

# Conservation of Matter

9/9/15

# How much does the air in a classroom weigh?

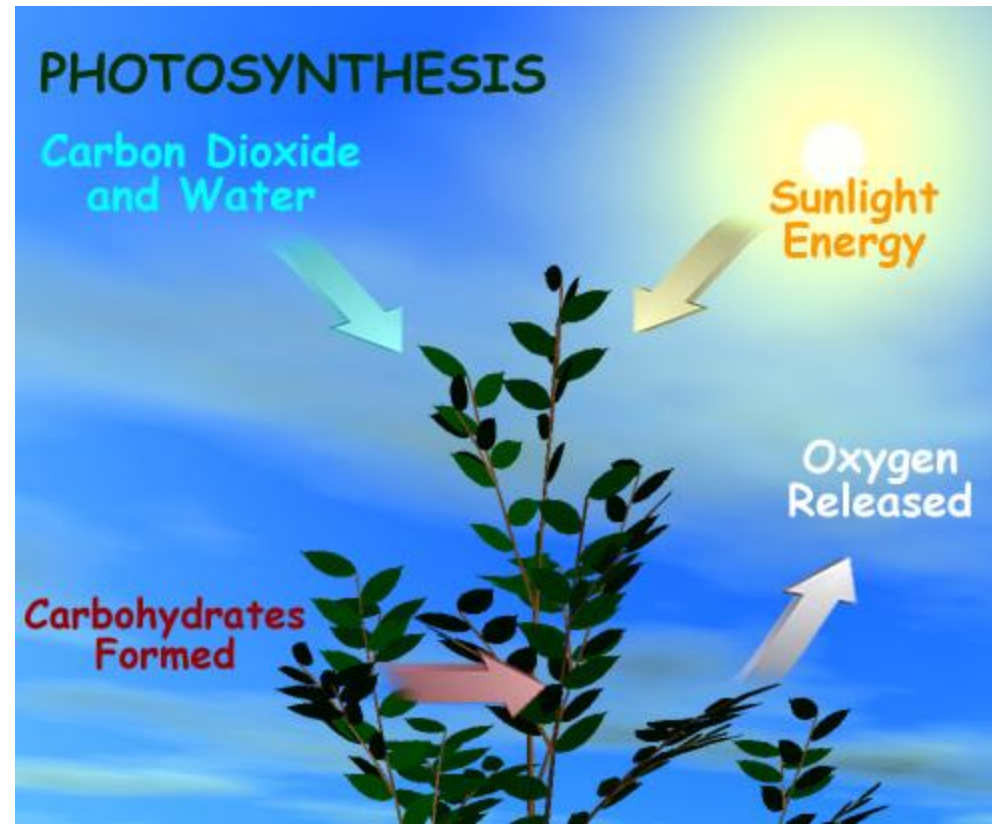
The air in the **lab** classroom weighed

- A. 10 lbs
- B. 100 lbs
- C. 1,000 lbs
- D. 10,000 lbs
- E. More than 10,000 lbs

# Conservation Laws

Consider a giant oak tree. Where does the largest fraction of the dry mass of the tree come from?

