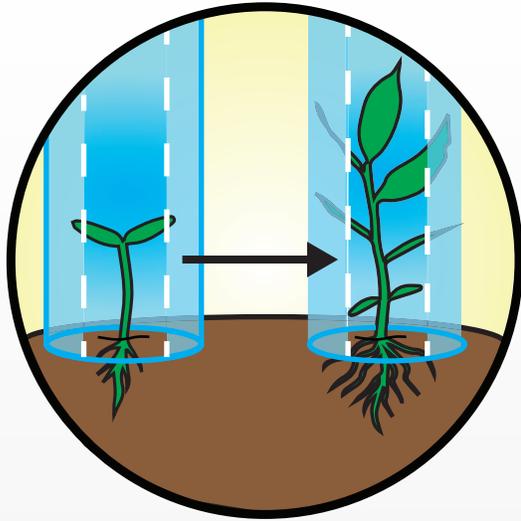
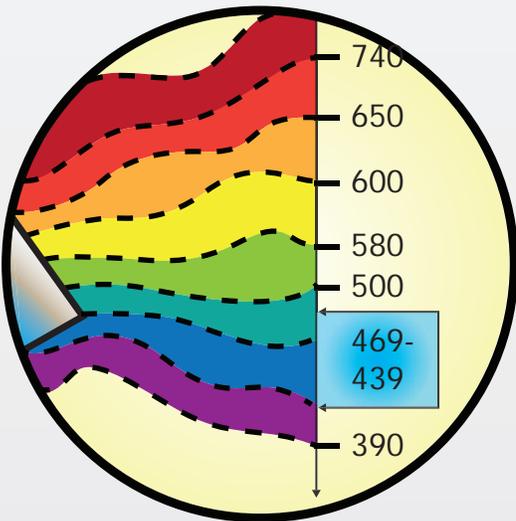


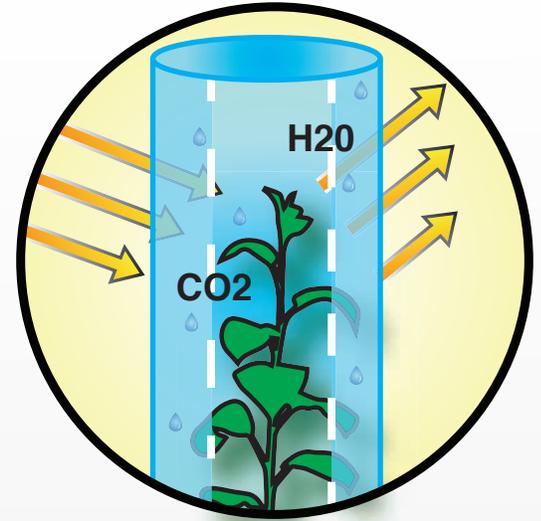
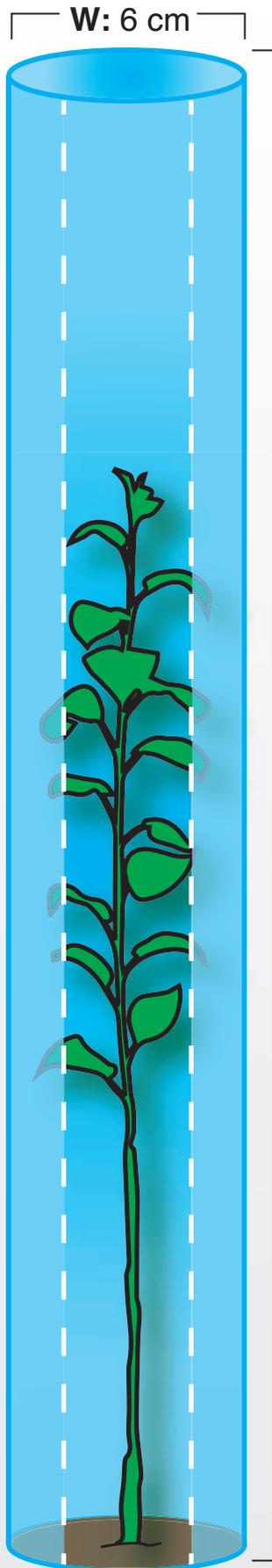
Tree Planting Project Using Blue-X[®] Tree Guards



The effect of blue light on plants is directly related to chlorophyll production. Plants that receive plenty of blue light will have strong, healthy stems and leaves.

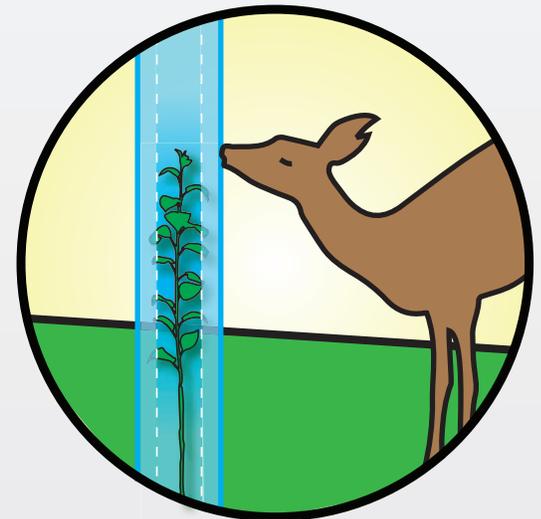


Chlorophyll absorption peaks at 439nm and 469nm. The blue spectrum is the most efficiently absorbed spectrum, promoting mainly vegetative growth.



