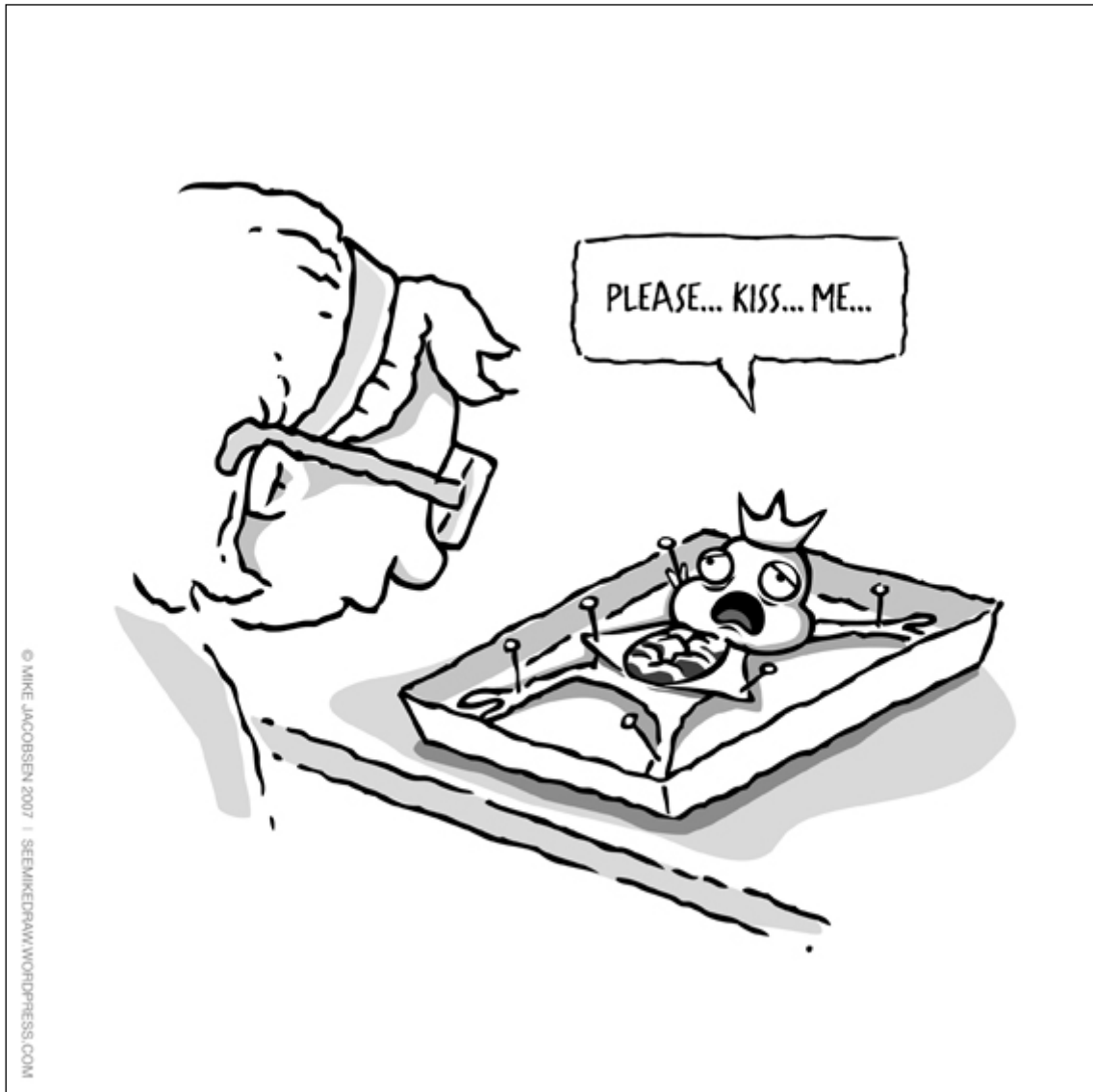


BIOLOGY



X31 ENGLISH HANDOUT

PROGRAM

1	Technical Vocabulary	Reading
2	Note-taking and summarizing	Reading/Writing/Listening
3	Press reviews: Methodology	Listening
4	Glassware and plasticware items / Process descriptions / Grammar	Reading/Writing
5	Colloquial vocabulary / Stem cells / PHD support	Presentation skills/Reading/Speaking
6	Medical discoveries / Medical research committee / Vocabulary building	Watching/Speaking/Presentation skills
7	The Story of Cosmetics / Cosmetic products / Signposting	Watching/Speaking/Presentation skills
8	Abstracts and research papers / Presentation grading criteria / Phonology	Reading/Writing/Presentation skills/Listening
9	In-class prep	
Project Presentations		
Sessions 10 through 12, or 9 through 12 if necessary		

ASSESSMENT: The module is assessed through 100% continuous assessment. You will be assessed on

- two written tests (50% of the final grade)
 - o One multiple-choice language test for which you will prepare using the distance learning activities on MADOC. This will count for 10% of the final grade (20% of the written grade) and will be taken on MADOC. Your group teacher will tell you when to take the test.
 - o One written test that will combine listening comprehension and writing. You will be given an audio document that will be between 15 and 30 minutes long. You will have to write a summary on the contents of the document in your own words (250 words, +/- 10%). The document will be made available on MADOC at a date your group teacher will specify. You will have two days from then to upload your text on the submission space on MADOC. (40% of the final grade, 80% of the written grade)
- your presentation (see opposite page) (50% of the final grade)

ATTENDANCE

Attendance is, of course, **compulsory**. Please remember to **notify your group teacher** (preferably in advance) if you cannot attend a lesson **AND to fill in the questionnaire on MADOC**. Please note that, if unaccounted for, **absences will lead to direct penalty** on your grade.

VERY IMPORTANT: TESTS AND JUSTIFIED ABSENCES

For any justified absence you will **have to take a resit** (or get zero for the corresponding mark).

To make sure you attend that resit, it is **your responsibility** to justify your absence on MADOC AND get in touch with the head of the module when you miss a test (cecile-marie.lereste@univ-nantes.fr).

MADOC DISTANCE LEARNING ACTIVITIES

The distance learning activities are compulsory and **must be completed by session 6** at the latest.

IMPORTANT: A NOTE TO NON-ATTENDEE STUDENTS (*étudiant-e-s dispensé-e-s d'assiduité*)

Assessment procedures for non-attendeé students are specific. If you have or acquire this status in the course of the semester, **you cannot be assessed through continuous assessment**. If you have or acquire this status in the course of the semester and wish to **audit** the lessons, you must contact christine.foucat@univ-nantes.fr as early as possible to discuss your situation. This cannot be arranged directly with your group teacher.

TOEIC PREPARATION DISTANCE LEARNING COURSE

If you are considering taking the TOEIC test this semester, a training course is available on MADOC.

SCIENCE IN ENGLISH PROJECT**ASSIGNMENT**

In groups of three, you will be asked to prepare a LITERATURE REVIEW on a topic of your choice.

1. You will prepare and present an oral presentation on a topic of your choice related to your field of study: your presentation should give an overview of the question, putting various sources in perspective. It should be structured, documented and personal (i.e. in your own words).

You will have approximately 15 minutes (per group) to present your work and will be expected to use appropriate presentation tools.

Following your presentation, you will be expected to answer questions from the audience.

According to the “Dublin descriptors” that define international standards for learning outcomes at university, completion of a Bachelor’s degree means that students should be able to “communicate information, ideas, problems and solutions to both specialist and nonspecialist audiences.” Your presentation should therefore be clear even to non-specialists.

2. You will be asked to ask questions after one of your fellow students’ group presentation. You will not present yourselves but should be sufficiently prepared to react to the proposed presentation.
3. For all oral presentations: you will have to make notes during the presentations and ask questions.

AIM & LEARNING OBJECTIVESLanguage and communication:

- Developing your knowledge of specific vocabulary in context
- Improving oral and presentation skills

Scientific communication

- Practicing oral synthesis
- Interacting with a speaker/an audience

ASSESSMENT

Presentations will take place in the last 3 to 4 sessions.

You will receive individual marks based on your oral presentation (assessing content, communication, and language) as well as on your involvement in questioning.

INTERNATIONAL PHONETIC ALPHABET

Key to phonetic symbols for English

RP Gen Am	Consonants	RP Gen Am	Vowels
• •	p pen, copy, happen	• •	ɪ kit, bid, hymn
• •	b back, bubble, job	• •	e dress, bed
• •	t tea, tight, button	• •	æ trap, bad
•	t̪ city, better	•	ɒ lot, odd, wash
• •	d day, ladder, odd	• •	ʌ strut, bud, love
• •	k cup, kick, school	• •	ʊ foot, good, put
• •	g get, giggle, ghost	• •	i: fleece, sea, machine
• •	tʃ church, match, nature	• •	eɪ face, day, steak
• •	dʒ judge, age, soldier	• •	aɪ price, high, try
• •	f fat, coffee, rough	• •	ɔɪ choice, boy
• •	v view, heavy, move	• •	u: goose, two, blue
• •	θ thing, author, path	•	əʊ goat, show, no
• •	ð this, other, smooth	•	oʊ goat, show, no
• •	s soon, cease, sister	•	ɒʊ variant in cold
• •	z zero, zone, roses, buzz	• •	aʊ mouth, now
• •	ʃ ship, sure, station	•	ɪə near, here, serious
• •	ʒ pleasure, vision	•	eə square, fair, various
• •	h hot, whole, behind	• •	ɑ: start, father
• •	m more, hammer, sum	•	ɑ: lot, odd
• •	n nice, know, funny, sun	• •	ɔ: thought, law, north, war
• •	ŋ ring, long, thanks, sung	•	ʊə cure, poor, jury
• •	l light, valley, feel	•	ɜ: nurse, stir
• •	r right, sorry, arrange	•	ɝ: nurse, stir, courage
• •	j yet, use, beauty	• •	i happy, radiation, glorious
• •	w wet, one, when, queen	• •	ə about, comma, common
		•	father, standard
		• •	u influence, situation, thank you
		• •	ɪ intend, basic
		•	ʊ stimulus, communist
			<i>In foreign words only:</i>
• •	x loch, chutzpah	•	ɔ̃ grand prix, chanson
•	ʃ Llanelli, Hluhluwe	•	ɑ̃: grand prix, chanson
		• •	œ̃ vingt-et-un
		•	ɛ̃: vingt-et-un

Source: Longman Pronunciation Dictionary

TECHNICAL VOCABULARY

STARTER: Which cell components can you name (and pronounce correctly!)?

