concepts: Cell structure** • The cell membrane encloses the contents of the cell. It allows specific substances to pass in and out of the cell • The cytoplasm is the jelly-like medium in which many chemical reactions take place • The nucleus contains the DNA o The nucleus in enclosed by a nuclear membrane (in plants and animals) o DNA contains inherited characteristics, such as whether eyes are blue or brown o DNA is unique to each person, this variation accounts for differences within spaces • Mitochondria are responsible for respiration to release energy from food	56											

Week 1 Lesson C											
Topic: Cells as the basic units of life **Content and Concepts: Differences between plant and animal cells** • Plant cells differ from animal cells ○ Plant and animal cells are enclosed by a cell membrane, and plant cells also have rigid cellulose cell walls to provide support for the plant ○ Plant cells also contain the organelles such as large vacuoles and chloroplasts. Chloroplasts contain chlorophyll to absorb light energy for photosynthesis. Vacuoles in plant cells have several functions including support and storage (vacuoles in animal cells are small and temporary or absent)	56										

Reflection	
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Think about and make a note of: What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you cover all the work set for the week? If not, how will you get back on track?	What will you change next time? Why? HOD: Date:

Week 2											
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Week 2 Lesson A											

Topic: Cells as the basic units of life
Content and Concepts: Differences between plant and animal cells
• Plant cells differ from animal cells
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Week 2 Lesson B											
Topic: Cells as the basic units of life **Content and Concepts: Cells in tissues, organs and systems** • Cells come in many different shapes and sizes • Cells are adapted to form specific functions, such as muscle cells which are specialised to contract and enable movement	57										
Week 2 Lesson C											
Topic: Cells as the basic units of life **Content and Concepts: Cells in tissues, organs and systems** • Microscopic organisms such as bacteria, consist of a single cell. Macroscopic organisms such as humans, consist of large numbers of cells • Stem cells are cells that have the ability to divide and develop into many different cell types • A group of cells performing a specific function form a tissue, group of tissues make up an organ, and organs working together in groups form systems, systems make up an organism	57										

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Week 3											
CAPS Concepts and Activities	CAPS Page no.	Year:					Year:				
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Week 3 Lesson A											
Topic: Systems in the human body **Content & Concepts: Body systems** • Reproductive system: produces sex cells for the purpose of continuation of the species o The main processes include growth, cell division, maturation, copulation, ejaculation, ovulation, menstruation, fertilisation, implantation o The main components include testes, ovaries, uterus o Health issues include infertility, foetal alcohol syndrome, STDs	59										
Week 3 Lesson B											
Topic: Human reproduction **Content & Concepts: Purpose and puberty** • The main purpose of reproduction is for the gametes (male and female sex cells) to combine for the continuation of the species • Puberty is the stage in the human life cycle when sexual organs mature for reproduction. This process is initiated when the pituitary gland releases hormones into the blood stream, triggering the testes and ovaries to release sex hormones (testosterone and oestrogen).	59										
Week 3 Lesson C											
Topic: Human reproduction **Content & Concepts: Purpose and puberty** • Testosterone (from the testes) and oestrogen (from the ovaries) causes secondary sexual characteristics such as menstruation, breast development, pubic hair, facial hair, deepening of the male voice	59										

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Week 4											
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Week 4 Lesson A											
Topic: Human reproduction **Content & Concepts: Reproductive organs** • Male reproductive organs include penis, sperm duct (vas deferens), testes (produces sperm cells), scrotum and urethra • Female reproductive organs include vagina, uterus, ovaries (contain egg cells/ova) and oviducts (Fallopian tubes)	59										
Week 4 Lesson B											
Topic: Human reproduction **Content & Concepts: Stages of reproduction** • Once a month, one of the ovaries releases a ripe egg in a process called ovulation • In preparation for a fertilised egg, the uterus develops a thick layer of blood • If fertilisation does not take place, menstruation occurs • Menstruation is the breakdown of the thick layer of blood in the uterus, which is released through the vagina • The menstrual cycle is usually a 28-day cycle • During copulation, the erect penis is inserted into the vagina and semen is released (ejaculation) • Fertilisation is the fusion of the sperm and egg, producing a zygote	60										

Week 4 Lesson C											
Topic: Human reproduction **Content & Concepts: Stages of reproduction** • If fertilisation takes place, the fertilised egg is implanted in the blood layer in the uterus and pregnancy results • The developing embryo/foetus is attached to the uterus wall by the placenta which plays a vital role in feeding and removing waste from the foetus • The stage of pregnancy in humans (gestation) is about 40 weeks • Pregnancy can be prevented by using contraceptives such as condoms to prevent the sperm reaching the egg • Condoms also prevent the transmission of HIV/AIDS and other STDs (sexually transmitted diseases), if used effectively.	60										

