

UNIT 9 Health and disease and its control

	Learning Outcomes	Suggested Teaching Activities	Online Resources	Other resources
	11 (a) Define good health as a state of physical and mental wellbeing, dependent on receiving a balanced diet and on appropriate physical and mental activity 11 (b) Define disease as a loss of health resulting from a disturbance of the normal processes of the body, due to various causes such as malnutrition, infectious organisms degeneration of organs/tissues or environmental pollutants 11 (c) Define nutritional deficiency disease, as illustrated by rickets. 11 (d) Define degenerative disease, as illustrated by coronary heart disease. 11 (e) Define inherited disorders, as illustrated by sickle cell anaemia. 11 (f) Distinguish between signs of a disease (e.g. rash, high temperature) that can be seen or measured and symptoms (e.g. pain) that can only be described by the patient.	Students should be given a table with gaps with • words to be defined; • definition; • brief description of the examples suggested as illustrations. They should fill in the gaps from textbook or internet sources.		P. Gadd pg 164 D. Mackean pg 193-194
	11 (g) State the chief signs of influenza, name the pathogen (a virus), the method of spread (droplet or airborne) and the methods of limiting spread. 11 (j) State the chief signs and symptoms of ringworm, name the pathogen (a fungus) and state the method of spread (contact)/	Students should either fill in gaps or research and produce a summary table of each of the illnesses that follow giving: • the illness; • pathogen; • sign/symptoms; • method of spread • limiting spread for influenza and ringworm	http://www.cdc.gov/flu/about/disease.htm Flu fact sheet http://www.amnh.org/national-center/infection/04_lou/04b_duck.html Simple but effective on flu transmission http://www.bbc.co.uk/health/conditions/flu.shtml flu from the BBC http://www.astdhpphe.org/inf	P. Gadd pg 166; fig 17.6 and pg 187 D. Mackean pg 221; fig 29.3 P.Gadd pg176; fig 18.1 D. Mackean pg 200-201; fig 25.7

			ect/ringworm.html Ringworm fact sheet http://www.sfsu.edu/~shs/skinclinic/ringworm.htm and another	
	11 (i) State the chief signs and symptoms of gonorrhoea and state the pathogen (a bacterium) and the method of spread 11 (h) State the chief signs and symptoms of AIDS, state the pathogen (human immunodeficiency virus, HIV) and the methods of spread: sexual intercourse, use of contaminated needles for injecting drugs, blood transfusion and state the methods of limiting spread 12 (c) Discuss the control of sexually transmitted diseases	Summary table of sexually transmitted diseases gonorrhoea and AIDS; showing - the illness; - pathogen; - sign/symptoms; - method of spread - limiting spread Students could look at Health leaflets; and/or make one or a poster campaign on AIDS	http://www.netdoctor.co.uk/diseases/facts/gonorrhoea.htm Gonorrhoea fact sheet http://www.bbc.co.uk/relationships/sex_and_sexual_health/stis_gonorr.shtml and another http://members.aol.com/aidsacthsv/stdinfo.htm Aids info.	P.Gadd pg 215-218; fig 20.13 D. Mackean pg 266-268
	11 (k) State the chief signs and symptoms of typhoid, name the pathogen (a bacterium) and methods of spread: contamination of human food by food handlers and by houseflies -control of spread by sanitary disposal of faeces, preventing access for houseflies to faeces, careful washing of hands after using the toilet and tracing of carriers, followed by medical treatment 11 (m) State the chief signs and symptoms of cholera, name the pathogen as a bacterium (vibrio), spread by water contaminated with bacteria from human faeces; describe control by sanitary disposal of faeces and thorough chlorination of drinking water; occurrence and significance of epidemics 3 (n) Explain the need for hygiene in handling and preparing food	Summary table showing: - the illness; - pathogen; - sign/symptoms; - method of spread - limiting spread for Typhoid, Cholera Students could examine a map giving details of some epidemics with some question written about it to answer	http://history1900s.about.com/library/weekly/aa062900a.htm The story of Typhoid Mary http://www.disasterrelief.org/Disasters/971112cholera/ Cholera fact sheet http://www.bact.wisc.edu/Bact330/lecturecholera Lots of cholera detail including epidemic map. http://www.ph.ucla.edu/epi/snow.html Site about John Snow and the first known cholera epidemic, there is masses of information here	P.Gadd pg 192-193 D. Mackean pg 234-235 P.Gadd pg 193 D. Mackean pg 221-223 Fig 29.5 P.Gadd pg 164 D. Mackean pg 222 Fig 29.4