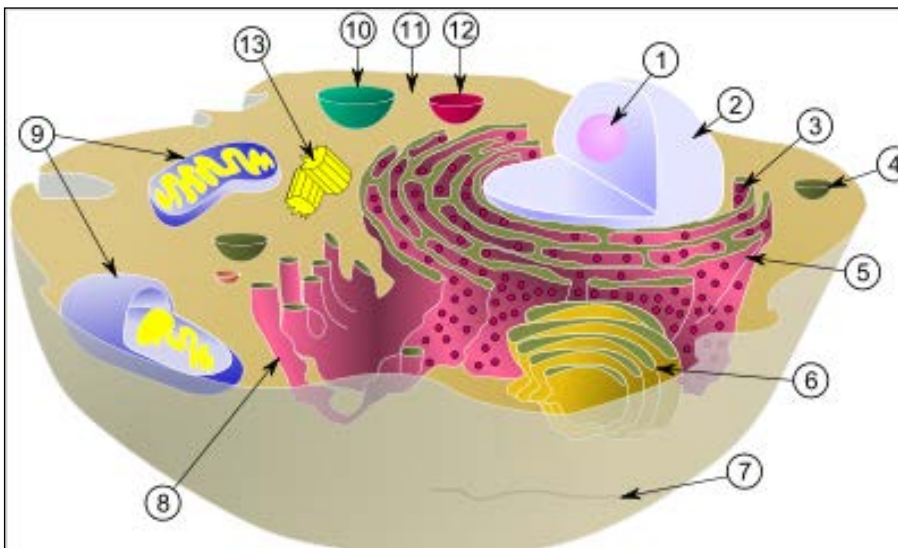


Diagram of a typical animal (eukaryotic) cell, showing subcellular components
Original Authors
MesserWoland and
Szczepan1990 GrahamColm at
en.wikipedia -

Organelles:

(1) nucleolus /njuˈkliːələs/

(2) nucleus /ˈnjuːkliəs/

(3) ribosome during translation of extracellular or anchored protein /ˈraɪbəsəʊsəʊm/

(4) vesicle /ˈvesɪkəl/

(5) rough endoplasmic reticulum (RER) /ˈrʌf ˌendəʊˈplæzmiːk rɪˈtɪkjʊləm/

(6) Golgi apparatus /ˈgɒldʒi/

(7) Cytoplasmic membrane

(8) smooth endoplasmic reticulum

(9) mitochondria /ˌmaɪtəʊˈkɒndrɪə/

(10) vacuole

(11) cytoplasm

(12) lysosome /ˈlaɪsəʊsəʊm/

(13) centrioles within centrosome

ABOUT HEMATOPOIESIS: Match the following terms with the corresponding definitions

1) HSC (Hematopoietic stem cell)	a) A biological cell that, like a stem cell, has a tendency to differentiate into a specific type of cell, but is already more specific than a stem cell and is pushed to differentiate into its "target" cell. The most important difference between stem cells and these cells is that stem cells can replicate indefinitely, whereas these cells can divide only a limited number of times. Controversy about the exact definition remains and the concept is still evolving.
2) IGF-1 (Insulin-like growth factor 1)	b) A family of enzymes whose activity is dependent on cellular levels of cyclic AMP (cAMP). It has several functions in the cell, including regulation of glycogen, sugar, and lipid metabolism.
3) Lineage bias	c) A hormone similar in molecular structure to insulin. It plays an important role in childhood growth and continues to have anabolic effects in adults. A synthetic analog of this, mecasermin, is used for the treatment of growth failure. It consists of 70 amino acids in a single chain with three intramolecular disulfide bridges. and has a molecular weight of 7,649 daltons.
4) PKA (Protein kinase A)	d) An imbalance in the ratio of lymphoid to myeloid cells in blood.
5) Progenitors	e) The blood cells that give rise to all the other blood cells and are derived from mesoderm. They give rise to the myeloid (monocytes and macrophages, neutrophils, basophils, eosinophils, erythrocytes, megakaryocytes/platelets, dendritic cells), and lymphoid lineages (T-cells, B-cells, NK-cells). The definition of those cells has changed in the last two decades. These tissues contain cells with long-term and short-term regeneration capacities and committed multipotent, oligopotent, and unipotent progenitors. They constitute 1:10.000 of cells in myeloid tissue.
6) WBC (White Blood Cells)	f) The cells of the immune system that are involved in defending the body against both infectious disease and foreign invaders. Five different and diverse types of leukocytes exist, and several types (including monocytes and neutrophils) are phagocytic. All leukocytes are produced and derived from a multipotent cell in the bone marrow known as a hematopoietic stem cell. They live for about three to four days in the average human body. Leukocytes are found throughout the body, including the blood and lymphatic system.

Definitions adapted from wikipedia.org

TECHNICAL VOCABULARY

Fasting triggers stem cell regeneration of damaged, old immune system

June 5, 2014

Science Daily.com

In the first evidence of a natural intervention **triggering** stem cell-based regeneration of an organ or system, a study in the June 5 issue of the Cell Press journal *Cell Stem Cell* shows that cycles of prolonged **fasting** not only protect against immune system damage -- a major **side effect** of chemotherapy -- but also **induce** immune system regeneration, shifting stem cells from a dormant state to a state of self-renewal.

In both mice and a Phase 1 human clinical trial, long periods of not eating significantly **lowered** white blood cell counts. In mice, fasting cycles then "flipped a regenerative switch": changing the signaling pathways for hematopoietic stem cells, which are responsible for the generation of blood and immune systems, the research showed.

The study has major implications for healthier aging, in which immune system decline contributes to increased susceptibility to disease as we age. By **outlining** how prolonged fasting cycles -- periods of no food for two to four days at a time over the course of six months -- kill older and damaged immune cells and generate new ones, the research also has implications for chemotherapy tolerance and for those with a wide range of immune system deficiencies, including autoimmunity disorders.

"We could not predict that prolonged fasting would have such a remarkable effect in promoting stem cell-based regeneration of the hematopoietic system," said corresponding author Valter Longo, the Edna M. Jones Professor of Gerontology and the Biological Sciences at the USC Davis School of Gerontology, and director of the USC Longevity Institute.

"When you **starve**, the system tries to save energy, and one of the things it can do to save energy is to recycle a lot of the immune cells that are not needed, especially those that may be damaged," Longo said. "What we started noticing in both our human work and animal work is that the white blood cell count goes down with prolonged fasting. Then when you re-feed, the blood cells come back. So we started thinking, well, where does it come from?"

Prolonged fasting forces the body to use stores of glucose, fat and ketones, but also breaks down a significant portion of white blood cells. Longo **likens** the effect to lightening a plane of excess cargo.

During each cycle of fasting, this **depletion** of white blood cells induces changes that trigger stem cell-based regeneration of new immune system cells. In particular, prolonged fasting reduced the enzyme PKA, an effect previously discovered by the Longo team to extend longevity

in simple organisms and which has been linked in other research to the regulation of stem cell self-renewal and pluripotency -- that is, the potential for one cell to develop into many different cell types. Prolonged fasting also lowered levels of IGF-1, a growth-factor hormone that Longo and others have linked to aging, tumor progression and cancer risk.

"PKA is the key gene that needs to shut down in order for these stem cells to switch into regenerative mode. It gives the 'okay' for stem cells to go ahead and begin proliferating and rebuild the entire system," explained Longo, noting the potential of clinical applications that mimic the effects of prolonged fasting to rejuvenate the immune system. "And the good news is that the body got rid of the parts of the system that might be **damaged** or old, the inefficient parts, during the fasting. Now, if you start with a system heavily damaged by chemotherapy or aging, fasting cycles can generate, literally, a new immune system."

Prolonged fasting also protected against toxicity in a pilot clinical trial in which a small group of patients fasted for a 72-hour period prior to chemotherapy, extending Longo's **influential** past research: "While chemotherapy saves lives, it causes significant collateral damage to the immune system. The results of this study suggest that fasting may mitigate some of the harmful effects of chemotherapy," said co-author Tanya Dorff, assistant professor of clinical medicine at the USC Norris Comprehensive Cancer Center and Hospital. "More clinical studies are needed, and any such dietary intervention should be undertaken only under the guidance of a physician."

"We are investigating the possibility that these effects are applicable to many different systems and organs, not just the immune system," said Longo, whose lab is in the process of conducting further research on controlled **dietary** interventions and stem cell regeneration in both animal and clinical studies.

Story Source:

The above story is based on materials provided by University of Southern California. The original article was written by Suzanne Wu. Note: Materials may be edited for content and length.

Journal Reference:

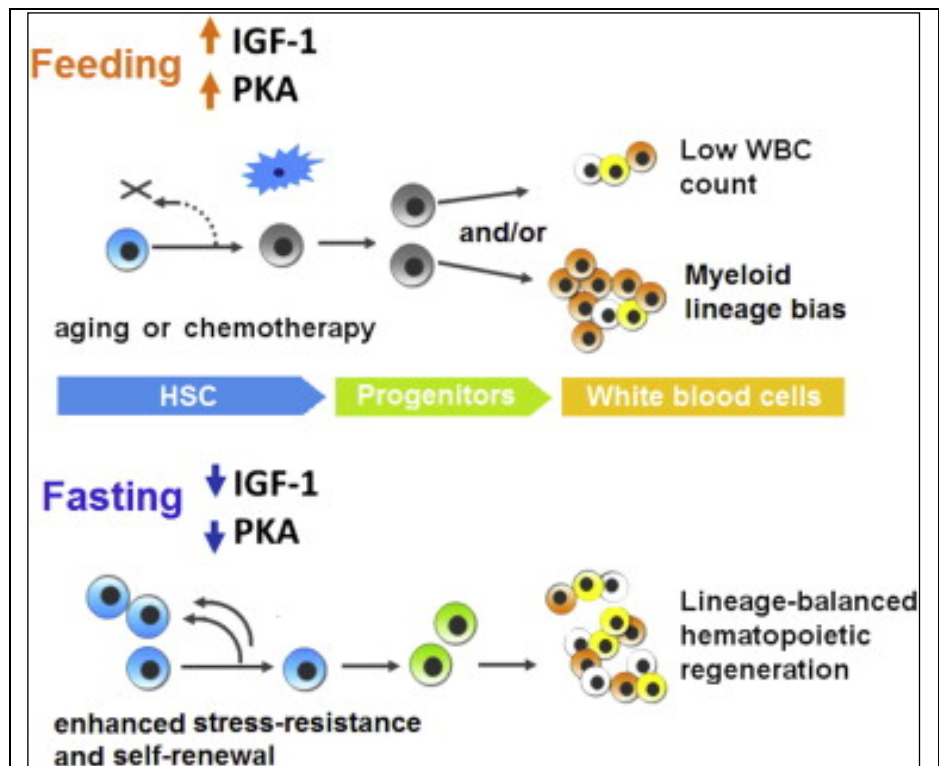
Chia-Wei Cheng, Gregor B. Adams, Laura Perin, Min Wei, Xiaoying Zhou, Ben S. Lam, Stefano Da Sacco, Mario Mirisola, David I. Quinn, Tanya B. Dorff, John J. Kopchick, Valter D. Longo. Prolonged Fasting Reduces IGF-1/PKA to Promote Hematopoietic-Stem-Cell-Based Regeneration and Reverse Immunosuppression. *Cell Stem Cell*, 2014; 14 (6): 810 DOI: 10.1016/j.stem.2014.04.014

VOCABULARY: Pair the words printed in bold in the text with the following definitions

	An unintended consequence of a drug or therapy; usually not beneficial.
	Important, having or exerting influence.
	Injury or harm; the condition or measure of something not being intact.
	Of, or relating to any habitual or exceptional intake or consumption of food and drink.
	the consumption of a resource faster than it can be replenished.
	To abstain from food, or eat very little, especially for religious or medical reasons.
	To be very hungry.
	To cause, bring about, lead to.
	To compare; to state that (something) is like (something else).
	To initiate something, to spark a response
	To reduce the degree, intensity, strength, etc., of
	To sketch, to summarize.

