Pictou County Forest School - Grade 8 Lesson Plans
Healthy Cells, Healthy Systems

Activity: Case study: Clear Cut bio-blitz (suggested time 90+ minutes)
Overall Curriculum Outcome: Learners will evaluate ways to maintain and factors that disrupt cell and system health.

Specific Curriculum connections:
Cell/system disorders
- How do cells/systems "malfunction"?
- How can you determine the difference between a disorder and a disruption?
- How do health professionals use case studies to learn about cell and system disorders?

Maintaining Health
- How can we maintain cell and system health?
- How do Mi'kmaw perspectives enrich the understanding of maintaining health?

Materials:
Reading: "The Jungle of the Gut Microbiome"
White boards and markers
Big white board
Ropes for bio-blitz

Activity:
1. Take students to hammock village or stay at base camp to observe the Fiona-induced clear cuts that have occurred.
    - Perform a 'silent sit and see' activity where students have to silently sit and observe, first, the intact section of a mature hemlock forest followed by the same activity in a clear cut section. Students can record observations on their whiteboards. Group discussion to follow (focussing on the 5 senses; emotions elicited; energy etc). Teacher can record findings on big whiteboard.

Old Growth Hemlock Forest	Clear cut

2. Read the article "The Jungle of the Gut" and make connections between our gut health and forest health.
3. Take students to a site where they can perform a bio-blitz in both a forest site and a clear cut site. Students record findings on their white boards. Group discussions to follow.

Ask students:
- Are clear cuts a disorder or a disruption?
- How are forests similar to our microbiome? How are they both affected by outside stimuli?

The Jungle of The Gut Microbiome

04/05/2020 **Healthy Eating**, **Help for Parents**, **Uncategorized**

By Vanessa El Hosri

Gut's up? Feeling out of the loop with all this talk about the gut microbiome? Here is the ultimate guide which we'll hope will answer all of your questions.
So, you might be wondering what is the gut microbiome anyway? Well, let's start with the basics.
Microbes are tiny living microorganisms. Examples are bacteria, fungi and viruses. These tiny things are everywhere but we cannot see them. They are all over your phone, in your water bottle and even on your hands before and after you wash them!
There are trillions and trillions of microbes living all over your body. They are all up in your nose and in your mouth but they love your tummy the most.
So, when we are talking about the gut microbiome, we are referring to all those tiny microbes in your gut and their genes combined together. Picture it like a jungle- instead of trees, insects and animals, we have bacteria, viruses and fungi. Just like how the trees are needed for oxygen and insects to keep the soil healthy, we need many different types of microbes to carry out different jobs.
But be aware that there are good and bad microbes. In a healthy person, they live together with no problems but when there are more bad than good, that's when gut feelings aren't so welcome.
Okay now that we know what the gut microbiome is- why is it so important? Why is everyone talking about it?

Pictou County Forest School - Grade 8 Lesson Plans
Healthy Cells, Healthy Systems

The gut microbiome is often thought of as an extra body part because it has many important roles. It controls blood sugar levels and cholesterol, fights off infections, boosts immune systems and improves digestion and absorption of vitamins. It also influences weights, moods and appetites. So trust your gut!

We each have our own unique gut. Environment, lifestyles, genetics and diet all play a part in making up our gut microbiomes. But the most important of all is the diet. Diet influences the gut microbiome almost five times more than genetics!

So now you might be wondering what kind of diet? Well, it is simpler than you think. There are three ways to keep the gut microbiome healthy proven by scientific research.

Have a diverse diet: diverse diets = diverse gut microbiomes = HEALTHIER GUTS. So, mix it up and have a variety of healthy foods and your gut will be happy.

Eat high-quality foods: healthy diets have been linked with good bacteria and diverse guts while unhealthy diets have been linked with bad bacteria and less diverse guts.

Plenty of fibre: fibre is broken down into short-chain fatty acids. Short-chain fatty acids have many health benefits. They keep the gut barrier healthy, stopping nasties from coming in and boost the immune system. They also limit the growth of bad bacteria which lowers the risk of chronic disease. Fibre-rich foods include fruits and vegetables, legumes, beans, nuts, seeds and whole grains.

Okay, you know what the gut microbiome is, why it is important and how to keep it healthy. So now where do probiotics and prebiotics fit in?

Probiotics are the good guys. Some examples of food which contain good bacteria are yoghurt, kefir and kombucha.

Prebiotics are the fuel for the good bacteria. Prebiotics are fibre rich foods and the types of carbohydrates that cannot be digested. These types of foods pass through your intestines undigested so your good bacteria can feed off them. Examples include legumes, onion, garlic, asparagus, nuts, seeds, whole grains and skins of fruits and vegetables.

Now keep in mind that this is still the early stages of research. We don’t know what a healthy gut microbiome looks like exactly, we don’t know what types and amounts of microbes are beneficial from person to person. But we know a thing or two.

So, next time pay attention to your gut feelings and do not overcomplicate it. It is all about diversity, quality and fibre.

https://healthy-kids.com.au/the-jungle-of-the-gut-microbiome/