Soil Amendments for the School Garden

A month or two before the planting season, apply 3 to 4 inches of organic matter on the garden bed, working it into the top layer of soil. This added organic matter will improve the soil structure, water retention, and nutrient availability of the soil.

It is common for salts to build up in irrigated soil in the Southwestern region. A deep watering at the beginning of the season as part of soil preparation is beneficial to leach the salt buildup out of the soil.

Plants do not distinguish where an added nutrient has come from. It is at the gardener's discretion to choose between "organic" and "chemical" amendments. The plant will readily absorb either, however, organic amendments will first need to be changed into a useable form by bacteria and fungi in the soil, which takes more time. This should be considered when planning a garden schedule.

If choosing to add a synthetic amendment, a fertilizer mixture of nitrogen and phosphorus can be applied at this time to establish a good nutrient base. The three numbers listed on a fertilizer package indicate the percent nitrogen (N), phosphate (P2O5), and potash (K2O) that it contains.

Arizona's garden soils most commonly need nitrogen and phosphorus. Phosphorus will encourage strong growth of new seedlings and nitrogen will contributes to overall plant growth and foliage. Rainfall and irrigation can cause unused nitrogen in the soil to leach away, so adding it annually is a good practice.

See the table below for recommendations on form and amounts of nitrogen and phosphorus.

Nitrogen	Phosphorus
Ammonium Sulfate (21-0-0) or Ammonium Phosphate (16-20-0)	Triple superphosphate (0-45-0) or Ammonium Phosphate (16-10-0)
1 – 2 pounds per 100 ft^2	1 – 2 pounds per 100 ft2

Applying fertilizers in advance of planting is important to allow them to breakdown and become incorporated into the soil. Plants require fertilizer most when they are growing rapidly early in the season. There are different ways to apply fertilizer. The method will depend on the plant varieties grown and which fertilizer is being added. See Figure 1.

Broadcast – fertilizer is spread consistently over the garden soil and can either be worked into the first 3 – 4 inches or left to filter into the soil naturally.

Band – narrow trenches are dug 2 – 3 inches from where the seeds/seedlings will be planted. Fertilizer is placed inside the trenches and covered to a depth of 2 – 3 inches deeper than the seeds/seedlings will be planted. For plants spaced further apart, place trenches 4 inches from the plant base.

Side-dress – Fertilizer is scattered on 6 – 8 inches from the plant base on both sides. Work and water into the soil.

See Figure 1.

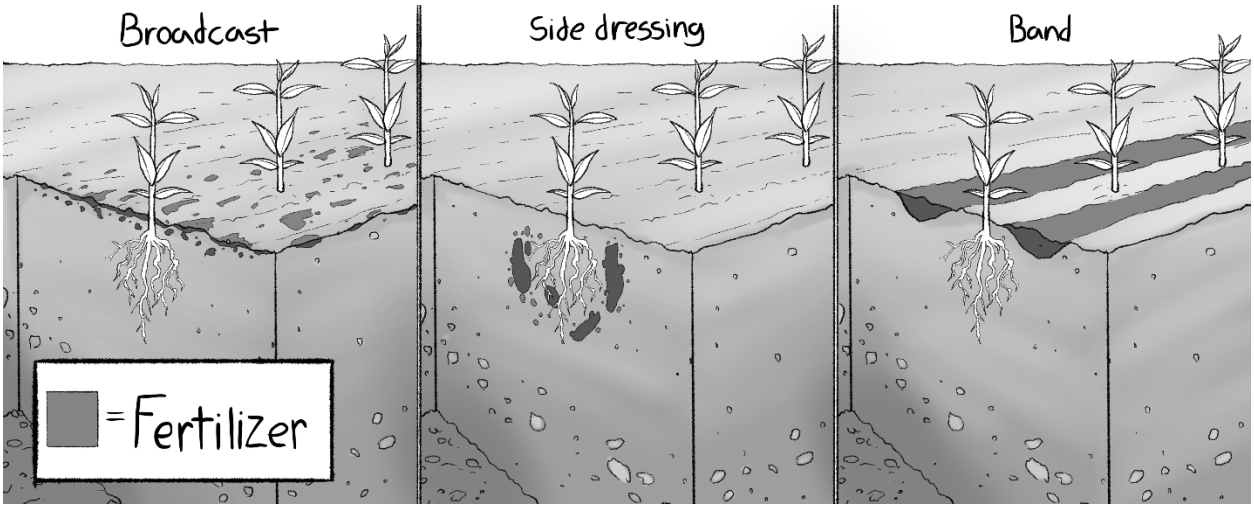

Figure 1: Fertilizer Application Methods