TRAVAIL de COMPREHENSION ECRITE , préalable au « speed-talking »

A. FERTILITY ?	B. BONES and MUSCLES ?
	

-Chaque élève est responsable d'un sujet (A, B, C ou D), et doit lire pour comprendre son article source pendant 20minutes environ (articles source: MainRisks_Articles_Sources)
- A l'issue des 20 minutes, chaque élève inscrit dans sa 'case' du tableau, les informations et conclusions issues de la lecture de son article

C. SKIN ?	D. VISION?
	

SPEED TALKING

-1ère phase du tour n°1 : un élève A explique à l'oral uniquement les informations et conclusions de son article source; l'élève B fait la même chose pour l'élève A. Aucun écrit n'est réalisé pendant cette première phase du tour n°1, pour ne mettre en jeu que l'expression+la compréhension orales des élèves.
-2ème phase du tour n°1 : les élèves retranscrivent à l'écrit en 2min ce qu'ils ont compris
Exemple filmé par voir vidéo : MontageSpeedTalking.mp4 dans
« Réalisation d'un entretien d'embauche à un poste d'astronaute NASA »

Tour n°1 : A – B et C – D

1ère phase : 5 min échange à l'oral
2ème phase: 2 min prise de notes (aucune lecture, aucun échange oral)

Tour n° 2: A – C et B – D

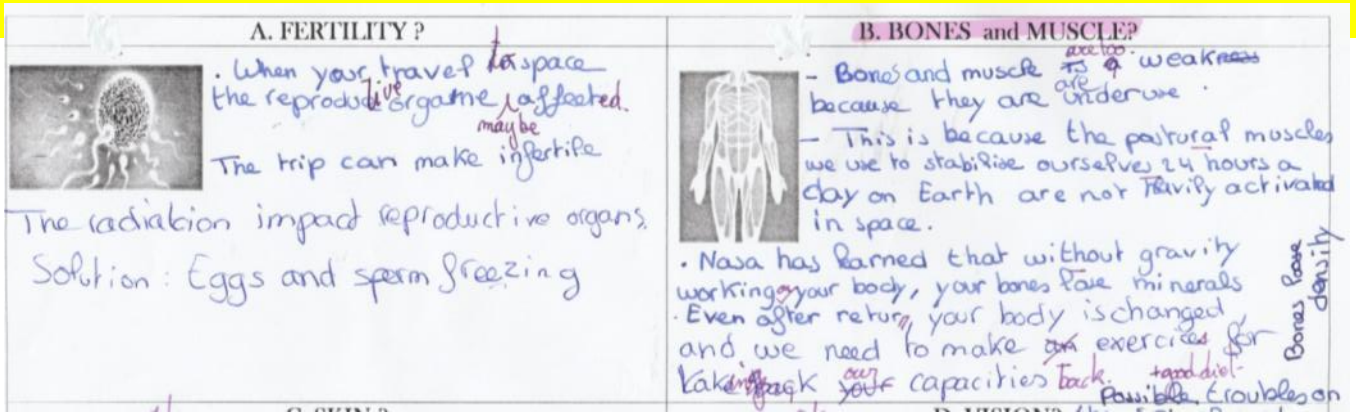
1ère phase : 5 min échange à l'oral
2ème phase: 2 min prise de notes (aucune lecture, aucun échange oral)

Tour n° 3 : A – D et C – B

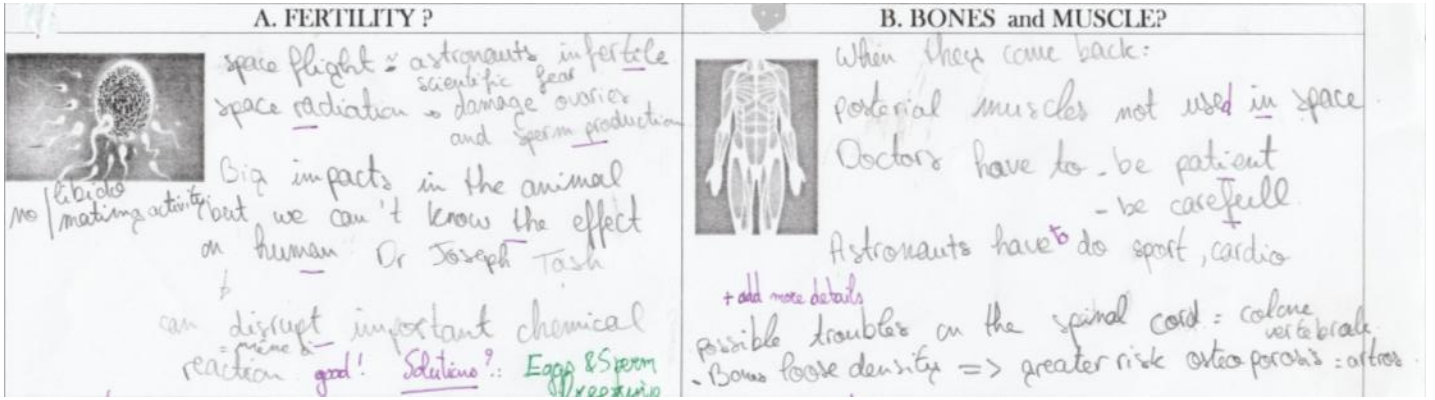
1ère phase : 5 min échange à l'oral
2ème phase: 2 min prise de notes (aucune lecture, aucun échange oral)

-<u>Exemples de productions variées d'élèves qui étaient en charge de l'article B, C ou D :</u> certains élèves n'indiquent que les conclusions et non les faits, certains élèves indiquent des faits erronés et des conclusions, certains élèves fournissent des faits précis et des conclusions précises. Une correction interactive est réalisée au tableau après remise des copies à chaque élève. On lit d'ailleurs ci-dessous certains ajouts réalisés lors de la correction.