COMPREHENSION: Say whether the following are TRUE or FALSE. Justify if True, explain if False.

1. Tests have been conducted in mice only.
2. The article mentions three possible profiles for whom this research might have implications.
3. When fasting, the body has no other resources than fat.
4. Lowered levels of PKA and IGF-1 as induced by fasting/refeeding cycles could cause depression.
5. According to Longo, patients will not necessarily have to fast to benefit from such effects.
6. Longo's findings could mean the end of chemotherapy.
7. According to professor T. Dorff, it is important that patients do not initiate such diets without medical advice.
8. Longo hopes the benefits could extend beyond the immune system.



From Cell Stem Cell ; Volume 14,
Issue 6, 5 June 2014, Pages 810–823

NOTE-TAKING AND SUMMARIZING

SUMMARIZING METHODOLOGY



Credit: www.worldcitysummit.com.sg

There is a good chance you will get to attend trade conferences in the future. If participants come from a large array of countries, the medium of expression will probably be English.

If you want to take anything away from such an event, you will have to write many things down. Taking notes during a live event like a lecture or speech requires method... especially if the lecturer is speaking in a language that is not yours. Below you will find a few tips and you will apply them by watching a Ted talk video and producing a summary of it from the notes you took while watching it. This will also be a practice exercise for the written test.

Tips on taking notes:

1. **Prepare in advance**
2. **Follow a note-taking method**
3. **Don't capture everything**
4. **Review and summarize your notes**



1. Prepare in advance:

- Look at the title of **the video** you are about to watch and try to anticipate what it is going to be about.

TED How trees talk to each other | Suzanne Simard

- What content do you expect from this title?
- Do you have any previous personal knowledge or experience of the subject?
- Do you have any personal interest for the subject? If so why?
- Do you know some of the questions and problems related to the subject that scientists and engineers are still conducting research on right now?

NOTE-TAKING AND SUMMARIZING

You can use the following prompts to help you talk about your expectations:

I'm expecting the talk to be about...

I guess the speaker is going to offer/present/demonstrate...

Personally, I'm interested in the subject, mainly because...

I have read/watched a number of things on this, my takeaway (= conclusion) is that...

What I especially would like to learn more about is...

I'm hoping they're gonna say they have solved...

2. Follow a note-taking method

One critically acclaimed method is the **Cornell Note-Taking method**. It is a system for taking, organizing and reviewing notes and was devised by Prof. Walter Pauk of Cornell University in the 1950s.

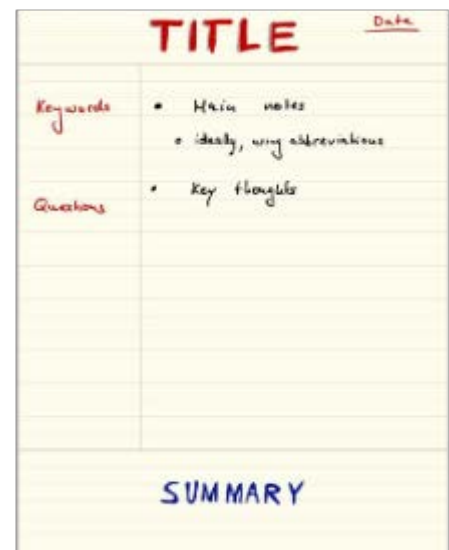
The page will be divided into 4 — or sometimes only 3 — different sections: Two columns, one area at the bottom of the page, and one smaller area at the top of the page.

The idea behind this is very easy. All actual notes from the lecture go into the main note-taking column.

The smaller column on the left side is for questions about the notes that can be answered when reviewing and keywords or comments that make the whole reviewing and exam preparation process easier.

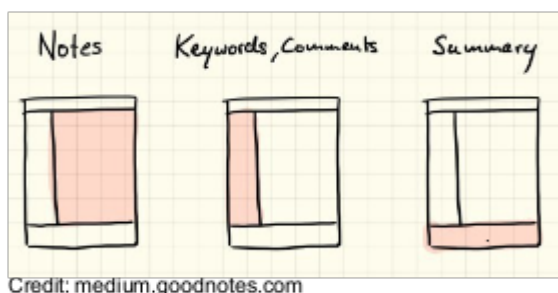
When reviewing the notes, a brief summary of every page should be written into the section at the bottom.

There is a pdf on MADOC with more examples of Cornell notes if you want to explore the system a little bit more.



Credit: medium.goodnotes.com

- Use your answers to the previous exercise to write down items in the “Keywords and questions” section on the following page. This will help you check whether your expectations were correct, limited or incorrect while you are watching the video.



Credit: medium.goodnotes.com

3. Don't capture everything

➤ Now watch the video and jot down notes along the way.

- You cannot write down full sentences.
- You must select the 2-3 words that will enable you to produce a whole sentence again, once the video is over
- Ideally, you should use abbreviations

NOTE-TAKING AND SUMMARIZING**4. Review and summarize your notes**

- Once you have watched the video, review your notes and add keywords, comments, and a very general summary.
- **Using all this, write an organized 250-word text summarizing the talk. Make sure that your summary follows the instructions below.**

The aim of your summary is to give the readers a condensed, structured, and objective account of the original document. After reading your text, readers should know what the overall point of the discussion is and should be able to identify the general ideas that run through the entire discussion. Those ideas must be expressed using precise and specific language. You must rephrase the audio/video using your own words and you must give an overview of the points raised in the discussion while avoiding overly general, vague language. Your summary must be structured, which means you may have to reorganize your notes. You do not have to follow the order in which the key ideas are mentioned in the audio/video. You must also decide which ideas are not important enough to warrant inclusion, so it is important to establish a clear hierarchy between the ideas discussed while you are taking notes.

The format of your summary must include a mention of the source of the audio/video in the first sentence. You must also establish the central concept at the beginning of your summary. Because your summary is an objective account of the discussion, you must not include your own opinions in the text. In general, you will use the present tense to summarize the central points of the discussion.

Adapted from [medium.goodnotes.com](https://medium.com/goodnotes.com), <https://advice.writing.utoronto.ca/researching/summarize/>,
<https://www.thoughtco.com/summary-composition-1692160>

NOTE-TAKING AND SUMMARIZING

KEYWORDS/QUESTIONS	MAIN NOTES
SUMMARY	

NOTE-TAKING AND SUMMARIZING

Implement your comprehension skills

Understanding the meaning of spoken English is just like understanding the meaning of written English. When you encounter words you do not know, you can apply the same methodology:

- Make a hypothesis, i.e. try to guess
- Decompose to find the root
- Skip the word and use a broader context
- Use a dictionary properly, i.e. check which meaning is the correct one
- Understand the word's relation to the rest of the sentence by noting its grammatical nature and function



Credit: img.bhs4.com

This video, like any other, offers an opportunity to learn some new vocabulary. In the list below there may well be a few words or expressions you do not know. Using the methodology described above, make an educated guess as to their meaning.

2'53 seedling:

3'28 replicates:

3'30 (paper) birch:.....

3'35 belowground:

4'00 scintillation counter:

10'02 fungal threads:

10'51 patch:

11'19 understory:

13'26 feedback:

14'59 disturbance rate:

14'50 pristine:

15'50 outbreak:

17'06 repositories of genes:

Useful resources:

Good general online dictionaries include <https://www.macmillandictionary.com/>, <https://www.lexico.com/>, or <https://www.wordreference.com/>. It is good practice to look up words in English-to-English dictionaries as well as English-to-French dictionaries.

If you need to look up more specialized vocabulary, you can use <http://gdt.oqlf.gouv.qc.ca/> (Le grand dictionnaire terminologique), or <https://www.btb.termiumplus.gc.ca/tpv2alpha/alpha-eng.html?lang=eng&index=alt> (Termium Plus), which are both Canadian resources.

If you want to practice summarizing texts, you can have a look at the tips and examples on the following website:

<http://www.uefap.com/reading/notetake/summary.htm>

CREATING A REVIEW

VIDEO: CITING SOURCES RESEARCH GUIDE: LITERATURE REVIEWS

This video from NCSU Libraries gives a helpful overview of literature reviews. Even though it says it's "for graduate students," the principles are the same for undergraduate students too!

1. DEFINING A REVIEW

- a. There are several contexts in which you might be requested to create a literature review. Can you **match the ones mentioned in the video** with the appropriate definition?

	They usually take the form of written pieces of work that are set by your course tutors. They also usually contribute towards your final course mark or grade. The types depend on the course you are studying. The most common are essays or reports. However, it is also possible that you will be set other kinds such as a group project or an oral presentation in your subject area, which may also be assessed. (adapted from prepareforsuccess.co.uk)
	Also called culminating project, or senior exhibition, among many other terms, it is a multifaceted assignment that serves as a culminating academic and intellectual experience for students, typically during their final year of high school or middle school, or at the end of an academic program or learning-pathway experience. (..) It is generally designed to encourage students to think critically, solve challenging problems, and develop skills such as oral communication, public speaking, research skills, media literacy, teamwork, planning, self-sufficiency, or goal setting. (adapted from edglossary.org)
	A document submitted in support of application for an academic degree or professional qualification presenting the author's research and findings. Depending on context, the terms can be used to refer either to part of a bachelor's or master's course, or to a doctorate. (adapted from Wikipedia.org)

- b. What are the **3 main functions** of a literature review as part of the research process?

.....

.....

- c. What is "the literature"?

Can you think of other sources of information on a given topic, besides those mentioned in the video?

