Cours Anglais scientifique

Chapter1.Recommendation and strategy for learning English:

Texts:

Text1:

Bacteria

Bacteria *{singular:* bacterium) are a large domain of prokaryotic microorganisms. Typically a few micrometres in length, bacteria have a wide range of shapes, ranging from spheres to rods add spirals. Bacteria are present in most habitats on Earth, growing in soil, acidic hot springs, radioactive waste water, and deep in the.Earth's crust, as well as in organic matter and the live bodies of plants and animals, providing outstanding examples of mutualism in the digestive tracts of humans, termites and cockroaches. There are typically 40 million bacterial cells in a gram of soil and a million bacterial cells in a millilitre of fresh water; in all, there are Approximately five nonillion ($5*1O^{30}$) bacteria on Earth, forming à biomass that exceeds that of all plant; and animals. Bacteria are vital in recycling nutrients, with many steps in nutrient cycles depending on these organisms, such as the fixation of nitrogen from the atmosphere and putrefaction. In the biological communities surrounding hydrothermal vents and cold seeps, bacteria provide the nutrients needs to sustain life by converting dissolved compounds such as hydrogen sulphide and methane. Most bacteria have not been characterized, and only about half of the phyla of bacteria have species that can be grown in the laboratory. The study of bacteria is known as bacteriology, a branch of microbiology. .

There are approximately ten fames as many bacterial cells in the human flora as

there are human cells in the body, with large number of bacteria on the skin and as gut flora. The vast majority of the bacteria in the body are tendered harmless by the protective effects of the immune system, and a few are beneficial. However, a few Species of bacteria are pathogenic and cause infectious diseases, including cholera, syphilis, anthrax, leprosy, and bubonic plague. The most common fatal bacterial disease are respiratory infections, with tuberculosis alone killing about 2 million people a year, mostly in sub-Saharan Africa. In developed countries, antibiotics are used to treat bacterial infections and in agriculture, so antibiotic resistance is becoming common. In industry, bacteria are important in sewage treatment and the breakdown of oil spills, the production of cheese and yogurt through fermentation, the recovery of gold, palladium, copper and other metals in the mining sector, as well as in biotechnology, and the manufacture of antibiotics and other chemicals.

Once regarded as plants constituting the class Schizomycetes, bacteria are now classified as prokaryotes. Unlike cells of animals and other eukaryotes, bacterial cells do not contain a nucleus and rarely harbor membrane-bound organelles. Although the term bacteria traditionally included all prokaryotes, the scientific classification changed after the discovery in the 1990s that prokaryotes consist of two very different groups of organisms that evolved independently from an ancient common evolutionary domains are called Bacteria and Archaea.

Questions:

Q1. What are the different shapes of bacteria?

Q2. Where does bacteria live?

Q3.What is the role of bacteria in our life?

Q4.Does bacteria cause only harm in our bodies?

Q5.In which other domain can bacteria be beneficial?

Answers:

1. There are 3 shapes of bacteria: spheres, rodse, spirales.
2. Bacteria lives in: soil, acidic hot springs, radioactive wast, bodies of plants and animals, fresh water
3. The role of bacteria in: fixation of nitrogen, putrefaction nutrients cycles
4. No, its can be positif for our bodies
5. Bacteria can be beneficial in: agriculture, industry-mining sector.

Text2:

Plant viruses

Plant viruses are viruses that affect plants. Like all other viruses, plant viruses are obligate intracellular parasites that do not have the molecular machinery to replicate without a host.

The first virus to be discovered (see below) was *Tobacco mosaic virus* (TMV). This and other viruses cause an estimated US$60 billion loss in crop yields worldwide each year. Plant viruses are grouped into 73 genera and 49 families.
To transmit from one plant to-another and from one plant cell to another, plant viruses must use strategies that are usually different from animal viruses. Plants do not move, and so plant-to-plant transmission usually involves vectors (such as insects). Plant cells are surrounded by solid cell walls, therefore transport through plasmodesmata is the preferred path for virions to move between plant cells

Viruses can be spread by direct transfer of sap by contact of a wounded plant with a healthy one. Such contact may occur during, agricultural practices, as by damage caused by tools or hands, or naturally, as by an animal feeding on the plant. Generally TMV, potato viruses and cucumber mosaic viruses are transmitted via sap.

Plant viruses need to be transmitted by a vector, most often insects such as leafhoppers. One class of viruses, the Rhabdoviridae, has been proposed to actually be insect viruses that have evolved to replicate in plants.

Soil-borne nematodes also have been shown to transmit viruses. They acquire and transmit them by feeding on infected roots. Viruses can be transmitted both non-persistently and persistently, but there is no evidence of viruses being able to replicate in nematodes. The virions attach to the stylet (feeding organ) or to the gut when they feed on an infected plant and can then unattached during later feeding to infect other plants.

