The amazing ways plants defend themselves

Task1 Before watching the lecture match the English words with their Polish equivalents.

aphid -	haczyk
caterpillar -	pokrzywa
grasshopper –	osa
rhubarb -	szkodnik
pest –	rabarbar
bed bug –	cierń
nettle -	gąsienica
wasp –	konik polny
thorn –	pluskwa domowa
hook -	mszyca

Task 2 Listen to the TED-Ed lecture *The amazing ways plants defend themselves* by Valentin Hammoudi and choose the right answer a,b,c or d.

https://www.youtube.com/watch?v=Hja0SLs2kus

1. Plants are attacked :
   a/ only by big herbivores
   b/ only by small herbivores
   c/ only by microorganisms
   d/ all of the mentioned organisms

2. Bark lignin is impermeable which means:
   a/ pathogens can get through it
   b/ pathogens cannot get through it
   c/ pathogens are killed by it
   d/ pathogens are devoured by it

3. Trichomes are little hair-like structures that:
   a/ regulate plants' temperatures
   b/ trap small pests and produce chemical irritant molecules
   c/ cause tiny wounds inside animals' mouths because of their needle-shape
   d/ sense air vibrations that indicate the presence of insects

4. Raphides produced by rhubarb and spinach are structures that:
   a/ regulate plants' temperatures
   b/ trap small pests and produce chemical irritant molecules
   c/ cause tiny wounds inside animals' mouths because of their needle-shape
   d/ sense air vibrations that indicate the presence of insects

5. One of the defense strategies that mimosa plants use against herbivores is:
   a/ producing fleshy yellow flowers
   b/ germinating very fast

c/ shriveling their leaves
d/ staying underground

6. The immune systems of plants rely on:
   a/ the capacity of each cell to recognize and defend against attackers
   b/ specialized cells like in mammals
   c/ antibodies that are stored in each cell
   d/ their capacity to regulate their temperature to restrict microbe growth

7. Leaves of most plants are protected against bacteria and fungi by:
   a/ a light-reflecting cuticule
   b/ a sticky cuticule
   c/ a smelly cuticule
   d/ a waxy cuticule

8. When microbes are devouring one section of a plant, cells can self-destruct to:
   a/ restrict the spread of the microbes
   b/ decrease the photosynthesis activity
   c/ attract natural predators
   d/ tell other surrounding plants that they are attacked

Task 3 In the lecture you hear the following phrases, identify them in the text and write them down.

wysysać sok – s_____ out j_____

środek odstraszający owady – i_____ r_____

obfite składniki odżywcze – p_____ n_____

potencjalny drapieżca – w_____ - _____ p_____

zniechęcać roślinożerców – d_____ h_____

spowodować stan zapalny – c_____ i_____

skurczone liście- s_____ l_____

manewry obronne – d_____ m_____

układ odpornościowy – i_____ s_____

zwiększyć produkcję – r_____ up p_____

sojusze międzygatunkowe – c_____ - _____ a_____

składać jaja – l_____ e_____

Task 4 Chemical Defenses – complete the text with the following words.

deadly / entry / growth / hallucinations / lethargy / bitterness / breached / releases

A plant's exterior protection can be compromised by mechanical damage, which may provide an [1 _____] point for pathogens. If the first line of defense is [2 _____], the plant must resort to a different set of defense mechanisms, such as toxins and enzymes. Secondary metabolites are compounds that are not directly derived from photosynthesis and are not necessary for respiration or plant [3 _____] and development.

Many metabolites are toxic and can even be [4 _____] to animals that ingest them. Some metabolites are alkaloids, which discourage predators with noxious odors (such as the volatile oils of mint and sage) or repellent tastes (like the [5 _____] of quinine). Other alkaloids affect herbivores by causing either excessive stimulation (caffeine is one example) or the [6_____] associated with opioids. Some compounds become toxic after ingestion; for instance, glycol cyanide in the cassava root [7_____] cyanide only upon ingestion by the herbivore. Foxgloves produce several deadly chemicals, namely cardiac and steroidal glycosides. Ingestion can cause nausea, vomiting, [8_____], convulsions, or death.