.....

.....

- d. The literature needs to be seen as "a continuously evolving network of works that interact with each other".

Can you explain what this means? Why is the interaction process important?

.....

.....

- e. How can you ensure coherence?

.....

.....

CREATING A REVIEW

2. How?

Make notes on the different steps of the review process:

<i>TOPIC</i>	<i>RESEARCH AND INFORMATION COLLATION</i>	<i>BRAIN</i>	<i>CITATIONS</i>	<i>FINAL REVIEW</i>

3. A PRACTICAL APPROACH TO CREATING A REVIEW

a. Which of the listed skills correspond to each learning outcome?

DESCRIBE, SUMMARIZE, COMPARE AND CONTRAST, CRITICALLY EVALUATE, ANALYSE, ORGANIZE

Learning outcome	Skills involved
Collect and read relevant literature	
Provide an overview of relevant literature	
Highlight key concepts and papers	

b. Looking for links and relations between documents: what can they be?

.....

c. Some sources can come in support of an argument. Some refute it. Can you think of examples of sources based on the following topics?

TOPIC	ARGUMENT	SOURCES THAT MIGHT SUPPORT THE ARGUMENT	SOURCES THAT MIGHT REFUTE THE ARGUMENT
Vaccines	Vaccines cause autism		
Nuclear energy	Nuclear power is a clean and sustainable energy		

d. What is the main pitfall you want to avoid?

But don't fall into the trap of making your review a larger list of of the works you read. A literature review is not an annotated Your goal should be to go one step further and and what you find in that literature into Ideally, you will create your own conceptual map or outline of the literature on

e. To conclude: what does your review need to consist in besides direct use of sources?

.....

CREATING A REVIEW

EXAMPLE: THE PRESS REVIEW

An exercise similar to the literature review is the very French *Revue de Presse*, or *Press Review*

Watch the following video from *France 24* and answer questions about it.

- General comprehension

Which French papers are mentioned by the journalist?

What can you say about the general structure of the presentation?

What types of issues did the journalist choose to report about? Why?

- Creating coherence

About the budget crisis: how many papers are mentioned regarding that issue? How are they put in perspective?

About the Nice jewellery shooting: what types of articles from *Liberation* does the journalist report on? Why choose such articles for a press review?

About the power crisis inside the UMP: what is the connection/ transition with the previous item? How is the article about Alain Juppé brought up by the journalist?

About prostitution: in what way is the treatment of that issue different from the three previous ones? What is the main purpose here for the journalist / benefit for viewers?

About ducks in Villotran: what would you call that sort of news item? Why include it in the report?

- Transcript

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GLASSWARE AND PLASTICWARE ITEMS

A few laboratory glassware items (fill in the gaps with the words below):

Beakers are simple used to hold **reagents** or **samples**.

Flasks are narrow-necked glass containers, typically, used in a laboratory to hold reagents or samples.

Bottles are containers with narrow openings generally used to store Small bottles are called vials.

Jars are with wide openings that may be sealed.

Watch glasses are shallow glass dishes used as an evaporating surface or to cover a beaker.

Graduated cylinders are cylindrical containers used for volumetric measurements.

Stirring rods are used to

Burettes are used to dispense precise amounts of liquid reagents.

Condensers are used to cool hot

Funnels are used to get materials through a narrow opening.

Desiccators of glass construction are used to dry materials or keep material dry.

Glass tubes are cylindrical pieces of glassware used to hold or transport materials.

Glass pipettes are used to transport

Test tubes are used by chemists to hold, mix, or heat small quantities of solid or liquid chemicals, especially for qualitative experiments and

Glass petri dishes are used to culture

Drying pistols are used to free samples from, or other impurities.

Glass evaporating dishes are used to materials.

Microscope slides are thin strips used to hold items under a microscope.

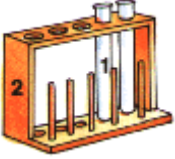




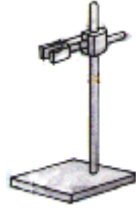








Missing words:

evaporate; living cells; mix chemicals; traces of water; conical or spherical; reagents or samples; liquids or vapors; precise quantities of fluids; assays; cylindrical shaped containers; cylindrical containers


GLASSWARE AND PLASTICWARE ITEMS


LEXICAL WORK:


Which of the following tools can you name?


			
			
			
			
			
			
			


Plasticware and glassware


A 


B 

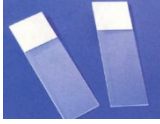
C 

D 

E 

F 

G 

H 

PROCESS DESCRIPTIONS**Northern blot****Procedure (Put the paragraphs in order)**

A To create controls for comparison in a northern blot, samples not displaying the gene product of interest can be used after determination by microarrays or RT-PCR.

B The membrane is washed to ensure that the probe has bound specifically and to avoid background signals from arising. The hybrid signals are then detected by X-ray film and can be quantified by densitometry.

C The transfer buffer used for the blotting usually contains formamide because it lowers the annealing temperature of the probe-RNA interaction preventing RNA degradation by high temperatures.

D The mRNA can then be isolated through the use of oligo (dT) cellulose chromatography to maintain only those RNAs with a poly(A) tail. RNA samples are then separated by gel electrophoresis.

E Once the RNA has been transferred to the membrane it is immobilized through covalent linkage to the membrane by UV light or heat. After a probe has been labeled, it is hybridized to the RNA on the membrane.

F Since the gels are fragile and the probes are unable to enter the matrix, the RNA samples, now separated by size, are transferred to a nylon membrane through a capillary or vacuum blotting system. A nylon membrane with a positive charge is the most effective for use in northern blotting since the negatively charged nucleic acids have a high affinity for them.

G http://en.wikipedia.org/wiki/Northern_blot

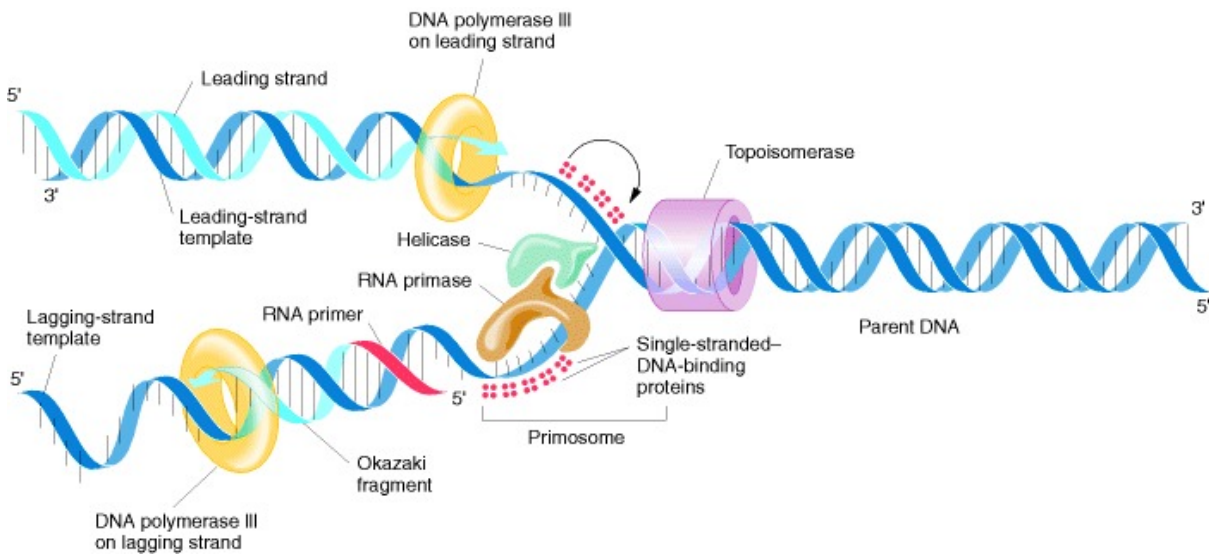
H A general blotting procedure starts with extraction of total RNA from a homogenized tissue sample.

I Experimental conditions that can affect the efficiency and specificity of hybridization include ionic strength, viscosity, duplex length, mismatched base pairs, and base composition.

PROCESS DESCRIPTIONS

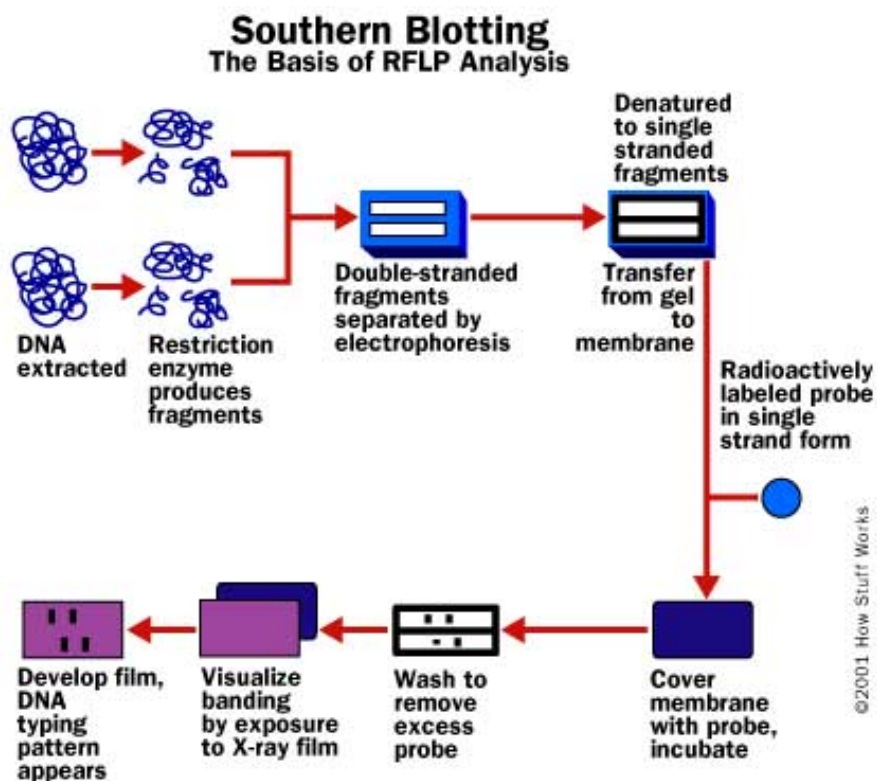
WRITING PRACTICE: *Work in groups of three.*

1/ *Using the diagram below, write a text that describes the mechanism of DNA replication.*



Source: Griffiths AJF, Miller JH, Suzuki DT, et al. *An Introduction to Genetic Analysis*. 7th edition. New York: W. H. Freeman; 2000. <http://www.ncbi.nlm.nih.gov/books/NBK21862/>

2/ *Using this scheme, write a text that describes the Southern Blotting process.*



VOCABULARY

LINK WORDS: Choose one of the following link words to complete the sentences below. (Source: Sue Blattes, Véronique Jans & Jonathan Upjohn. Minimum Competence in Scientific English. EDP Sciences: 2003.)

doubtless – whereas – besides – thereby – namely – despite – obviously – as a rule – nevertheless

1. _____ using rechargeable batteries, what other ways are there of storing energy?
2. The combustion of methane can produce an undesirable product, _____ carbon dioxide, which is responsible for global warming.
3. _____ its numerous spectacular successes, magnetic resonance imaging is not entirely satisfactory when applied to proteins.
4. The evidence has often been contradictory. _____, hypnosis is finding numerous medical uses.
5. _____, animals who survive in desert habitats tend to be small.
6. Oral administration of insulin does not reduce blood sugar, _____ orally administered corosolic acid can.
7. _____, when dealing with toxic and hazardous material, robots offer great advantages.
8. The gas containers are kept underground, _____ minimising temperature changes.
9. Environmental concerns will _____ be heightened in the years to come.