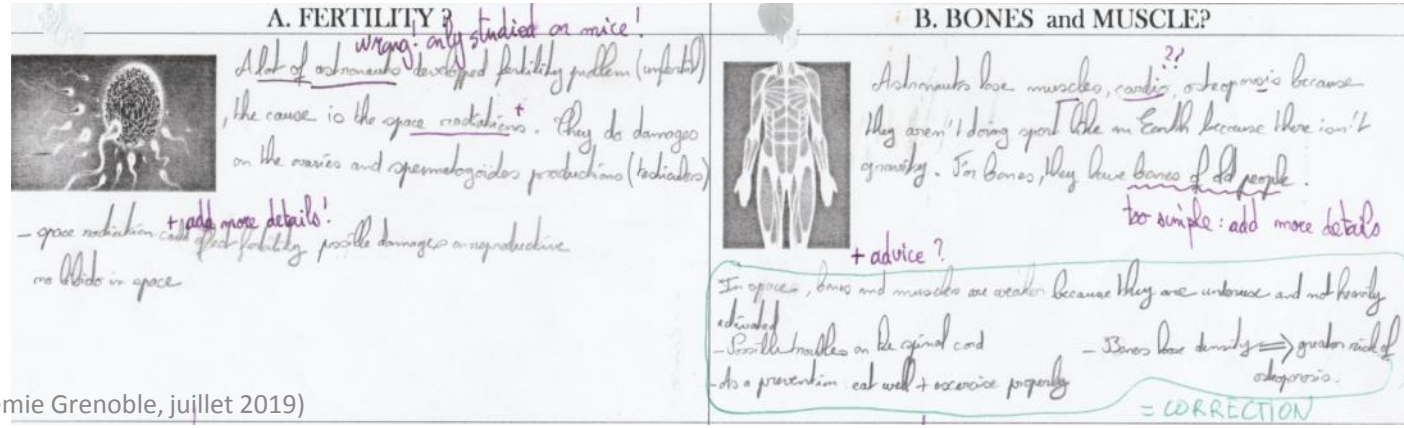
Production d'élève B:



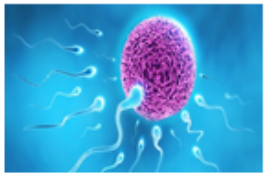
Production d'élève C:



Production d'élève D:



A. Space may make astronauts infertile, scientists fear



Adapted from The Telegraph, 26 Oct 2014

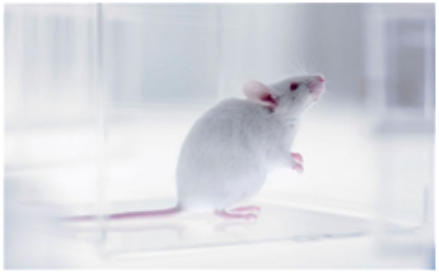
Space flight may make astronauts infertile, scientists fear, and could hinder(~slow down) plans for a long-term mission to Mars.

Animal experiments have shown that both male and female reproductive organs are affected by zero gravity.

It is also likely that space radiation is damaging the ovaries of female astronauts and the sperm production of men.

Although most astronauts have already had their families by the time they go into space, NASA is so concerned that it now offers egg and sperm freezing. The US space agency is currently studying the mating activities of a group of mice on board the International Space Station (ISS) to determine how serious the problem might be.

Previous Russian studies have shown that when male and female rats were sent into space in 1979 they did not mate at all. Another study found that when male rodents were placed in simulated zero gravity conditions they could no longer produce sperm.



Dr Joseph Tash, told a conference in Hawaii that there was concern that astronauts could experience the same effects. "We don't really have the human data to really determine whether what we are seeing in the animals is translatable to humans. But we are seeing big impacts in the animals," he said.

"It is a potential issue that needs to be looked at. Certainly the flight surgeons down at Johnson Space Centre suggest that the male astronauts cryopreserve semen and some female astronauts have elected to preserve eggs just in case it is a factor."

Dr Tash believes that space flight can disrupt important chemical reactions which must happen into the body to allow reproduction.

B. Bones and muscle weakness caused by underuse

Adapted from https://www.nasa.gov/hrp/bodyinspace and from http://blogs.esa.int/alexander-gerst/2018/12/14/back-to-earth-a-medical-perspective/

Though much of this clears within 2-3 days of landing, members of an astronaut's medical team are on high alert in those early stages. They remain close behind or beside an astronaut at all times to prevent falls, as the astronaut readapts to Earth's gravitational pull.

Medical considerations include bone and muscle weakness caused by underuse. Doctor Sergi Vaquer says exercise protocols on Station mean most astronauts keep their muscle capacity within the desired range, but there are some risks in regard to spinal (moelle épinière) injuries. This is because the postural muscles we use to stabilise ourselves 24 hours a day on Earth are not as heavily activated in space.

NASA has learned that without gravity working on your body, your bones lose minerals, with density dropping at over 1% per month. By comparison, the rate of bone loss for elderly men and women on Earth is from 1% to 1.5% per year.
Even after returning to Earth, your bone loss might not be corrected by rehabilitation, so you could be at greater risk of osteoporosis-related fractures later in life.

If you don't exercise and eat properly, you will lose muscle strength, endurance, and experience cardiovascular deconditioning since it does not take effort to float through space

Flight doctor SergiVaquer performs a post-flight check on ESA astronaut Paolo Nespoli.