Teachers:

* Use the Mulch and Soil Fertility article to have students complete the Anticipation Guide.
* Upon completion, students could then do the following:
  + Research the C:N ratio of coffee.
  + Determine whether or not coffee is a good organic amendment option for soils.
  + Justify why coffee is or is not a better option than another material (i.e. wood chips).
  + Students could measure the Nitrogen, Phosphorus and Potassium levels of your garden’s soil using a kit from a garden store (like Mosser-Lee or another easy to use kit) and test the concentrations in the soil before, during, and at the end of the mulching project.

**Mulch and Soil Fertility, 5.02, P:1**

**Agriculture Literacy Strategy- Anticipation Guide**

[](http://www.google.com/imgres?safe=active&sa=X&rls=com.microsoft:en-us:IE-SearchBox&tbm=isch&tbnid=Fuo6qHAbZFw5BM:&imgrefurl=http://www.bentonswcd.org/projects/phs_compost/&docid=Wf9fX7Zzq7oaaM&imgurl=http://www.bentonswcd.org/projects/phs_compost/compost_pile-lg.jpg&w=700&h=525&ei=ydCEUrnTDcTckQeuiIDQCQ&zoom=1&iact=hc&vpx=2&vpy=250&dur=2422&hovh=194&hovw=259&tx=128&ty=92&page=1&tbnh=141&tbnw=185&start=0&ndsp=21&ved=1t:429,r:7,s:0,i:102)

**On your own:** In the space to the left of each statement, place a T if you think the statement is true, an F if you think it is false.

**In small groups:** Compare your answers and discuss why you have agreed or disagreed with the statement.

**On your own:** Read my article entitled *Mulch and Soil Fertility*, marking on the page or other supporting evidence to confirm or refute your original prediction beside the statement.

**In small groups:** Defend your point of view—politely but firmly.

**Whole group discussion:** What are the benefits of using straw bale gardens and what are the disadvantages?

|  |  |  |  |
| --- | --- | --- | --- |
| Before |  | After | Evidence |
|  | Adding more mulch is always a good idea for the garden. |  |  |
|  | Mulch helps in reducing water loss, insulating the soil, decreasing erosion and compaction, and minimizing weeds present. |  |  |
|  | There are a number of inorganic mulches that will help amend your soil. |  |  |
|  | In addition to the other benefits of adding organic soil, microorganisms will also provide additional nutrition to the soil. |  |  |
|  | Using shredded pallets as mulch will amend the soil in a better manner than compost. |  |  |
|  | Using wood chips can lead to nutrient deficiencies. |  |  |
|  | The C:N ratio of freshly fallen leaves makes it a great mulch to use and will ensure lots of nitrogen for the soil. |  |  |
|  | When carbon values are really high in comparison to nitrogen values, then the soil is starved of nutrients. |  |  |
|  | One way to increase the competition between plants and microbes is to add fertilizer. |  |  |
|  | Places that should employ mulches with high C:N ratios are those like walkways. |  |  |
|  | Areas of a garden must have mulches low in C:N ratios like recycled wood pallets. |  |  |
|  | When using a mulch in a vegetable garden the better choice is composted manure. |  |  |