READING COMPREHENSION**STEM CELLS IMPROVE VISION ENOUGH FOR/ HORSE RIDING**

NEW SCIENTIST, 15 October 2014 by Andy Coghlan

Seeing is definitely believing when it comes to stem cell therapy. A blind man has recovered enough sight to ride his horse. A woman who could see no letters at all on a standard eye test chart can now read the letters on the top four lines. Others have recovered the ability to see colour. All have had injections of specialised retinal cells in their eyes to replace ones lost through age or disease.

A trial in 18 people with degenerative eye conditions is being hailed as the most promising yet for a treatment based on human embryonic stem cells.

"We've been hearing about their potential for more than a decade, but the results have always been in mice and rats, and no one has shown they're safe or effective in humans long term," says Robert Lanza of Advanced Cell Technology in Marlborough, Massachusetts, the company that carried out the stem cell intervention. "Now, we've shown both that they're safe and that there's a real chance these cells can help people."

Ten years ago, the team at Advanced Cell Technology announced that it had successfully converted human embryonic stem cells into retinal pigment epithelial cells. These cells help keep the eyes' light-detecting rods and cones healthy. But when retinal pigment epithelial cells deteriorate, blindness can occur. This happens in age-related macular degeneration and Stargardt's macular dystrophy.

Decline halted

In a bid to reverse this, Lanza's team injected retinal cells into one of each of the 18 participants' eyes, half of whom had age-related macular degeneration and half had Stargardt's. A year later, 10 people's eyes had improved, and the eyes of the others had stabilised. Untreated eyes had continued to deteriorate.

"On average, we're seeing three lines [on an eye test chart] of visual improvement in our patients," says Lanza.

There were no serious side effects – and no sign of tumours, which can be a potential risk in stem cell therapies.

Lanza says the aim of the study was to halt further deterioration, so the improvements in sight were an unexpected bonus. He speculates that the improvements might be the result of rods and cones that had become dormant when the native retinal pigment epithelial cells died, resuming their function when the fresh cells were added.

"The results are highly encouraging," says Pete Coffey of University College London, who heads a project to treat people with age-related macular degeneration using tiny patches of retinal pigment epithelial cells made from human embryonic stem cells.

Advanced Cell Technology is now planning a larger trial, first in 100 people with Stargardt's, then in people with macular degeneration.

Trials of cells made from human embryonic stem cells are also poised to begin in people with type 1 diabetes and heart failure, the first time embryonic stem cells have been used in the treatment of major lethal diseases. They have also been injected into the spines of four people with paralysis, although that trial is now on hold because the company running it, Geron, went bust.

Journal reference: *The Lancet*, DOI: 10.1016/S0140-6736(14)61376-3

READING COMPREHENSION

Vocabulary: Find words or expressions in the text that correspond to the following definitions

Words from the text (line number)	Synonyms
	To get back, regain (a physical thing lost etc.).
	To greet; give salutation to; salute.
	Having the power to produce a required result or results.
	Of or pertaining to the tissues lining the cavities and surfaces of structures throughout the body.
	The condition of being unable to see
	More, additional
	To make an inference based on inconclusive evidence; to surmise or conjecture.
	A small piece of anything used to repair damage or a breach.
	Ready, prepared.
	Deadly, mortal, fatal.

Comprehension

Choose the correct answer

- What range of improvement in sight did Lanza's team initially expect?
 - 3 lines
 - 4 lines
 - the ability to see colour
 - none
- Which of the following is NOT mentioned in the text as a potential cause of blindness?
 - exposure to sunlight
 - epithelial deterioration
 - age
 - Stargardt's macular dystrophy

Say whether the following sentences are true or false and justify your answer

- The effects of specialised retinal cells injections have been similar in all patients.
- The trial discussed in this paper is the first ever to use embryonic stem cells.
- According to Lanza, the most interesting aspect of these findings is proving the technique can be used in humans.
- In 2004, Lanza's team managed to clone healthy light detecting rods and cones.
- The patients treated in this clinical trial presented various forms of macular degeneration.
- After 12 months, the operation had produced results for all 18 treated patients.
- Lanza and his team had potentially expected tumours to appear.
- Trials involving the use of embryonic stem cells to treat paralysis have been abandoned for lack of result.

SPEAKING: PHD SUPPORT

STUDENT A: Your friend is working on his/her PhD thesis and is feeling really low: things are not coming together as well as they wish and they fear not to be able to meet the hand-in deadline. Talk to them about what they have already achieved and try to cheer him/her up!

STUDENT B: You are a PhD student and feeling really low: hand-in deadline is looming and you feel there is no way you will be able to meet it. You confide in one of your good friends explaining your worries and discouragement and letting them cheer you up!

PRESENTATION SKILLS: COLLOQUIAL VOCABULARY**Presentation Practice: Colloquial vocabulary**

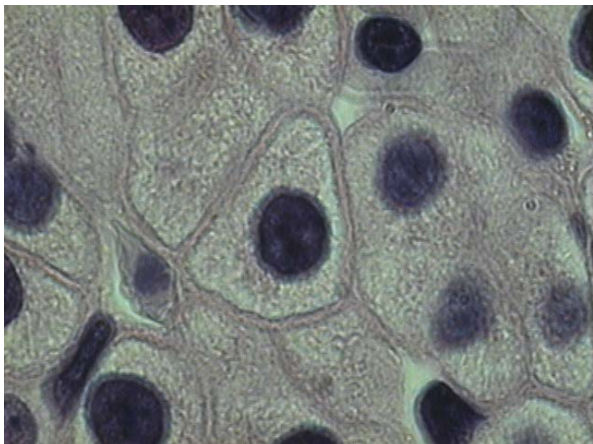
Complete each sentence with the appropriate preposition.

1. Are you me?
2. Could you just pick where we left yesterday?
3. And there are a few others that I'll just run really quickly.
4. That goes saying.
5. I'll talk about that due course.
6. Let's leave it that.
7. I'll first give you the framework, and then I'll flesh it
8. I'll probably touch this subject only briefly.
9. There were hardly any data to fall back on, so we had to start scratch.
10. It is difficult to pin the factors involved.
11. This kind of problem has cropped before.
12. We're still struggling to figure how we might be able to integrate this in the research.

Source: Blanpain, Kristin, and An Laffut. *Academic Spoken English: A Corpus-Based Guide to Lectures, Presentations, Seminars and Tutorials*. Acco: Leuven, 2012 (2nd edition).

VIDEO: RESEARCH

STARTER: *Can you tell what this picture shows?*



From blog.targethealth.com

Can you explain what the following refer to?

- | | |
|---------------|------------------|
| 1. Surgeon | 4. Computer chip |
| 2. Transplant | 5. Lab coat |
| 3. Shelf life | 6. Lab goggles |

Now watch the video and find the answers to these questions:

1. What are the 10 recent medical discoveries?

	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

2. What are traditional joint replacements made of? What are the new joints made of?

Old joints = _____ New joints = _____

3. How effective are the stents currently used in heart surgery?

4. How quickly can the Stanford muscles repair themselves?

5. What percentage of patients with newly designed pace makers report major complications?

VIDEO: RESEARCH

6. What task has brain implant patient Andy Burkhardt been able to perform?

7. What is the problem with Robert Langer's artificial skin?

8. How is bio-glass produced?

9. What does the solution remove from the ghost heart?

10. Down to what level do Harvard researchers hope to be able to study the brain using their mesh?

GROUP WORK

In groups of 3-4, you will form a medical research committee.

Your committee has a research grant of €1,000,000,000 to be given to one of the 10 discoveries from the previous exercise.

This amount of money will ensure that the research is completed for one **BUT ONLY ONE** of the projects.

You must decide which of the 10 projects is the most important or valuable and therefore deserves to be chosen.

Your group will be required to present your choice to the class and state why you have chosen that project and not one of the others

PRESENTATION SKILLS: VOCABULARY BUILDING

Structure: Below are a number of ways to state the purpose of your presentation. Complete the sentences using the words given.

IN THIS PRESENTATION/LECTURE, I'D LIKE TO...

TALK – INTRODUCE – EXPLORE – TAKE – REPORT – TELL

1. to you about our project.
2. you about my research.
3. you to the fascinating topic of data protection.
4. a look at the impact of social media on our everyday lives.
5. on the results of a study on risk analysis.
6. the issue of algorithmic efficiency.

I'LL START BY...

MAKING – DESCRIBING – BRINGING – GIVING – FILLING – LOOKING

1. you in on the general background.
2. a few preliminary remarks on the methodology I used.
3. you up-to-date on developments at the EU level.
4. recent technological developments.
5. you an overview of current theories.
6. at the main indicators of school effectiveness.

AND THEN I'LL GO ON TO

PUT – DISCUSS – MAKE – HIGHLIGHT – TAKE

1. you through a couple of practical applications.
2. the implications of my results.
3. a number of recommendations to improve existing legislation.
4. the situation into some kind of perspective.
5. three key methodological features.

Source: Blanpain, Kristin, and An Laffut. *Academic Spoken English: A Corpus-Based Guide to Lectures, Presentations, Seminars and Tutorials*. Acco: Leuven, 2012 (2nd edition).

THE STORY OF COSMETICS

STARTER

How many personal care products do you use every day?
Do you know what's in them?

What do you know about 'organic' cosmetic products and what do you think about them?

What do you know about the regulation on organic products in Europe? What about the US?