A number of virus genera are transmitted, both persistently and non-persistently, by soil borne protozoa. These protozoa are not phytopathogenic themselves, but parasitic. Transmission of the virus takes place when they become associated with the plant roots. Examples include *Polymyxa graminis*, which has been shown to transmit plant viral diseases in cereal crops

More recently virus research has been focused on understanding the genetics and molecular biology of plant virus genomes, with a particular interest in determining how the virus can replicate, move and infect plants. Understanding the virus genetics and protein fonctions has been used to explore the potential for commercial use by biotechnology companies. In particular; viral-derived sequences have been used to provide an understanding of novel forms of resistance. The recent boom in

technology allowing humans to manipulate plant viruses may provide new strategies for production of value-added proteins in plants.

Questions

Q1. What are the strategies used by virus to move from cell to all?

Q2.How can viruses spread in plants?

Q3. How can nematodes transmit virus? Explain

Q4.What has the research focused in?

Q5. What does technology permit humains to do?

Text3:

Disease resistance in fruit and vegetables

There are a number of lines of defence against pests (that is, those animals that cause damage to the plants we grow) and diseases in the organic garden, principal among these being the practice of good husbandry, creating healthy soil and ensuring high standards of garden hygiene. But no matter how diverse and healthy the garden eco-system may be, there will always be a degree of disease and pest presence. In many ways, some level of pathogen population in the garden can be not only acceptable but desirable as they are indicative of a generally healthful and diverse environment, and add to the overall robustness of the system as an immunity to such detrimental influences will build up, particularly in a balanced polycultural regime. Indeed, most of the plants we grow will tend to be selected because they are trouble free, and those that are more susceptible to attack will have fallen by the wayside over time. However, most farmers find it unacceptable that the food crops they grow are damaged by pests.

Some plants can tolerate the presence of large numbers of insects without being severely affected. This is not very satisfactory however as insects will still cause damage, and in fact further breeding and population expansion of the pest species is supported. Other varieties are less attractive to pests, but this can be difficult to sustain or demonstrate. The most valuable form of resistance is where the pest cannot survive as well on one variety as on another. In some cases this can actually make the plants immune to attack.
Sometimes however there can be a *trade-off*, for those varieties which have increased immunity or resistance may be lacking in other qualities such as flavour, yield of quality. Another drawback to resistance is that depending on the host pathogen system, resistance is sometimes not long lasting as new pathogen strains quickly develop, and further research and breeding is constantly needed.

Resistant varieties are not available for all crops. For several of the most damaging plant diseases, such as Potato blight and white rot of the Allium family, no acceptable resistant cultivars are yet available. In addition, commercial seed companies and plant breeders rarely invest resources into developing resistant cultivars for more minor or speciality crops, which often tend to be those of greater interest to the organic grower.

In general it is probably fair to say that resistance will not fully guarantee total crop

protection, but choosing resistant varieties should rather be considered as a part of an overall Integrated pest management strategy, especially against virus diseases. In particular they can be especially useful where the threat from specific pests and diseases is high.

Listening English :

Vedio :

Chapter2. Exploration of the main terminology used in genetic sciences:

2.1. Text structure and verb tenses:

Grammer PRESENT PERFECT SIMPLE

We use the present perfect when we want to show a link between the present and the past

1. Present perfect simple

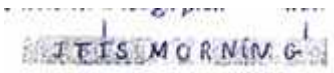
***Have/nas* + past participle**	-She's started the assignment
***Have/has not* + past participle**	- I haven't started the assignment
***have/has…* + past participle?**	-Have you started the assignment?

♦We use the present perfect simple:

1.to talk about a time period that is not finished (eg. *today, this week):*

e.g: *I've written a rough plan this morning* (it is still morning;

I've written a rough plan *Now*



2.to show that something happened at some point in the past before now. We don't state when it happened?

e.g. I've collected plenty of infermation (at some point before now and 1 will use-it *to* write my essay)

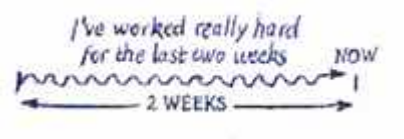
The following time expressions are often used *ever, never, before, up* to now, *still, so far.*

e.g. *It's the longest I've ever had to write,* (at any point before now)

* If we state when something happened we must use the simple past

e.g. I wasted a lot of time last week (not have wasted a lot of time last-*wcek)*

3.to talk about a present situation which *stated* in the past; usually with: *for/since*.



e.g. I've e worked realty hard for the *test two weeks. (I've* worked hard till mow)

We use *far* with a length of time (e.g.for *two hours, for three days, for* six *month)* and *since* with a point in time (e.g. *since 2.000 since Monday, since ten o'clock, since I was four, since started the Course).*

4.to talk about something that happened at an unstated time in the past but is connected to the present

e.g. I've *read all the books on the reading list:* (I have the notes now).