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Week 5												
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Week 5 Lesson A												
Topic: Circulatory and respiratory systems **OVERVIEW AND DETAIL** • Circulatory system: brings nutrients and oxygen to cells and removes waste products o The main processes include circulating blood between the heart and lungs, and circulating blood between heart and rest of body o The main components include the heart, blood vessels (arteries, veins, capillaries), blood o Health issues include high blood pressure, heart attacks and strokes • Respiratory system: is responsible for supplying oxygen and removing carbon dioxide o The main processes include breathing (inhalation and exhalation), gaseous exchange (diffusion) and respiration o The main components include the nose and mouth, trachea, and other air passageways, lungs, blood o Health issues include asthma, lung cancer, bronchitis, asbestosis	57 58											
Week 5 Lesson B												
Topic: Circulatory and respiratory systems **Content & Concepts: Breathing, gaseous exchange, circulation and respiration** • Oxygen is inhaled in a process called breathing • In the lungs gases are exchanged (gaseous exchange) between the alveoli and the surrounding capillaries by the process of diffusion	61											

Week 5 Lesson C											
Topic: Circulatory and respiratory systems **Content & Concepts: Breathing, gaseous exchange, circulation and respiration** • Oxygenated blood is transported (circulation) from the lungs to the left side of the heart where it is pumped under high pressure to the body through the arteries [arteries transport oxygenated blood, except for pulmonary arteries]	61										

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Week 6											
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Week 6 Lesson A											
Topic: Circulatory and respiratory systems **Content & Concepts: Breathing, gaseous exchange, circulation and respiration** • Arteries subdivide to form capillaries which are in close contact with the body cells. Here, gaseous exchange occurs and oxygen moves into the cells by the • process of diffusion	61										
Week 6 Lesson B											
Topic: Circulatory and respiratory systems **Content & Concepts: Breathing, gaseous exchange, circulation and respiration** • In the mitochondria of the cells, oxygen is combined with food in the process of respiration and energy is released for other body processes	61										
Week 6 Lesson C											
Topic: Circulatory and respiratory systems **Content & Concepts: Breathing, gaseous exchange, circulation and respiration** • Carbon dioxide (by-product of respiration), diffuses from the cells into the capillaries for excretion, and is transported (circulation) in the blood to the right side of the heart by veins (veins transport deoxygenated blood, except for the pulmonary veins) • The heart pumps deoxygenated blood (contains carbon dioxide), to the lungs where it is, where it diffuses into the air that is exhaled out of the body	61										

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Week 7 Lesson A											
Topic: Digestive System **OVERVIEW AND DETAIL** • Digestive system: breaks down food into dissolved nutrients that can be absorbed into the blood stream and transported to cells throughout the body o The main processes include ingestion, digestion, absorption and egestion o The main components include mouth, oesophagus, stomach, intestines and liver o Health issues include ulcers, anorexia nervosa, diarrhoea, liver cirrhosis	57										
Week 7 Lesson B											
Topic: Digestive System **Content & Concepts: Healthy diet** • A healthy diet (eating plan) requires different components including proteins, carbohydrates, fats and oils, vitamins and minerals, fibre and water • Disorders of the digestive system can be related to inappropriate eating plans	61										
Week 7 Lesson C											
Topic: Digestive System **Content & Concepts: Healthy diet** • A healthy diet (eating plan) requires different components including proteins, carbohydrates, fats and oils, vitamins and minerals, fibre and water Disorders of the digestive system can be related to inappropriate eating plans	62										
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Week 8 Lesson A											
Topic: Digestive System **Content & Concepts: The alimentary canal** • The alimentary canal is composed of the mouth, oesophagus, stomach, small intestine, large intestine, rectum and anus • The structure of each part of the alimentary canal is adapted to its function	62										
Week 8 Lesson B											
Topic: Digestive System **Content & Concepts: The alimentary canal** • Digestion is the breakdown of food into a usable dissolved form. • There are two types of digestion: o Mechanical digestion involves the physical breaking, crushing and mashing of food o Chemical digestion involves the mixing food with digestive enzymes and hydrochloric acid	62										
Week 8 Lesson C											
Topic: Consolidation and Revision											

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Week 9 Lesson A											
Topic: Consolidation and Revision	56-62										
Week 9 Lesson B											
Topic: Consolidation and Revision	56-62										
Week 9 Lesson C											
Topic: Consolidation and Revision	56-62										

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