VIDEO

Answer the following questions about the first two parts of the document:



PART 1

1. What is the problem with our contemporary society?
2. What is Annie Leonard's shampoo mainly composed of and what is the problem with these substances?
3. What are the other examples mentioned?
4. Fill in the following chart with appropriate figures:

<i>Number of care products used daily by the average US woman</i>	
<i>Number of care products used daily by the average US man</i>	
<i>Average number of substances contained in each product</i>	
<i>Number of substances tested by the industry for safety panels</i>	

5. What substances were found in Annie Leonard's body?

PART 2

1. What seems paradoxical about the examples of the Procter&Gamble shampoo and the Estee Lauder product?
2. Can you trust a product labeled 'organic', 'natural' or 'herbal'?

Source: <http://storyofstuff.org/movies/story-of-cosmetics/>

PRACTICAL SKILLS!

1. Work as a group to discuss the safety of your favorite cosmetic products! Each member of the group should take out his/her product and read the label while the other members check out the safety of its ingredients in the Skin Deep database <http://www.ewg.org/skindeep/>
2. Follow the instructions developed in the role cards given out to each team. Don't forget to interact and use each other's arguments to make your point.

PRESENTATION SKILLS: SIGNPOSTING

I. Signposting: Complete the sentences.

What would you say if you wanted	
TO MARK THE TRANSITION TO A NEW TOPIC	Let's on to the next issue to consider. (1 word) That us to our next point. (1 word)
TO DIRECT YOUR AUDIENCE'S ATTENTION TO A GRAPH OR SLIDE	Let's a closer look at this diagram. (1 word) I'd like you this chart. (3 words) I'd like to draw this graph. (3 words)
TO PARAPHRASE	To put way, ... (2 words) So, in....., what I'm saying is that... (2 words) put, this means that ... (1 word)
TO REFER TO A PREVIOUS POINT	As for methodology, I've mentioned that ... (1 word) Going to a point I made earlier, ... (1 word) I said at the outset, ... (1 word)
TO SUMMARIZE SOME POINTS YOU HAVE MADE short, we can say that ... (1 word) To on the main points, ... (1 word) So the key point to in mind is ... (1 word) Let's briefly what we've looked at (1 word)
TO CONCLUDE	To up, I would like to say that ... (2 words) I'd like to, if I may, by ... (1 word)
TO INVITE QUESTIONS	Please to ask questions. (2 words) I'm to answer any queries / questions you may have. (1 word)

DO NOT end your presentation too abruptly. In particular, it is not acceptable to just say "Finished!" at the end of a talk. Also remember to structure your presentation appropriately. Use the following as a general guide to presentation structure:

- Introduction – Introduce what you will be presenting, let the audience know there will be time for questions at the end
- Overview – Give a general outline of your presentation
- State Points – Give your points in logical sequence, giving explanations and exceptions and using appropriate signposting language so your audience knows where you are in your presentation
- Summarise.
- Close – Relate the beginning of the presentation to the end.
- Questions – Ask the audience if they have any questions.

ABSTRACTS AND RESEARCH PAPERS

I. Discuss the following questions.

1. What is the structure of a research paper?
2. What is the purpose of an abstract?
3. How can an abstract help a researcher choose which papers to read?
4. What information does the abstract usually include?

II. Read the following extracts from an abstract. Match each section from the IMRAD pattern to an extract (A-D).

- A With the aim of evaluating this possibility two microorganisms, *Acidithiobacillus ferrooxidans*, an acidophile, and *Deinococcus radiodurans*, a radiation-resistant microorganism, were exposed to simulated Mars conditions; that is, 95% CO₂, 2.7% N₂, 1.6% Ar and 0.6% H₂O with a pressure of 7 mbars. Temperature was set at 150 K and ultraviolet radiation was in the wavelength range of 200–400 nm. Exposure was for different times under the protection of 2 and 5 mm layers of oxidised iron minerals. Survival was evaluated by growing the organisms on fresh media.
- B The resistance of organisms to extreme conditions like the conditions which exist on the surface of Mars under the protection of a thin material layer increases the possibility that life could exist on Mars.
- C Here we report that both the 2 and 5 mm thick layers provided enough protection against radiation and Mars environmental conditions for the bacteria to survive (Figs. 2 & 3).
- D Current surface conditions on Mars are extremely challenging for life. However, Nicholson and Schuerger (2005) reported that *Bacillus subtilis* was able to survive for 19 days under Mars atmospheric pressure and composition. The question is whether there are any features on Mars that could provide protection against the surface conditions. One possibility is that the surface material plays a protective role due to the fact that it is composed of iron oxides and hydroxides.

Source: Cambridge English for Scientists. Tamzen Armer. Cambridge: 2011.

III. In the document, the author uses phrases to signal the purpose of each part of the abstract. In each extract, identify a phrase used for a purpose listed in the following table and write it down:

State research question	Present hypothesis	Introduce method	Introduce key results

ABSTRACTS AND RESEARCH PAPERS

IV. Rewriting exercise: The abstract below (from UC Berkeley's website) meets most of the criteria for a good abstract. However, it contains language mistakes. See if you can correct them.

"Quantifying the Mechanics of Laryngoscopy"

Laryngoscopy is a medical procedure that involve passing a breathing tube through the mouth and into the lungs of a patient. The ability to successfully perform a laryngoscopy depends of the operator's skill; experienced physicians have failure rates of 0,1% or less, while less experienced paramedics may having failure rates of 10-33%, which can lead to dead or brain injury. Consequently, better training methods are needed. The immediate objective of this research project were to measure the mechanics of laryngoscopy, so that an advanced training mannequin could to be developed. Last summer a laryngoscope was developed to quantify the interactions between the laryngoscope and the patient. Experienced physicians as well as residents used these device on an existing mannequin, and the trajectories were visualized in 3D. One objective was to enable the development of a realistic training simulator. In the future an advanced training mannequin based on our measurements was developed.

Breathing tube = respirateur

Lungs = poumons

Brain injury = lésion cérébrale

Residents = internes

PRESENTATION GRADING CRITERIA

CONTENT	
Structure	Your presentation has to be structured AND your structure has to be made apparent (announcing outline in intro, using transitions)
Thoroughness	Even if you do not have much time, you can and should be thorough: focus on the most important things you have to say and be straightforward
Accuracy	Do not assume that your audience is ignorant: be precise and accurate.
COMMUNICATION	
Body language	When standing in front of an audience, remember your body says as much as your tongue: do not slouch, fidget, or keep your back to the board. Engage in communication with the whole group!
Volume and speed	Do not read/ hide behind your notes! Articulate and speak loud enough. Remember you WANT (remember TO want!) your message to be understood!
Eye contact	Look at everyone!
Visual aid	Communication tools may include ppt slideshows, diagrams, or other props (experimental setup). Either way, they remain TOOLS that need to be fully integrated in your communication plan. Simple approaches can help enhance the quality of your work!
LANGUAGE	
Grammar	Even though grammar mistakes are more acceptable in an oral than written context, basic errors must be eliminated (see L1+2 forbidden mistakes)
Pronunciation	It is crucial to check the pronunciation of new vocab as well as key (and therefore recurring) elements in your presentation: not only will mistakes hinder communication, they also discredit your performance
Vocabulary	Use simple language (both in terms of syntax and lexis). But make sure you DO have the right lexical references.

PHONOLOGY

A word on phonology

In spoken English stresses play an important role. They determine what we can clearly hear from what we can barely distinguish. You must first become aware of this fact before you can overcome the difficulties of understanding native speakers without a glitch.

In general, words fall into two categories:

CONTENT words (also called lexical words)
GENERALLY STRESSED

- Nouns
- Verbs
- Adjectives
- Adverbs

FUNCTION words (also called structure words)
GENERALLY NOT STRESSED

- (most) Determiners
- (most) Auxiliaries
- (most) Prepositions
- (most) Conjunctions
- (most) Pronouns

- Read the following sentences and decide if the words are **CONTENT** or **FUNCTION** words (circle the content words). Then listen to the audio track and check your answers.

1. Put the flowers on the table.
2. The meeting ended with a vote.
3. The worst problem was the matter of status.
4. The effect of these gases is growing daily.
5. I had never spoken to her before.

Weak vs strong forms

Depending on the situation, native speakers of English will decide whether to stress or not certain words within a sentence.

This is especially true for function (or structure) words which are generally not stressed. In general, they will follow the pattern shown below:

- ✓ Normal meaning + normal situation = probably unstressed (weak form)
 - ✓ Normal meaning + emphatic situation = probably stressed (strong form)
 - ✓ Special meaning = almost inevitably stressed
- For the following featured words, decide, in each pair, which one is **weak** (unstressed) and which one is **strong** (stressed). Read the sentences and mark your answers, then listen to the audio track and check.

1. THAN

- a. She's better than I am.
- b. 'Than' comes between 'texture' and 'thanks' in my dictionary.

2. THERE

- a. Is there any milk left?
- b. There's an old mill by the stream, they tell me.

3. OF

- a. He's the only one I've ever heard of.
- b. A box of matches please.

4. WAS

- a. Bobby Charlton was a marvellous striker.
- b. "Was there anything else, Sir?"

PHONOLOGY

5. CAN
 - a. "YOU CANNOT BE SERIOUS!"
 - b. I can see clearly now the rain has gone.

6. AND
 - a. I ate a full English breakfast, a five course lunch and a substantial dinner.
 - b. I love fish and chips but I'm on a diet.

7. FROM
 - a. Where's he coming from?
 - b. He came from a long line of aristocrats.

8. US
 - a. Give us this day our daily bread...
 - b. He didn't give it to us, he gave it to them.

9. SOME
 - a. Some hope!
 - b. I'd love some cream on these strawberries.

10. TO
 - a. He came to the party after all.
 - b. After the party he was some time coming to.

Source: Ray Parker & Tim Graham. *The Phonology of English: An Introduction for Teachers of ESOL*. ELB Publishing: Brighton, 2009 (First published 1994).

