

'Bulb' Expansion Lesson: Plant Root Structures

Why do some plants store energy? Where do they store energy? How do people access this energy (which bulb-like structures can you name that people eat?)

Bring in/dig up examples of different root structures plants have for storing energy – show students in the garden where these plants are/what they look like.

Types of root structures:

corms: <http://en.wikipedia.org/wiki/Corm> (taro/elephant ear, gladiolas)

bulbs: <http://en.wikipedia.org/wiki/Bulbs> (daffodil, onion, garlic, tulip)

tubers: <http://en.wikipedia.org/wiki/Tuber> (potato, dahlia)

(technically: stem tuber = potato, root tuber = sweet potato/dahlia)

rhizomes: <http://en.wikipedia.org/wiki/Rhizome> (ginger, canna, iris)

** (stolons: <http://en.wikipedia.org/wiki/Stolon> (can be above or below ground e.g. “runners” on strawberry plants above ground, not for storing energy but connecting storage bodies for transfer of nutrients)

Compare & Contrast:

'dissect' structures so students can see inside, break or cut in half
let students taste edible versions

Corm: solid inside, flatter shape, sprout from center point, new corm grows on top of old, make baby cormlets, taste taro root

Bulb: layers inside peel back, not solid like a corm, sprout from center point, make bulblets, taste garlic/onion bulbs

Tuber: has multiple buds or “eyes” that sprout, solid inside, can be connected by stolons underground, taste potatoes and sweet potatoes

Rhizome: grows horizontally, has several points to sprout, taste ginger root

Planting bulbs:

Students plant tulip bulbs in garden beds (3x depth of bulb size rule of thumb).

They can also plant ginger root (lay on surface of soil) in pots in classroom – be sure to find ginger that has swollen green 'nodes' which will soon sprout.

Students can also leave a potato in classroom with a few green 'eyes' to watch those nodes sprout in coming weeks.

Expansion Questions:

What signals a bulb to begin sprouting? When and Why is it dormant? How does it replenish the energy it needs to sprout next year? What part of the bulb makes this energy that it stores in its underground structure?