- A. Water
- B. Minerals in the soil
- C. Sun
- D. Oxygen
- E. Carbon

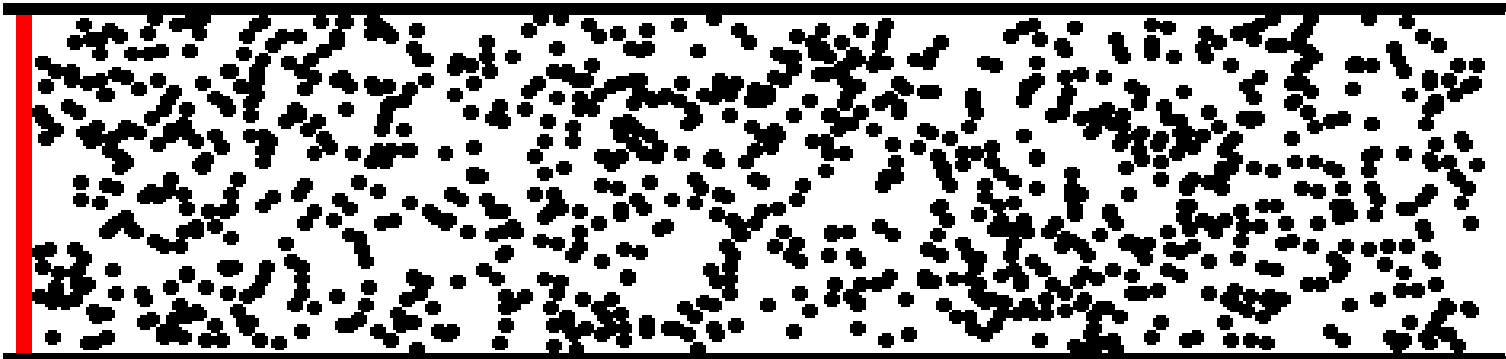


**Does energy have mass?**

**A. Yes**

**B. No**

# Sound travels

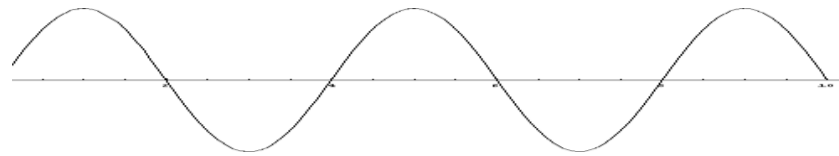
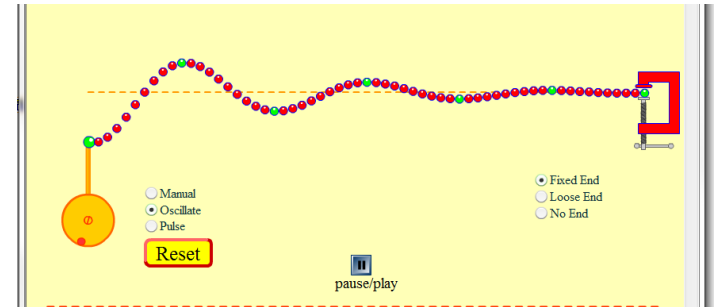
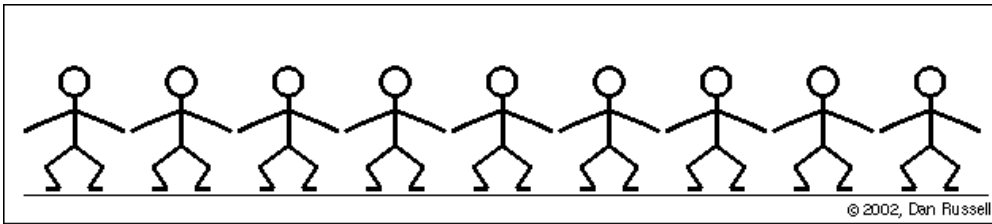


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**Sound carries energy.** It travels through the air, but air is not the sound.

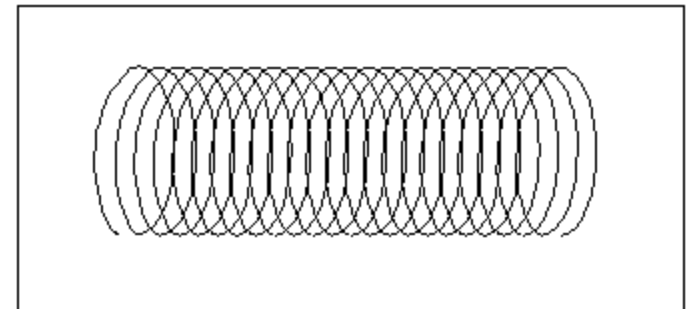
# Types of Waves

## Transverse Waves



## Longitudinal Waves

[Transverse, Longitudinal, and Periodic Waves](#)