FURTHER PRACTICE**GRAMMAR: Translate the following sentences from French into English**

1. Cette augmentation de 70% s'explique par le fait qu'aucune vaccination systématique n'a été effectuée pendant cette période.
2. Ce montage comprend 5 parties. Les différents éléments sont reliés à un ordinateur, équipé/muni d'un scanner.
3. Ce nouvel appareil de détection de fumée sera bientôt commercialisé.
4. Ce robot, qui a la forme d'un être humain et qui résiste à l'eau, a une intelligence artificielle qui s'adapte rapidement.
5. Les données sont en train d'être traitées, mais il semble que l'érosion est restée stable depuis près d'un siècle.
6. Regarde-le ! Pourquoi porte-t-il un T-shirt « Einstein avait tort » ? – C'est parce qu'il écrit une thèse sur le sujet.
7. Les scientifiques travaillent sur ce projet depuis deux ans, mais n'ont fourni aucun résultat fiable.
8. Les ventes d'ordinateurs portables ont augmenté de façon spectaculaire ces trois dernières années, tandis que les ordinateurs de bureau se vendent de moins en moins dernièrement.
9. Il s'est spécialisé dans l'étude du mode de reproduction de cette espèce en voie de disparition.
10. L'expérience de Miller, qui est censée expliquer l'origine de la vie, est très controversée.
11. Ils seraient capables de comprendre la physique quantique s'ils pensaient à acheter les bons livres.
12. Nous sommes heureux de vous annoncer que vous avez réussi à découvrir un nouvel élément.
13. Les scientifiques de la NASA se sont peut-être trompés ; ils n'auraient pas dû publier leurs résultats aussi tôt.
14. D'ici 2020, la température de l'océan aura augmenté de 0,5°, ce qui risque de provoquer des disparitions d'espèces marines.
15. Beaucoup de fausses informations ont circulé sur les implications de ces recherches.
16. De moins en moins d'étudiants choisissent d'étudier les mathématiques fondamentales ; l'attrait des mathématiques appliquées s'explique en partie par les nombreux débouchés de ces filières, notamment dans la finance. Pourtant, l'expérience prouve que peu de ces étudiants toucheront beaucoup d'argent.

FURTHER PRACTICE

Choose the best answer to complete the following sentences.

1. The deadline for ... an abstract was in November.
 - a. submit
 - b. sustaining
 - c. submitting
 - d. submitted
2. Did they comment ... her performance?
 - a. on
 - b. about
 - c. Ø
 - d. to
3. They wished to participate ... the conference.
 - a. to
 - b. with
 - c. at
 - d. in
4. More than two ... people attended the conference.
 - a. thousands
 - b. thousand of
 - c. hundreds
 - d. hundred
5. The aim of my presentation is to describe ... our process for recycling polymers.
 - a. you
 - b. at you
 - c. to you
 - d. with you
6. I am going to present ... an overview of the physics of smart materials.
 - a. you
 - b. at you
 - c. to you
 - d. you to
7. Let me show ... this graph.
 - a. you
 - b. at you
 - c. to you
 - d. you to
8. I would like to introduce ... a new approach.
 - a. you
 - b. at you
 - c. you to
 - d. you at
9. We had been requested to limit one slide ... one main idea.
 - a. for
 - b. at
 - c. to
 - d. on
10. Don't leave a slide on the screen after ... its subject.
 - a. discussing
 - b. discussed
 - c. to explain
 - d. to discuss
11. Each poster session author will be provided ... a horizontal poster board and chair.
 - a. of
 - b. on
 - c. Ø
 - d. with
12. Use duplicates if you need to refer ... the same slide at several different times in your talk.
 - a. at
 - b. to
 - c. back
 - d. for
13. This course is a general introduction ... the history of science.
 - a. to
 - b. in
 - c. at
 - d. on
14. This course is designed to provide ... an overview of the theory of Fourier transform.
 - a. with
 - b. over
 - c. Ø
 - d. by
15. He undertook a ... undergraduate course in 2005.
 - a. two-year
 - b. two-year-ed
 - c. two years
 - d. two year's
16. She had been admitted ... ISIA in 1991.
 - a. at
 - b. Ø
 - c. to
 - d. for
17. They entered ... Cambridge University in 2013.
 - a. at
 - b. into
 - c. in
 - d. Ø
18. They had pursued studies ... Computer Science.
 - a. of
 - b. for
 - c. in
 - d. to

FURTHER PRACTICE

19. I was advised ... Physics.
- | | |
|---------------|------------------|
| a. not choose | c. not to choose |
| b. choose not | d. not choosing |
20. Our training ... 5 months ago.
- | | |
|----------------|------------|
| a. has started | c. started |
| b. has begun | d. begin |
21. They requested ... before the end of the academic year.
- | | |
|---------------------------------|--------------------------------------|
| a. us to get in touch with them | c. that we'll get in touch with them |
| b. us get in touch with them | d. we got in touch with them |
22. This course will introduce students ... the phenomenon of light scattering.
- | | |
|---------|-------|
| a. over | c. at |
| b. Ø | d. to |
23. This course will end ... a general discussion.
- | | |
|---------|---------|
| a. at | c. by |
| b. with | d. into |
24. Attendance ... the first class meeting is mandatory.
- | | |
|--------|-------|
| a. at | c. in |
| b. for | d. to |
25. Enrollment is limited ... 60 students.
- | | |
|-------|-------|
| a. at | c. to |
| b. on | d. by |
26. For more ... about the program, please contact the administration office.
- | | |
|-----------------|----------------|
| a. informations | c. items |
| b. detail | d. information |
27. Before ..., make sure you have chosen the right program.
- | | |
|-----------------|------------------|
| a. enrolling | c. to enroll |
| b. you enrolled | d. you'll enroll |
28. Your chance of getting into a good school is very dependent ... how you score on the Graduate Management Admission Test (GMAT).
- | | |
|---------|-------|
| a. of | c. on |
| b. over | d. by |
29. Pr Dupont has been teaching cellular biology ... over 12 years.
- | | |
|-------|-----------|
| a. in | c. during |
| b. on | d. for |
30. Dr Durand among others will acquaint students ... the principles of computing.
- | | |
|----------|---------|
| a. on | c. to |
| b. about | d. with |

Source: Lydie Navard, *Scientifically Yours: 400 tests d'anglais appliqués à la communication scientifique internationale*, Tec & Doc Lavoisier: Paris, 1999.

PROTOCOL**LactoScan®
Lactose Intolerance
real time PCR Kit (Rearrange this protocol correctly)**

INTENDED USE

SUMMARY

PRINCIPLE OF THE TEST

REAGENTS PROVIDED

STORAGE AND HANDLING

ASSAY PROCEDURE

WARNINGS AND PRECAUTIONS

AMPLIFICATION

1. DNA EXTRACTION
2. PREPARATION OF THE READY-TO-USE ENZYME MIX
3. Lactose-Intolerance real time PCR Protocol
4. ANALYSIS OF GENOTYPES UND INTERPRETATION OF RESULTS

A] Required material provided:

- PCR reagents
- Package insert

Required material not provided:

1. LightCycler instrument (Roche)
2. LightCycler capillaries
3. LightCycler capillary centrifuge
4. DNA extraction kit
5. Pipets (0.5µl - 1 ml) with sterile filter tips
6. Sterile Microtubes
7. table centrifuge

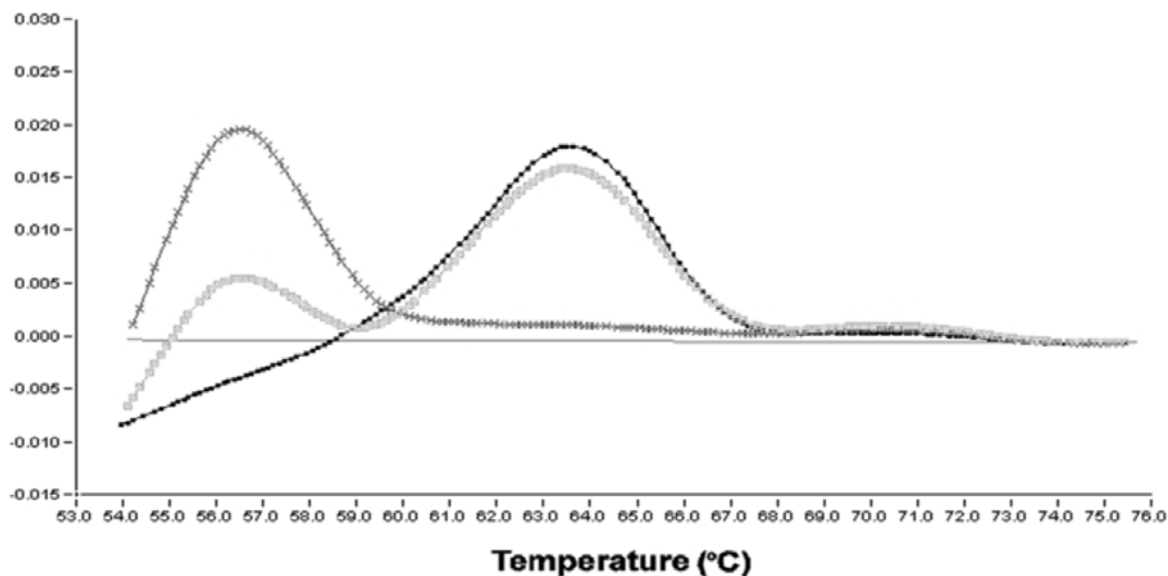
B] Please carefully read the manufacturer's instructions before starting the procedure!

The Master Mix volume for the respective number of samples and controls should be pipeted as follows:

3.1. The ready-to-use Enzyme Mix volume per reaction and sample should be multiplied with the number of samples (N) to be performed, including controls A4, A5 and A6. For reasons of unpercise pipetting, add an extra (virtual) sample. Proceed in the same manner with all additional reagents.

Mix gently (**do not vortex!**) the following reagents in a sterile vial:

ready-to-use Enzyme Mix (A1a+A1b), Primer and Probe Mix (A2), and MgCl₂ (A3). This mixture is the Master Mix. Spin down briefly in a table centrifuge.

PROTOCOL


3.2 Pipet **18µL** of the Master Mix using micropipets with sterile filter tips in each of the LightCycler capillaries. **2µL** of the extracted DNA samples, positive and negative controls (A4, A5 and A6) are then added to each of these capillaries. It is recommended to pipet the negative control first to avoid contamination. Immediately lock the capillaries to avoid contamination. Spin down briefly (in a LightCycler capillary centrifuge)

Perform the following LightCycler PCR Protocol:

95°C for 10 min.

45 Cycles:

95°C for 10 sec.

55°C for 10 sec. ramping time: 20°C/sec. -aqu. mode SINGLE

72°C for 25 sec.

95°C for 0 sec.

50°C for 5 sec.

80°C for 0 sec. ramping time: 0,1°C/sec. -aqu. mode CONT

40°C for 30 sec.

C] The LactoScan® Lactose Intolerance real time PCR Kit is a test for the detection of the T/C (-13910) polymorphism in the regulatory region of the lactase gene by real time detection in the capillary system of the LightCycler® (Roche).

D] • This assay needs to be carried out by skilled personnel!

- Clinical samples should be regarded as potentially infectious materials.
- This assay needs to be run according to GLP (Good Laboratory Practice).

E] Each kit contains enough reagents to perform 96 tests. Each kit also contains a package insert.

