English: Semester 6 – L3 Sciences de la vie – TD5

A. Conditionals

Scientists use **conditionals** to **describe facts, predict results, and discuss hypotheses**:

• **Zero conditionals:** Scientific facts (*If plants lack sunlight, they die.*)

If + present simple,	**present simple**
50% possibility	100% certainty

• **First conditionals:** Likely outcomes (*If we add fertilizer, plants will grow faster.*)

If + present simple,	**will + verb / can + verb / must + verb / imperative form**
50% possibility	100% certainty

• **Second conditionals:** Hypothetical ideas (*If humans had gills, we would breathe underwater.*)

If + past simple,	**would + verb / could + verb**
0-5% possibility	100% certainty

• **Third conditionals:** Alternative past outcomes (*If vaccines had been developed earlier, fewer people would have died.*)

If + past perfect,	**would have + past participle / could have + past participle**
0% possibility	100% certainty

Mastering conditionals helps in **hypothesis building and scientific discussions**.

1. Matching Exercise (Zero & First Conditionals)

1. If a cell does not get enough oxygen,	☀️	❄️	a) it will affect food chain stability.
2. If a virus mutates rapidly,	☀️	❄️	b) it boils.
3. If we heat water to 100°C,	☀️	❄️	c) some species may develop resistance.
4. If researchers test the new vaccine,	☀️	❄️	d) they will analyze the immune response.
5. If the pH of a solution decreases,	☀️	❄️	e) it cannot produce enough energy.
6. If the ecosystem loses its top predator,	☀️	❄️	f) it becomes more acidic.

2. **Complete the Sentence (First & Second Conditionals)**

Fill in the blanks with an appropriate verb in the correct form.

a. If we (increase) _____ CO_2 levels in the atmosphere, global temperatures (rise) _____.

b. If marine animals (adapt) _____ to plastic pollution, they (survive) _____ in polluted waters.

c. If photosynthesis (stop) _____, all plants (die) _____.

d. If we (find) _____ a way to regenerate neurons, we (cure) _____ many brain diseases.

e. If the rainforest (disappear) _____, global oxygen levels (drop) _____.

3. **Experiment Prediction (First & Second Conditionals): Pair work**

In pairs, **choose a simple experiment** and write 4 conditional sentences predicting possible results.

_____

_____

_____

_____

4. **What Would Happen? (Second Conditional for Hypothetical Science)**

In pair, discuss or write responses to **"What if"** questions using **second conditionals**.

a. What would happen if humans had chlorophyll in their skin?

_____

b. How would ecosystems change if insects became extinct?

_____

c. If we discovered alien bacteria on Mars, what could we learn?

_____

d. If dinosaurs were still alive, how would modern life be different?

_____

e. What would the world look like if all ice on Earth melted?

_____

5. **Science in History (Third Conditional for Missed Scientific Discoveries)**

Rewrite the following **historical facts** as **third conditional** sentences.
Example:
Fact: Alexander Fleming discovered penicillin in 1928, which led to modern antibiotics.
➜ *If Fleming had not discovered penicillin, bacterial infections would have been deadly for longer.*

a. Fact: Scientists didn't understand the role of DNA until the 20th century.

_____

_____

_____

b. Fact: Early scientists didn't believe in germs, leading to high infection rates in hospitals.

_____

_____

_____

c. Fact: The discovery of insulin in 1921 allowed millions of diabetics to live longer.

_____

_____

_____

d. Fact: The human genome was sequenced in 2007, advancing genetic medicine.

_____

_____

_____

B. Reading comprehension: What If Cows Didn't Exist? by Jeff Harder

You'd have to go back before the dawn of recorded history to find a time when cows weren't nibbling on grass and swatting flies with their tails. Today, roughly 10,500 years after they were first domesticated from their wild oxen forebears, Earth's cows number 1.4 billion, a commodity prized for protein-rich meat and dairy [source: FAO]. So what would happen if they all vanished without a trace or even a moo?

For starters, you'd have to do without milk in your coffee or burgers on the grill — which could take some getting used to here in the U.S., since the average citizen eats more than 50 pounds of beef each year [source: USDA]. But no more cows wouldn't be the worst thing for your health if beef is always on your dinner plate: Eating a red meat heavy diet ha long been linked with Type 2 diabetes, heart disease and certain cancers, while substituting it with fish, poultry and other protein alternatives can improve health outcomes [source: NIH].