**Does energy have mass?**

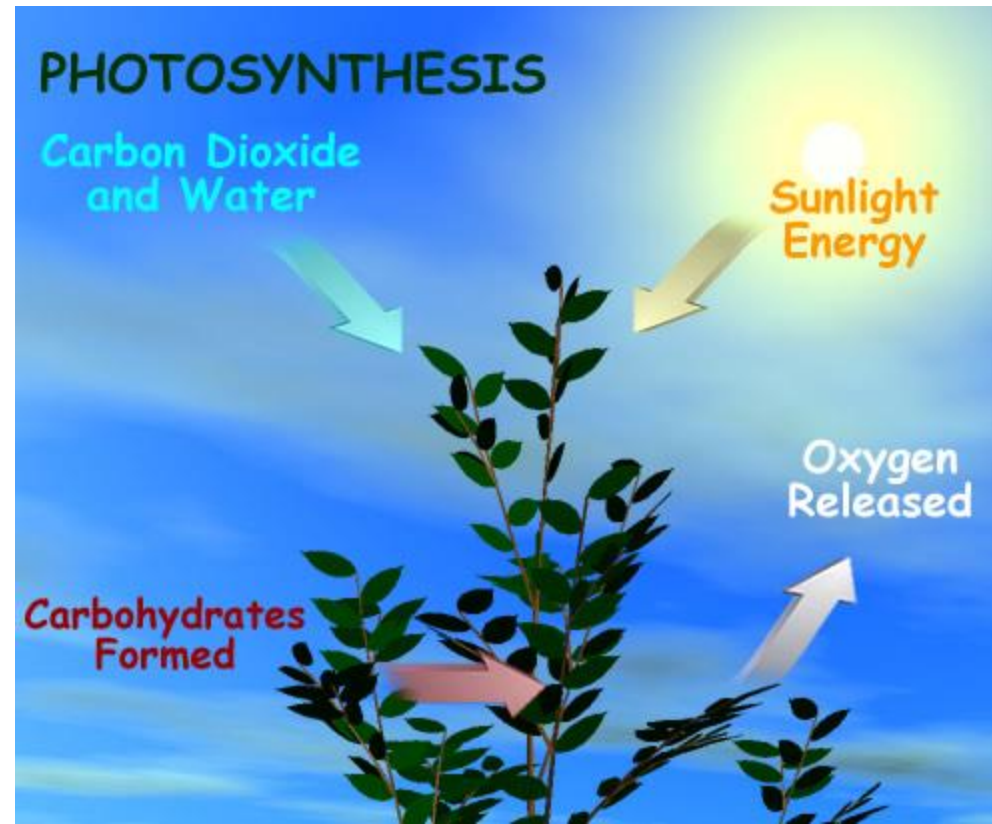
**A. Yes**

**B. No**

# Conservation Laws

Consider a giant oak tree. Where does the largest fraction of the dry mass of the tree come from?