For real time PCR

Ref. Type of reagents Presentation Cap Color

A1a Enzyme Mix 3 vials, 4 µL each blue

A1b Enzyme Buffer (mit dNTP) 3 vials, 60 µL each blue

A2 Primer and Probe Mix 1 vial, 1.4 mL yellow

A3 MgCl₂ (25mM) 1 vial, 1.0 mL white

A4 Positive Control (wt) 1 vial, 30 µL red

PROTOCOL

A5 Positive Control (mut) 1 vial, 30 µL red

A6 Negative Control 1 vial, 200 µL green

F] Patients with lactose intolerance cannot digest milk sugar and suffer from dyspepsia, nausea and stomach ache after ingestion of milk products. Further symptoms - such as vertigo, sleep disorders, akne, or depressions - can also be triggered by lactose intolerance. In Germany, approximately 15 million people suffer from this disease. The main reason for lactose intolerance is a genetically based deficiency of the enzyme lactase, which is responsible for the disassembly of milk sugar. This widely distributed genetic disorder is a T/C polymorphism located on position -13910 in the regulatory region of the lactase gene. Persons who are homozygous for this mutation are deficient of the enzyme lactase and have a predisposition for lactose intolerance.

During infancy, the production of lactase is very high. However, it decreases with advancing age, and deficiency of the enzyme production manifests (at age of about 20 years). Due to a prominent North-South divide, the homozygous mutation is rare in Scandinavia. In Germany, the prevalence is 15-20%, whereas about 30% of the adult population in southern Europe show lactose intolerance.

G] 4.1 Perform the LightCycler® PCR. Activate the Color Compensation prior to starting the run.

4.2 The result of the quantification is shown in channel F2/F1.

4.3 The melting curve analysis should be performed with the following settings: • Digital filter: enabled
• Degrees to average: 8-9

4.4 The assessment of the measured values and the respective T_m Analysis is done at the end of the PCR with the „LightCycler Manual T_m Estimation Report“. Thereby the resulting T_m value differentiates between wildtype and mutant genotypes.

Melting curve analysis:

channel F2/F1

wildtype control 56,5°C (+/- 1°C)

mutant control 63,5 °C (+/-1°C)

negative control no peak

4.5 The result is shown in channel F2/F1 for each patients sample and can be compared directly with the wildtype and mutant positive controls. The melting temperature of the sample corresponds to the respective control (**wildtype/ not intolerant** or **mutant/ intolerant**). Samples from heterozygous persons (**wt/mut - not intolerant**) show double peak cuves resembling the curves of wildtype plus mutant positive control (see example).

4.6 Samples with ambiguous melting curves (flat curve) have to be repeated. Use the melting curve amplitudes of the positive controls as reference.

H] All reagents (**A1 to A6**) should be stored at -20°C. All reagents can be used until the expiration date printed on the labels. Avoid multiple freezing and thawing cycles of reagents (< 2). If used sporadically, prepare aliquots of the reagents. Cool all reagents during the working steps. Avoid exposure of the Primer and Probe Mix (**A2**) to light.

I] 1.1 Extraction of DNA with commercial available DNA isolation kit from samples such as whole blood or buccal swabs according to the manufacturers' instructions.

1.2 If the LightCycler PCR is not performed immediately, store extracted DNA at -20°C.

J] The PCR technology is utmost sensitive. Thus, amplification of a single molecule generates millions of identical copies. These copies may evade through aerosols and sit on surfaces.

PROTOCOL

In order to avoid contamination of samples with DNA which was previously amplified, it is important to physically strictly divide sample and reagent preparation units from sample amplification units. Pipets, vials and other working materials should not circulate among working units!

- Do not use the kit after its expiration date
- Set up (if possible) two separate working areas:
 1. Isolation of the DNA
 2. Amplification/ detection of amplification products
- Always use sterile pipet tips with filter
- Wear separate coats and gloves in each area
- Routinely decontaminate your pipets and the laboratory benches with decontaminant
- Avoid aerosols
- The LightCycler-PCR process is owned by Hoffmann-La Roche Ltd.

K] The AnDiaTec® LactoScan® Lactose Intolerance real time PCR Kit contains specific primers, probes and additional material for the detection of the T/C (-13910) polymorphism in the regulatory region of the lactase gene with the LightCycler® (Roche). The nucleotide at position -13910 (wildtype or mutant) is determined by the binding affinity of the probes to the DNA template during the melting point analysis. Clinical specimens such as whole blood and buccal swabs after DNA extraction can be used.

L] 2.1 Centrifuge one vial Enzyme Mix (A1a) and one vial Enzyme Buffer (A1b) briefly at 13000 rpm.

2.2 Transfer 60µL of Enzyme Buffer (A1b) into the Enzyme Mix (A1a).

2.3 Mix carefully by pipetting up and down (**do not vortex!**). This is the ready-to-use Enzyme Mix.

THE PRINCIPLES OF CLEAR WRITING

In the following pages, you will find some information to keep in mind when writing in English. Those principles will (hopefully) help you write clear, effective, and logical sentences and texts.

Make characters subjects and actions verbs

Compare the following sentences:

A: Researchers have identified the AIDS virus but have failed to develop a vaccine to immunize those at risk.

B: Attempts by economists at defining full employment have been met with failure.

Sentence A is clearer for two reasons:

- The characters in sentence B are not the subject. The subject is attempts but the characters are *economists*.
- The actions in sentence B are not verbs but abstract nouns (*attempts, failure*) and the verb (*have been met with*) expresses little meaning.

=> Sentence A is clearer because the characters are subjects and the actions are verbs. Also, the subjects are short, specific, and concrete.

So, when you match characters to subjects and actions to verbs in most of your sentences, readers are likely to think your prose is clear, direct, and readable.

Using that principle, sentence B could be rewritten as follows:

Economists have attempted but failed to define full employment.

It does not follow that all nominalizations are bad, but French speakers tend to use too many of them, so keep that in mind when writing in English.

Old information goes before new information

We depend on the beginning of a sentence to give us a context of what we know before we read what's new. A sentence confuses us when it opens with information that is new and unexpected. For example, in this next passage, the subject of the second sentence gives us new and complex information (**boldfaced**), before we read more familiar information that we recall from the previous sentence (underlined):

*We must decide whether to improve education in the sciences alone or to raise the level of education across the whole curriculum. **The weight given to industrial competitiveness as opposed to the value we attach to the liberal arts** will determine our decision.*

We could read the second sentence more easily if it were passive, because the passive would put the short, familiar information first and the newer, more complex information last:

We must decide whether to improve education in the sciences alone or to raise the level of education across the whole curriculum. Our decision will be determined by the weight we attach to industrial competitiveness as opposed to the value we attach to the liberal arts.

So remember that sentences are cohesive when the last few words of one set up information that appears in the first few words of the next. That is what gives us our experience of flow. And in fact, that's one of the biggest reasons the passive is in the language: to let us arrange sentences so that they flow from one to the next easily.

In every sentence that you write, you have to balance principles that make individual sentences clear and principles that make a passage cohesive. But in that tradeoff, give priority to helping readers create a sense of cohesive flow. Fortunately, the principle of old before new cooperates with the principle of characters as subjects. Once you mention your main characters, readers take them as familiar information. So when characters are up front, so is familiar information.

Pay attention to the beginning of your sentences

Readers are more likely to judge as clear a unit of writing that opens with a short segment that they can easily grasp and that frames the longer and more complex segment that follows.

There are two rules of thumb about beginning a sentence: (1) Get to the subject quickly and (2) get to the verb and object quickly.

THE PRINCIPLES OF CLEAR WRITING

- Get to the subject quickly:

Avoid beginning more than a few sentences with long introductory phrases and clauses. When you find a sentence with a long introductory clause, try moving it to the end. If it doesn't fit there, try turning it into a sentence of its own.

Because of the growing use of computers to store and process corporate information, industrial spying is increasing rapidly.

=> Industrial spying is increasing rapidly because of the growing use of computers to store and process corporate information.

It is, however, a fact of English style that clauses beginning with *if*, *when*, and *although* tend to appear before main clauses rather than after. So if you cannot avoid opening with a subordinate clause, keep it short.

- Get to the verb and object quickly:

- Avoid long, abstract subjects: revise long subjects into short ones.

The possibility that some termini have a base composition different from that of DNA simply because they are the nearest neighbors of termini specifically recognized by the enzymes can be checked by comparing the experimental results with those expected from the nearest neighbor data.

=> If we compare the experimental results with those expected from the nearest neighbor data, we can check the possibility that some termini have a base composition different from that of DNA simply because they are the nearest neighbors of termini specifically recognized by the enzymes.

- Avoid interrupting the subject-verb connection: move the interruption to the beginning or end of its sentence, depending on whether it connects more closely to what precedes or follows it. However, short interruptions (for instance, one-word adverbs) are not a problem.

The continued and unabated emission of carbon dioxide gas into the atmosphere, unless there is a marked reduction, will eventually result in serious changes in the climate of the world as we know it today.

=> If we do not reduce our emissions of carbon dioxide, the current climate will be seriously changed//affected. OR Unless we reduce our emissions of carbon dioxide, the current climate will be seriously changed.

- Avoid interrupting the verb-object connection: Move the interrupting element to the beginning or end of its sentence, depending on what comes next.

The Institute launched, in partnership with the University of Lisbon, a new Ecodynamics Award.

=> The Institute launched a new Ecodynamics Award in partnership with the University of Lisbon.

Pay attention to the end of your sentences

The first few words of a sentence are especially important because they state its topic, what the sentence is about or comments on. The last few words of a sentence are also particularly important because they receive special emphasis. This is what we will call the sentence stress. How you manage the emphasis in that stress position helps establish the voice readers hear in your prose. If you end a sentence on words that have little meaning, your sentence will seem to end weakly.

Three tactical revisions:

- Trim the end:

Sociobiologists claim that our genes control our social behavior in the way we act in situations we are in every day.

THE PRINCIPLES OF CLEAR WRITING

=> *Sociobiologists claim that our genes control our social behavior.*

- Shift peripheral ideas to the left:

The data offered to prove ESP are weak, for the most part.

=> *For the most part, the data offered to prove ESP are weak.*

Job opportunities in computer programming are getting scarcer, it must be remembered.

=> *It must be remembered that job opportunities in computer programming are getting scarcer.*

- Shift new information to the right:

Questions about the ethics of withdrawing intravenous feeding are more difficult [than something just mentioned].

=> *More difficult [than something just mentioned] are questions about the ethics of withdrawing intravenous feeding.*

Sources: Joseph M. Williams and Joseph Bizup, *Style: Lessons in Clarity and Grace*, Pearson: Boston, 2013.

<https://cgi.duke.edu/web/sciwriting/index.php?action=lesson3#examples>

<https://owl.english.purdue.edu/owl/resource/600/01/>