The Blue-X[®] tree guard is designed to create a "greenhouse" type environment by increasing air temperature, humidity, and carbon dioxide levels, while also conserving moisture around the seedlings.

H: 137 cm



The Blue-X[®] tree guards also help to prevent deer and other animals such as chipmunks, groundhogs, and gophers from browsing or digging up young seedlings.



How The Blue-X[®] Tree Guards Work

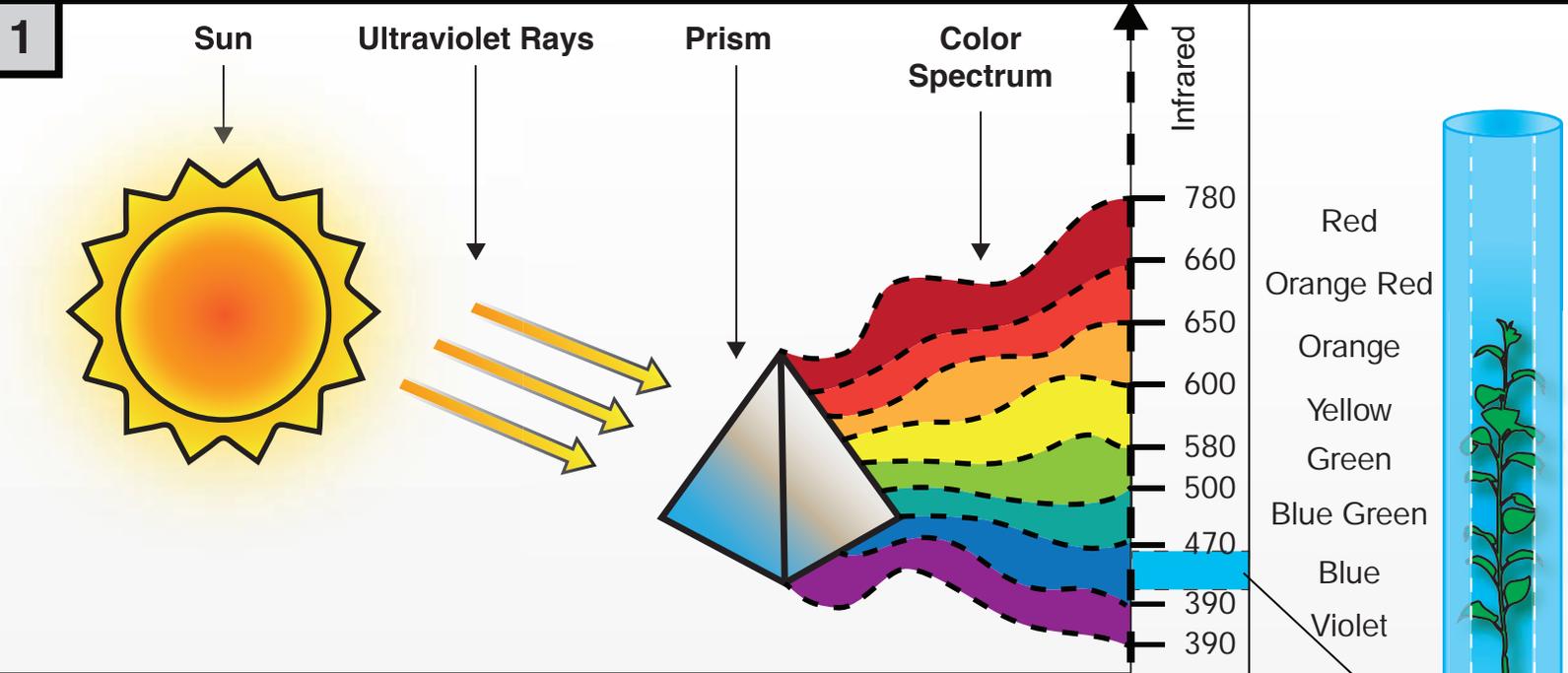


Illustration 1 shows white light passing through a prism. The Sun's light is broken up into a range of wavelengths from the 390 nm of violet to the 780 nm of red. This represents all the light potentially available to plants. The blue light helps encourage vegetative leaf growth—chlorophyll absorption peaks at 439 nm and 469 nm. The blue spectrum is the most efficiently absorbed, promoting mainly vegetative growth.

