Rain Garden Soil Calculation Worksheet

1. Determine how many inches of soil you're removing (Example: 24”)
2. Divide by 12 to convert to feet:
   \[ \text{in} \div 12 = \text{ft} \]
   (Example: 24 in. divided by 12 = 2 ft.)
3. Multiply this number by the square footage of the garden
   \[ \text{ft} \times \text{ft}^2 = \text{ft}^3 \]
   (Example Rain Garden = 100 square feet, so 2 ft. x 100 ft² = 200 ft³)
4. Divide by 27 to calculate cubic yards
   \[ \text{ft}^3 \div 27 = \text{yd}^3 \]
   (Example: 200ft³ ÷ 27 = 7.4 yd³: That’s how much soil will be removed in the example.)
5. Determine how much soil is going back in: Subtract the ponding depth from your original measurement. (Example: Leaving 6” for ponding, we are refilling 18 inches: 24 – 6 = 18)
6. Divide by 12 to convert to feet:
   \[ \text{in} \div 12 = \text{ft} \]
   (Example: 18 ÷ 12 = 1.5 ft.)
7. Multiply this number by the square footage of the garden
   \[ \text{ft} \times \text{ft} = \text{ft}^3 \]
   (Example: 1.5 ft. x 100 ft² = 150 ft³)
8. Divide by 27 to calculate cubic yards
   \[ \text{ft}^3 \div 27 = \text{yd}^3 = \text{Amount of rain garden mix needed} \]
   (Example: 150 ft³ ÷ 27 = 5.6 yd³; 5.6 cubic yards will be needed to refill the rain garden.)
9. Calculate how much compost to order:
In well-draining soils, 65% of the mix will be native soil just removed, and 35% will be yard-waste compost. Multiply amount of rain garden mix needed (answer from Step 8) by 65%. This is the amount of native soil going back in.

\[ \text{yd}^3 \times 0.65 = \text{yd}^3 \]  

**Amount of native soil needed**

Example: 5.6 x 0.65 = 3.6 cubic yards native soils

Then take the amount of rain garden mix and subtract the native soil. This is the amount of compost you will need to order. (Box 1: enter answer from Step 8; Box 2: enter answer from above.)

\[ \text{yd}^3 - \text{yd}^3 = \text{yd}^3 \]  

**Amount of compost needed**

Example: 5.6 - 3.6 = 2 cubic yards of compost

If soils are poorly draining, then order a pre-made mix of 60% screened sand and 40% yard-waste compost by volume, using the calculation you arrived at in Step 8.

10. Calculate how much extra soil you have:
Subtract the amount of native soil you are adding to the mix from the total amount of soil removed, this will be the amount left over. (Box 1: answer from Step 4; Box 2: answer from Step 9.)

\[ \text{yd}^3 - \text{yd}^3 = \text{yd}^3 \]  

**Amount of soil left over**

Example: 7.4 - 3.6 = 3.8 cubic yards of leftover soil

**What to do with leftover soil?**

- If it’s free-draining, you can just make a nice berm at the top edge of the garden and mix in more compost to benefit the plants and reduce water runoff.

- You can also find other places on your property to make gardening beds.

- If it’s not free-draining, you’ll want to move it away from your rain garden area and make gardening beds on other parts of your property by adding lots of compost to improve it over time.

- You can also place ads to give it away to people who need soil!