- Why Do Leaves Change Color -

In Japan,/ the **transition** of leaves / through the seasons/ is a **remarkable spectacle**.// In early spring,/ leaves **emerge** fresh and green,/ and by summer,/ they reach their most **vibrant** green.// As autumn approaches, however,/ a **stunning transformation** occurs / as leaves shift from green / to a brilliant **palette** of yellow, orange, red, and purple.// But why do leaves change color?//

The key to this change lies in chlorophyll,/ the green **pigment** in the leaves.// Chlorophyll is crucial for **photosynthesis**,/ the process by which trees convert sunlight into food.// During the spring and summer,/ the **abundance** of chlorophyll helps trees produce energy.// As the days shorten and temperatures drop in the fall,/ chlorophyll production slows down and eventually stops.//

This **reduction** in chlorophyll allows other pigments to become visible.// Carotenoids, for example,/ produce the yellow and orange **hues**,/ while anthocyanins create the reds and purples.// These pigments help the tree / manage its **resources** more efficiently / and depending on the species,/ may also play a role / in the attraction of **pollinators** or seed **dispersers**.//

Beyond its visual beauty,/ the breakdown of chlorophyll plays / a vital role in the tree's survival.// By **ceasing** chlorophyll production,/ the tree is able to **reclaim** valuable **nutrients** / from the leaves before they fall.// This process helps the tree **conserve** resources / and prepare for the **harsh** conditions of winter.// Ultimately, the brilliant colors are not just a feast for the eyes,/ but a sign of nature's **intricate** processes in action.//

日本では/ 葉の変化は/ 季節を通じた/ 見事な光景です// 春の初めに/ 葉は新鮮で緑色に芽吹き/ そして夏には/ 最も鮮やかな緑色に達します//
しかし、秋が近づくと/ 驚くべき変化が起こります/ 葉は緑から変化します/ 黄色、オレンジ、赤、 紫の鮮やかな色合いに// しかし、なぜ葉は色を変えるのでしょうか？//

この変化の鍵は、クロロフィルにあります/ 葉の緑の色素である// クロロフィルは光合成において重要です/ 樹木が太陽光を食物に変えるプロセスです// 春と夏の間/ クロロフィルの豊富さがが樹木がエネルギーを生産するのを支えます// しかし、秋になり、日照時間が短くなり、気温が下がると/ クロロフィルの生産が遅くなり、最終的に停止します//

クロロフィルの減少は他の色素が見えるようにする// 例えば、カロテノイドは/ 黄色やオレンジ色を生み/ 一方でアントシアニンは赤や紫色を作り出します//
これらの色素は樹木を助けます/ 資源をより効率的に管理できるように/ そして種によっては/ 役割を果たすこともある/ 花粉媒介者や種子散布者を寄せつける//

その視覚的な美しさを超えて/ クロロフィルの分解は果たします/ 樹木の生存において重要な役割を// クロロフィルの生産を停止することで/ 樹木は貴重な栄養素を回収できます/ 落ちる前の葉から// このプロセスは、樹木が資源を節約し/ 厳しい冬の条件への備えとなります// 最終的に、この鮮やかな色彩は、単に目の保養だけでなく/ 動作における自然の精巧なプロセスの証でもあるのです//

Vocabulary and Phrases

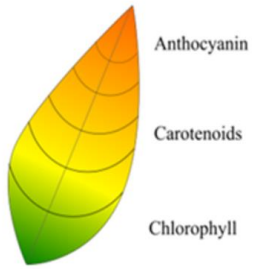
transition	移行
remarkable	驚くべき
spectacle	光景
emerge	出現する
vibrant	鮮やかな
stunning	見事な
transformation	変化
palette	色の範囲
pigment	色素

photosynthesis	光合成
abundance	豊富
reduction	削減
hue	色合い
resources	資源
pollinators	花粉媒介者
seeds	種子
dispersers	拡散者
cease	停止する

reclaim	回収する
nutrients	養分
conserve	保存する
harsh	厳しい
intricate	複雑な

Total Number of words used
: 241 words
Time for 120 wpm
: 121 sec.
Time for 150 wpm
: 97 sec.
Your BEST TIME
: _____ sec.

＊TIPS＊



https://cid-inc.com/blog/how-climate-change-impacts-leaf-pigments/

＊裏面の問題は音読を毎回 40 分以上反復してから挑戦しましょう＊

Summary① Fill Blank:

In Japan, leaves change color in autumn due to a _____ in chlorophyll, the green pigment responsible for _____. As chlorophyll production slows, other pigments like _____ and anthocyanins become visible, creating vibrant yellow, orange, red, and purple _____. This change helps trees reclaim _____ before the leaves fall, preparing them for winter's _____ conditions. Thus, the beautiful colors are a reflection of these _____ processes.

Summary② Summary(50 -80 words):

_____

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Summary③ Sample Answer:

In Japan, leaves change color in autumn due to a reduction in chlorophyll, the green pigment responsible for photosynthesis. As chlorophyll production slows, other pigments like carotenoids and anthocyanins become visible, creating vibrant yellow, orange, red, and purple hues. This change helps trees reclaim nutrients before the leaves fall, preparing them for winter's harsh conditions. Thus, the beautiful colors are a reflection of these intricate processes.