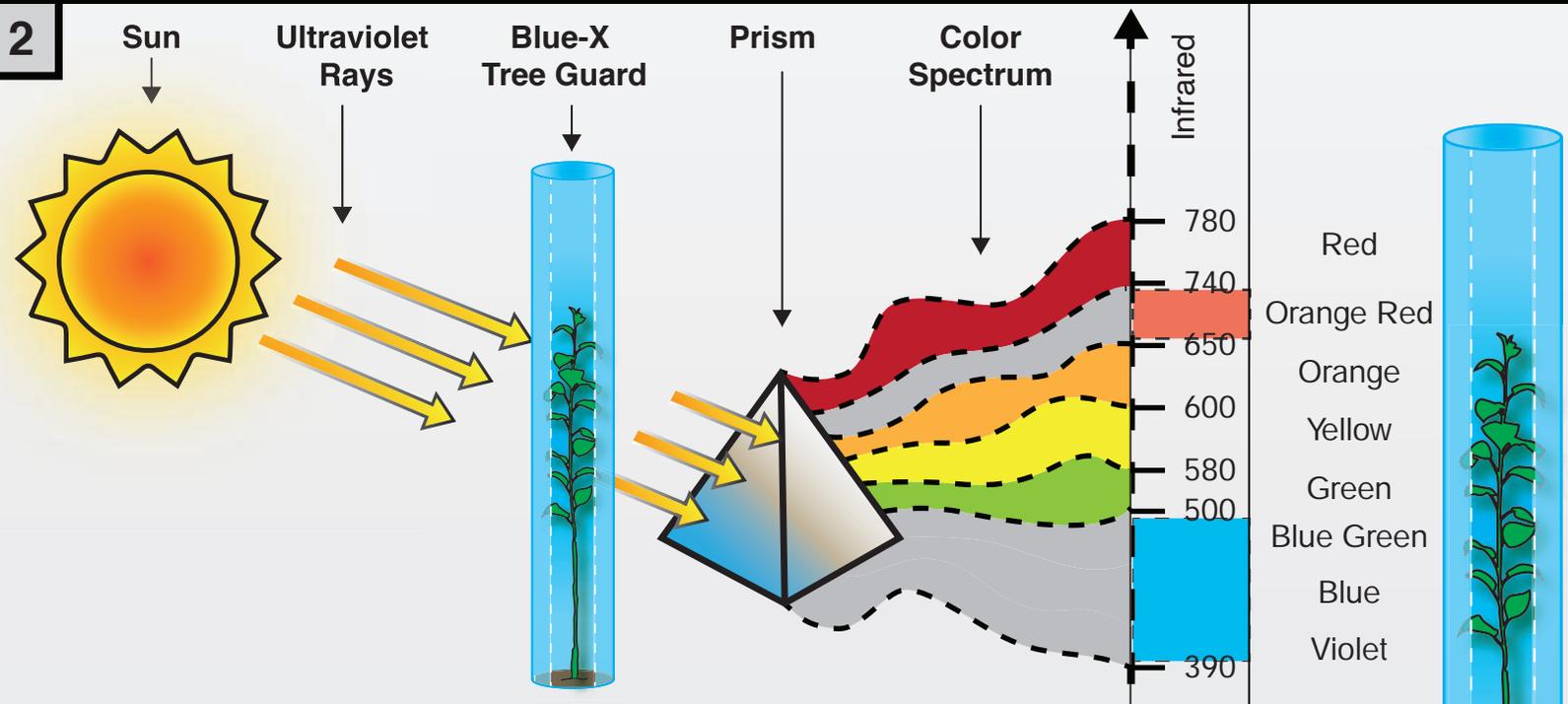


Illustration 2 shows sunlight passing through a Blue-X[®] tree guard placed in front of the prism. Behind the prism, dark bands in the spectrum are revealed between 390 and 500 nm and between 650 and 740 nm, indicating that chlorophyll has absorbed the light of these wavelengths. Blue-X[®] takes advantage of this phenomenon by providing a higher ratio of blue light along with the right blend of red and far-red to accelerate early growth.

Effects of UV Light on Plant Growth

Wavelength (nm)	Effects on Plant Growth	
UV (ultraviolet)	280	Significantly reduces quantum yield and the rate of photosynthesis.
	315 - 400	Promotes pigmentation thickens plant leaves and may be used to prevent harmful insects.
Visible Spectrum	440 - 470	Chlorophyll absorption peaks at 439 nm and 469 nm. The blue spectrum is the most efficiently absorbed spectrum promoting mainly vegetative growth.
	510	Quantum absorption in the green spectrum. Little intake is the yellow spectrum.
	610	No chlorophyll benefit. It is efficiently absorbed by algae phycoerythrin and phycocyanin receptors.
	640 - 660	Chlorophyll absorption peaks at 642 nm and 667 nm. 660 nm is the most vital wavelength for flowering, speeding up seed germination, and flowering.
	740	Emerson Enhancement Effect- quantum the yield of red light and far-red light, when shone simultaneously on a plant, increases the rate of photosynthesis.
Infrared	1000 - 1400	No plant activity detected at this wavelength. Heat generated.