	12 (a) Discuss the importance of cleaning the body, particularly the pubic and anal regions and the hands, after contact with faeces and urine 12 (b) Discuss the meaning and importance of the sanitary disposal of faeces, urine and sputum	Students should discuss hygiene, using drawing of the human body illustrating the areas of concern		P.Gadd pg 176 D. Mackean pg 236-237 Fig 30.3
	11 (n) State the chief signs and symptoms of malaria; name the pathogen as a protozoan (Plasmodium) transmitted only by the bite of an infected, female anopheline mosquito: life cycle of the mosquito and the importance of understanding the life cycle in devising means of control: destruction of breeding sites, destruction of mosquito larvae, pupae and adults by appropriate means (including biological control of the larvae using <i>Bacillus thuringiensis</i>), the need to prevent mosquitoes biting patients already suffering from malaria 12 (j) State the principles of controlling a disease by controlling the vector that transmits the pathogens, illustrated by methods of controlling mosquitoes (including biological control by the use of <i>Bacillus thuringiensis</i>) (malaria) and houseflies (typhoid) 12 (k) Explain the need for knowing the life cycle and habits of the <i>Anopheles</i> mosquito and housefly as vectors, examine all stages in the life cycle of the <i>Anopheles</i> mosquito and the housefly.	Students could be shown a Slide/OHT of Malarial parasite life-cycle with an unlabelled diagram to annotate. Similarly with a Life cycle of mosquito Student can research and make up a sheet showing signs and symptoms of Malaria The class can brain storm ways to prevent the spread of Malaria and produce a mind map/spider diagram/poster showing methods of control Students should look at all stages of <i>Anopheles</i> and housefly as microscope slides or photographs	http://www.liquidjigsaw.com/animation/anim4.htm Excellent animation of malaria life cycle http://www.uri.edu/research/ee/cycle.gif Diagram showing mosquito life cycle. http://www.publichealthgreybruce.on.ca/images/WestNileVirus/MosquitoLifeCycle.jpg Diagram showing mosquito life cycle and control measures. http://www-rci.rutgers.edu/~insects/lcycle.htm http://creatures.ifas.ufl.edu/urban/flies/house_fly01.htm Pictures showing the life	P.Gadd pg 198 fig. 19.19 Pg 196 fig 19.17 D. Mackean pg 226 Fig 29.14 and fig 29.11 P.Gadd pg 199 D. Mackean pg 225 P.Gadd pg 199-200 D. Mackean pg 226-228

			cycle of the housefly.	
	(l) State the chief signs and symptoms of tuberculosis (TB), name the pathogen as a bacterium (<i>Mycobacterium tuberculosis</i>), capable of forming spores and therefore of surviving drying; method of spread; control by good ventilation, avoiding overcrowding, avoiding spitting, BCG vaccination, early diagnosis by mass X-ray, drug treatment	Summary table showing: - the illness; - pathogen; - sign/symptoms; - method of spread - limiting spread for TB	http://www.tuberculosis.net/ Masses of TB teaching information http://www.cdc.gov/nchstp/tb/fags/qa.htm Clickable TB fact sheet	P.Gadd pg 187-189 D. Mackean pg 223-224
	11 (o) - State the symptoms of schistosomiasis (bilharzia) - name the pathogen as a flatworm (blood fluke), <i>Schistosoma mansoni</i> , invading blood vessels of the gut - outline the life cycle of the parasite and the part played by the water snail (secondary host) for completion of the life cycle; methods of controlling spread of parasite and control of secondary host.	Summary table showing: - the illness; - pathogen; - sign/symptoms; - method of spread - limiting spread for schistosomiasis (bilharzia) Students should be given a diagram of life cycle of <i>Schistosoma</i> sp to annotate	http://www.escargot.ch/personel/schisto.htm Basic Bilharzia information http://www.path.cam.ac.uk/~schisto/SchistoLife/Schist.lifecycle.html Clickable Bilharzia life cycle diagram	P.Gadd pg 190-192 D. Mackean pg 228-231 P.Gadd pg 191; fig 19.10 D. Mackean pg 231; fig 29.28
	12 (d) Define sterilisation. Demonstrate the presence of micro organisms in water, air and food 12 (e) Describe the use of high temperature as a means of destroying pathogens in cooking and steam sterilisation 14 (h) Discuss the effects of boiling water for drinking 12 (f) Describe the use of chemical sterilisation agents, with particular reference to the use of chlorine (h) define antibiotics (i) discuss the use of antibiotics, illustrated by the use of penicillin in the treatment of gonorrhoea	Students should be given a description of how high temperature affects micro-organisms; and the definitions below. They should use agar plates to grow micro-organisms from food, tap water, boiled water, autoclaved water. Cooked and uncooked food. They should see photographs of technique with results. Sheet defining sterilisation, boiling, autoclaving, disinfectant, antiseptic, antibiotic, aseptic. With examples of their use. The difference between these should be discussed and gonorrhoea be referred to.		P.Gadd pg 177 section 18.2; P. Gadd pg 167 -169 Fig 17.10 D. Mackean pg 293-294; fig 38.18 D. Mackean pg 294 practical 1 P. Gadd pg 177-178 D. Mackean pg 259-260

		Students should observe plates of bacteria cultures with antibiotic discs.		P.Gadd pg 178-179 fig 18.7
	(g) Distinguish between antiseptics that inhibit the reproduction of bacteria and disinfectants that kill bacteria but also damage human tissue. Investigate the effects of disinfectants on bacterial growth	Students should; Carry out investigation into the effects of disinfectants on the growth of bacteria using soil broth and dilutions of a disinfectant. Carry out investigation into antiseptic by growing agar plate cultures with finger impressions of washed and unwashed hands		P. Gadd pg 177-179 fig 18.4 D. Mackean pg 259-260 D. Mackean pg 260 Fig 33.9