

Cell structure		
1.	Culturing	microorganisms grown deliberately by humans
2.	Binary fission	process that bacteria multiply
3.	Aseptic technique	laboratory procedures carried out to prevent the contamination of pure cultures of microorganisms
4.	Examples of aseptic techniques	- flaming neck of bottle - lifting agar plate lid at angle - keeping the lid on when not in use
5	Colonies	a visible cluster of microorganisms
6	Antiseptic	kills or stops the growth of pathogens
7	Antibiotic	kills bacteria
8	Agar plate	petri dish that contains agar gel and usually some nutrients
9	Zone of inhibition	where no bacteria growth has happened
RP Investigate the effect of antiseptics or antibiotics on bacterial growth using agar plates and measuring zones of inhibition		
10	Independent variable	type of antiseptic or antibiotic
11	Dependent variable	area of non-growth of bacteria
12	Control	temperature, type of agar, type of bacteria
13	Example of method	a) soak filter paper disks in a variety of solutions. A control disk must be also included. b) place on labelled areas of agar plate using aseptic techniques c) incubate d) measure the clear area around the soaked filter paper disks.

Monoclonal antibodies		
14	Monoclonal Antibodies	identical copies of an antibody produced by fusing a cell with a cancerous white blood cell which can be designed to bind to many different substances
15	Monoclonal antibody production	a) stimulate mouse lymphocytes to make a particular antibody. b) combine with a tumour cell to make a cell called a hybridoma cell. c) the hybridoma cell can both divide and make the antibody. d) single hybridoma cells are then cloned
16	Uses of monoclonal antibodies	- pregnancy tests - measure hormones in bloods - identify specific molecules in a cell - to treat some diseases
17	Using monoclonal antibodies to treat cancer	a) monoclonal antibodies are bound to a radioactive substance, a toxic drug or a chemical which stops cells growing and dividing b) it delivers the substance to the cancer cells without harming other cells in the body.

Plant diseases		
18	How to spot disease	<ul style="list-style-type: none"> • stunted growth • spots on leaves • areas of decay (rot) • growths • malformed stems or leaves • discolouration • pests
19	How to identify disease	<ul style="list-style-type: none"> • reference to a gardening manual or website • taking infected plants to a laboratory to identify the pathogen • using testing kits that contain monoclonal antibodies
20	Tobacco mosaic virus	viral disease infects tobacco and tomato plants changes leaves from green to yellow or white in a mosaic pattern
21	Black spot	fungal disease infects roses causes black or purple spots on the leaves
22	Aphid	insect infest roses and tomatoes suck sap out of stems and reduce plant growth
23	Nitrate deficiency	causes stunted growth as limited protein syntheses
24	Magnesium deficiency	causes chlorosis (limited chlorophyll production)
Plant defences		
25	Physical defences	cellulose cell walls tough waxy cuticle on leaves layers of dead cells around stems (bark on trees) which fall off
26	Chemical defences	antibacterial chemicals. poisons to deter herbivores.
27	Mechanical adaptations	thorns and hairs deter animals. leaves which droop or curl when touched. mimicry to trick animals.