The Following time expressions are often used: *recently, just, already,* and *yet* with negative or questions

e.g. *I've just got'up.*

e.g. Have you written your assignment yet

2.2. Scientific words :

Scientific words	definition	Translation into French	Translation into arabic
Aerobic	**An aerobic is an organism that can survive and grow in an oxygenated environement**	**aerobie**	هوائي
Bacteria	**Very small organisms which live in air, water, soil,plants or animals, often the cause of diseases**	**bacteries**	بكتيريا
Bloody	**Covered with blood**	**sanglante**	دموي
Contamination	**The intrusion of impurities or dirt into the devices that leads to various kinds of failure such as degradation of oxide integrity,threshold voltage shift, leakage poor pattern definition and so forth**	**Contamination**	تلوث
Cramps	**Sudden and painful fightning of the muscles.**	**Crampe**	تشنج
Dairy products	**Dairy products are generaly defined as foods produced from milk.They are usually high-energy such as butter,cheese, frozen products.**	**Produits laitièrs**	منتجات الالبان
Diarrhea	**Too frequent and too watery emptying of the bowels**	**Diarrhée**	إسهال
Enteric	***a general term for the intestines *microorganisms that inhabit the intestines**	**Entérique**	معوي
Fecal	**Relating to the feces, the decharged from the intestines**	**Fécale**	برازي
Fever	**Very high temperature of the body because of an illness**	**feivre**	حمى
Flagella	**Flagella are long, thread-like appendages wich provide some live single cells with the ability to move, motility**	**Flagelles**	سياط
Food poisoning	**Is any illness resulting from the consumption of contaminated food.it is a common, usually mild, but sometimes deadly illness**	**Toxication alimentaire**	تسمم غذائي
Gram	**The word Gram is always spelled with a capital, referring to Hans Christian Gram, the inventor of Gram staining. Gram staining (or Gram's**	**Coloration de Gram**	تلوين غرام

	method) is an empircal method of differentiatin g bacterial species into two large groups (Gram-positive and Gram-negative) based on the chemical and physical properties of their cell walls.		
Gut	**Intestine, long type from the stomach to the anus.organs in and around the stomach**		الأمعاء
Headache	**Pain in the head**	**Mal de tete**	ألم الرأس
Illness	**State of being not well ; sickness, disease**	**Maladie**	مرض
Incubation	**Peroid between infection and the first appearance of a disease**	**Incubation**	الحضانة
Intestinal tructs	**System of connected organs or tubes in the intestine**	**Tractus intestinal**	المسالك المعوية
Intoxication	**Intoxication is a set of fuctional disorders of the body due to absorption of a foreign substance, known as toxic**	**intoxication**	تسمم
Malaise	**A vague feeling of bodility discomfort, as at the beginning of an illness**	**Malaise**	توعك
Muscular weakness	**Muscle weakness is a symptom of wide variety of mild to serious diseases, disorders and conditions.muscle weakness can result from infection, trauma,malignancy, autoimmune diseases, and other abnormal processes.**	**Faiblesse musculaire**	الضعف العضلي
Nausea	**Feeling of wanting to vomit**	**nausée**	غثيان
Prostration	**Is a state of extreme weakness and fatigue which is manifested by the collapse of the patient's muscle function and its immobility. The prostation is found in the terminal phase of disease, and during various psychiatric disorders.**	**prostration**	انهيار جسدي
Skin	**Layer of tissue that covers the body. Outer layer of some fruit and vegetables**	**peau**	الجلد
Spore	**Is a structure of vegetative propagation or reproduction, wether it**	**spore**	بوغ

	represents a stage of the life cycle of many plants, algae,fungi and some protozoa. **The spores may from a new individual without fertilization. Some spores, including those of bacteria of fungi, have characteristics of resistance and can survive for long periods in adverse conditions and thus allow the dispersal of the species.**		
Stomach	**Organ in the body where food is digested**	**estomac**	المعدة
Strain	**Types of virus, an insects, etc.**	**souche**	سلالة
Symptoms	**Change in the body that sign of illness**	**symptomes**	أعراض
Unpasteurized	**Not having undergone pasteurization**	**Non pasteurisé**	غير مبستر
Vomiting	**Bringing food from the stomach back out through the mouth.**	**vomission**	تقيؤ