



Seed to Sprout Teacher Guide

The Texas Department of Transportation (TxDOT) works to maintain the state's wildflowers. TxDOT's Maintenance Division maintains over 1 million acres of roadway each year. Their work includes mowing, sodding, de-icing, erosion control, wildlife management, and even planting flowers along the way. Wildflowers prevent soil erosion along the roadside, preserve pollinators (like bees), and beautify our Texas. TxDOT seeds 18,000 acres each year – that's a lot of bluebonnets!

We hope can use this toolkit to **Go Beyond The Road** with TxDOT!

- [Download our Wildflowers](#) of Texas poster or brochure to identify plants in your area. Order free wildflower seed packets to plant your own!
- Try this [germination activity](#) using free TxDOT wildflower seed packets!
- Many of TxDOT's [Safety Rest Areas](#) feature wildflowers and butterfly gardens!

Elementary

Applicable TEKS: Science 10A (K); 10B (1st & 2nd); 9A (4th)

Answer Key for Seed to Sprout Elementary Activity:

- 1) Air, water, and good soil
- 2) Stem
- 3) Pollen
- 4) Angiosperms are plants that grow flowers. Gymnosperms do not create flowers, like conifers (trees that produce pinecones or needle-like leaves).

Middle School

Applicable TEKS: Science 14A (7th)

Use this activity when discussing alleles, cell differentiation, gene expression, and genetics.

Answer Key for Seed to Sprout Middle School Activity:

- 1) 2/4 BB, 2/4 Bb, 0/4 bb; 4/4 Texas Bluebonnets, 0/4 Red Texas Bluebonnets
- 2) 0/4 TT, 4/4 Tt, 0/4 tt; 4/4 Tall plants, 0/4 short plants
- 3) 0/4 GG, 2/4 Gg, 2/4 gg; 2/4 Texas thistle with green leaves, 2/4 Texas thistle with dark green leaves
- 4) White, White, Purple; Smooth, Smooth, Wrinkled; Long, Long, short

Looking for more?

- The U.S. Forest Service has coloring pages, word searches, and other wildflower activities available for free on their [website](#).
- This simple [experiment](#) teaches students about seed germination.
- Take this short interactive [quiz](#) to test your knowledge about photosynthesis!