If cows didn't exist, it wouldn't necessarily be terrible for the environment either. Cows are a major contributor of methane, which accounts for as much as 10 percent of total greenhouse gas emissions in the United States and can have as much as 25 times the impact of carbon dioxide when it comes to climate change [source: EPA]. Cows also use a lot of resources that could be saved or redirected elsewhere: One quarter-pound hamburger requires about 6.7 pounds of feed, 52.8 gallons of water, 74.5 feet of square of land and 1,036 BTUs of energy to produce [source: Barclay].

However, a big bovine-shaped void isn't a panacea for the planet. While no cows would certainly mean fewer methane emissions, the energy sector remains the biggest emitter of methane in the U.S. [source: U.S. Energy Information Administration]. Shifting the resources that cows use would hardly put a dent in world hunger. According to the International Food Policy Research Institute, even if the largest and wealthiest countries slashed their meat consumption in half, the number of malnourished children around the world would only decrease by 2 percent [source: Weeks]. Valuable ecosystems wouldn't need to be cleared for pastureland, but since cows often graze in places unsuited for crop production, it wouldn't free up a ton of new acreage for different crops. It's also unclear what the economic fallout would be: In the United States, beef is an $88 billion industry [source: USDA].

And if cows didn't exist, it certainly wouldn't turn the world into a planet of vegetarians: In 2013, the average American ate almost twice as much poultry as beef [source: USDA].

(source: howstuffworks.com)

Answer the following questions:

1. When were cows first domesticated?

_____

2. How many cows exist on Earth today?

_____

3. How much beef does the average American eat per year?

_____

4. What health risks are associated with a red meat-heavy diet?

_____

5. What alternative protein sources could improve health outcomes?

_____

6. Why eliminating cows wouldn't completely solve climate change?

_____

7. Would eliminating cows significantly reduce world hunger?

_____

8. What is a "moo" (l. 5)?

_____

C. Listening comprehension: Why We Still Haven't Cloned Humans, It's Not Just Ethics

1. Find the equivalents of the following words while listening to the video.

des embryons	mais on peut dire/soutenir que
des obstacles	des inconvénients
retenir quelqu'un	théoriquement
inefficace	une fausse couche
des mères-porteuses	causé, provoqué
des anomalies	tomber à l'eau, mourir (sens figuré)
des scientifiques	une réplique
retirer	des cellules souches

2. **What is cloning?**

_____

_____

3. **Finished early? Learn some more vocabulary on cloning and genetics:**

Q Q K K Y Q G D S C I T S I R E T C A R A H C X
H I C Y E A E Y I D U B L J P O R G A N I S M S
I U P C Y V N R Y M Q J A D M N D I A Z V Q S U
L H G M N H E H P Z S N U N K T K B B B E J T R
L S E S B U T G O Q G A Y A O M B T J T B D U G
I E N Q D M I K N S F K L O M K U P B V H H E N
N L O G E A C G S I J E A P O N B X A M Y Q C I
G E M E G N E Z M X N K I R U S I Y Q A B R B D
J C E N Q G N T R M S O M X Y B B I L C R B Q E
S T Q E W E G T F E C E L K K I I P L C I F W E
M I D T Y N I T R X U Z G C J Z C D Z L D S E R
L V P I D O N R A X H S N G R J W R R H I A K B
P E U C N M E A F S E M O S O M O R H C Z Z M N
N B P S X E E I A R B M B K G G W M M N A P T I
G R V F Y P R T C N N N Q E G M B E O L T S H A
N E U U X R I O O G E N E T H E R A P Y I G A X
U E E K P O N J F Q F B P Z L Q H E Y V O K P B
M D G D F J G U A B A A V E T Y Q Q V K N A X U
M I J Z C E W Q L C Y C F A O X W L W N N L Y Z
S N M N K C N H T W C U I G J E L F K B K L K Z
K G I I I T R E R T K H U W Z K R C C V G E L P
P R T C Y G R O U M H S E R S C T Q J C K L N F
Q Z R Q F I W U R V B A U C Z V G U N C A E V W
R A C K A J T L A L V A S L A M I N A G I S L V

Human Genome Project
characteristics
chromosome
bacteria
animals
plasmid
Yogus
genetic engineering
hybridization
inbreeding
genetics
cloning
genome
DNA
selective breeding
gene therapy
organisms
alleles
Hilling
trait