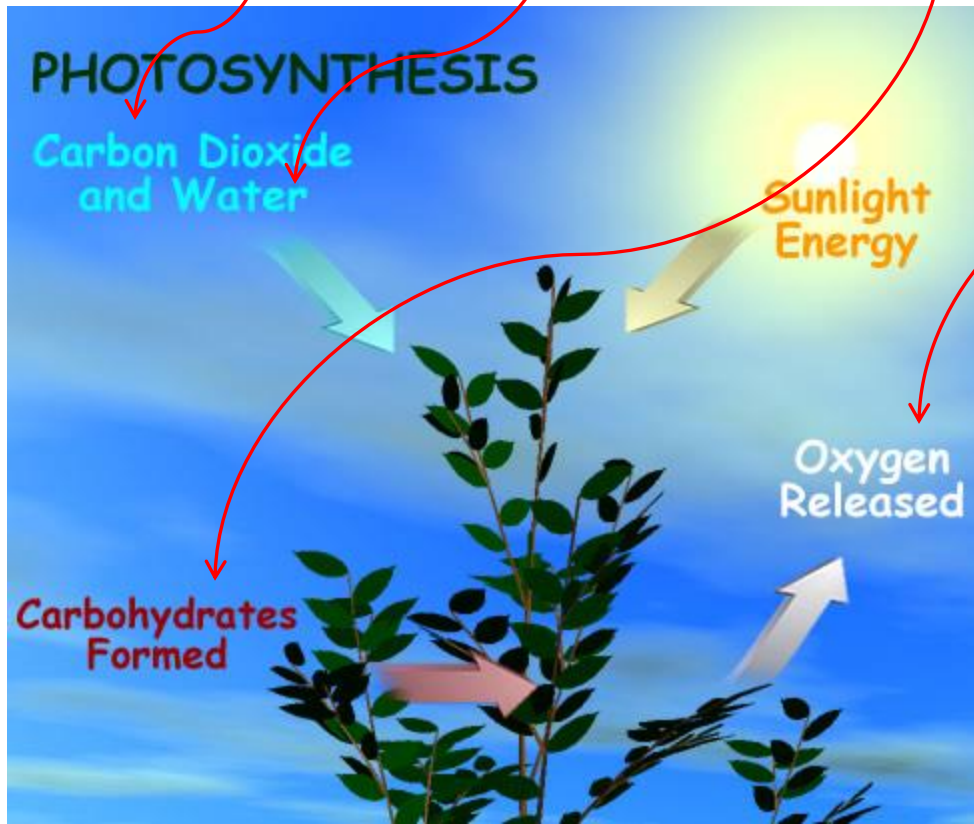
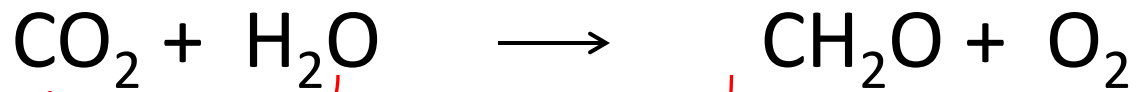
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- B. Minerals in the soil
- C. Sun
- D. Oxygen
- E. Carbon





# Conservation Laws

Where does most of the mass of dry wood come from?

