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Growing Energy: Interpreting the Units Worksheet

Below are the data you will use to answer the scientific questions.

Crop	**Type**	**Harvest yield (Mg DM ha^{-1})**	**standard error**
corn	annual	14.2	0.6
prairie	perennial	3.3	0.2
switchgrass	perennial	6.5	0.3
miscanthus grass	perennial	14.0	0.9
poplar trees	perennial	8.5	1.4
weed field	perennial	2.7	0.2

The amount of dried plant material (biomass) is measured in "megagrams of dry matter per hectare (Mg DM ha^{-1})." Answer these questions to help make sense of these units.

1. What is a megagram?

2. The average person weighs about 150 pounds or 68 kg. How many people would it take to weight a megagram?

3. What is a hectare?

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4. The area of a football field is 120 yards by 53.3 yards or 5351 m^2. How many football fields would it take to make a hectare?

5. What is 1 Megagram per a hectare (Mg/ha) in people per a football field (people/fbfield)?

6. Express the average corn harvest weight in “people per a football field.” How many people per a football field is 14.2 Mg/ha?