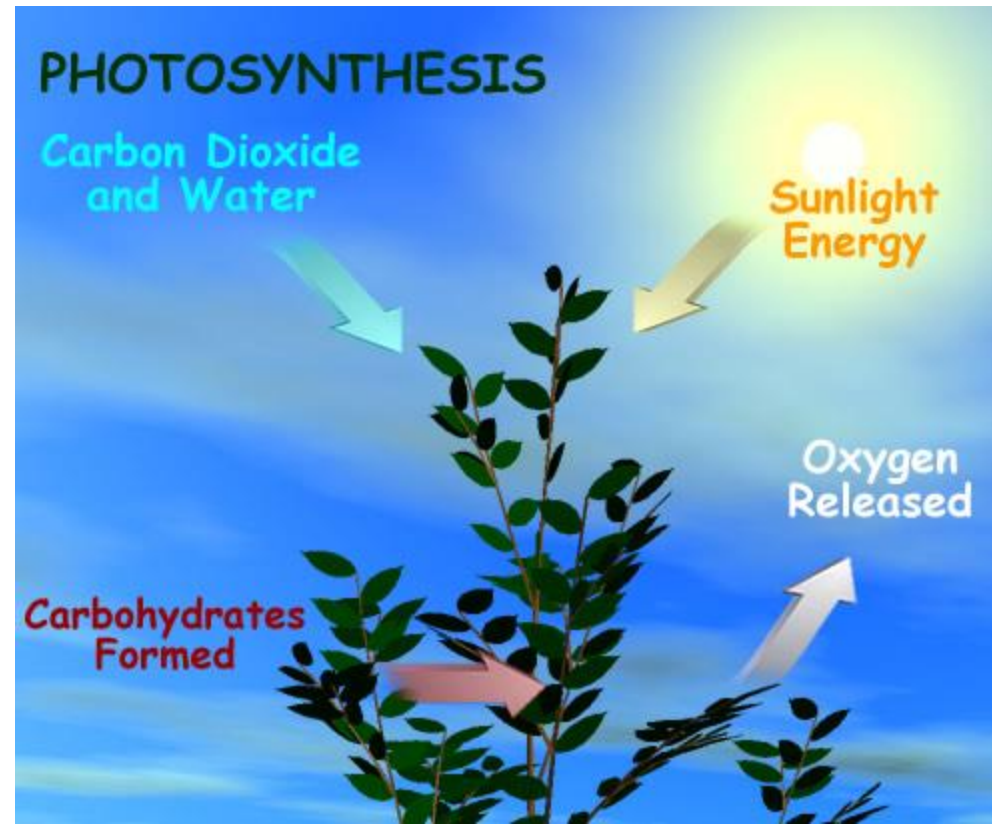


50% carbon  
6% hydrogen  
44% oxygen

# Conservation Laws

Consider a giant oak tree. Where does the largest fraction of the dry mass of the tree come from?

- A. Water
- B. Minerals in the soil
- C. Sun
- D. Oxygen
- E. Carbon**



# Conservation Laws

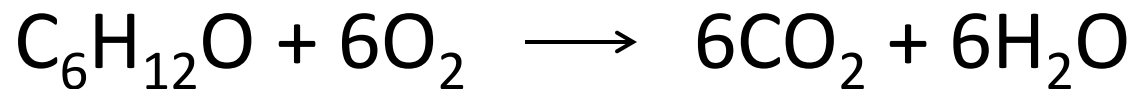
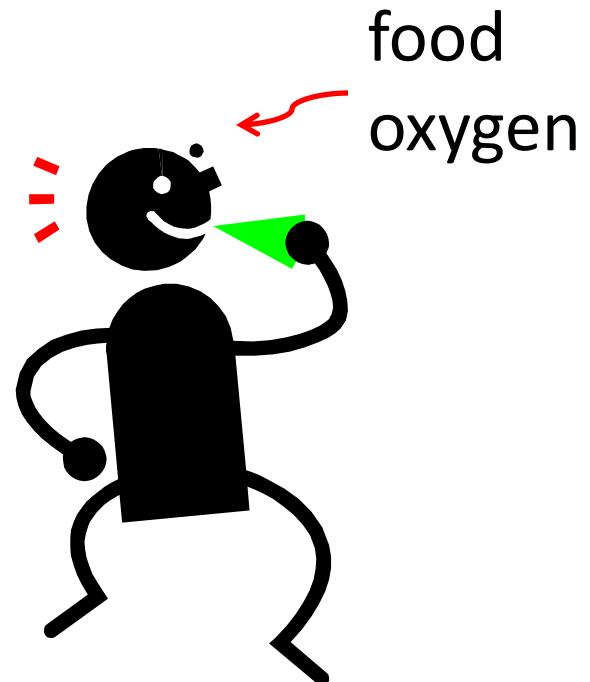
When you lose 15 lbs, how did the largest fraction of the weight leave your body?

- A. Urine
- B. Solid waste
- C. Energy
- D. Respiration – water vapor
- E. Respiration – carbon dioxide

# Conservation Laws

If you lose 15 pounds, how does most of the mass leave the body?

carbon dioxide  
waste  
evaporation



# Conservation Laws

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When iron rusts, it chemically combines with oxygen to form iron oxide. How much does a rusty nail weigh compared to the original nail?

- A. Rusty nail weighs the same
- B. Rusty nail weighs less
- C. Rusty nail weighs more

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