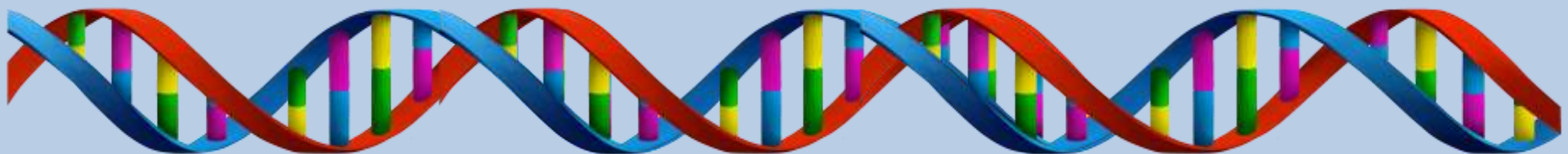


1. Compare and contrast science and engineering.
2. Take your water still back to a lab station. Have Ms. Bynum check your design. Measure the amount of **freshwater** you extracted using a graduated cylinder and deliver to Mrs. Moberly or Ms. Bynum. On your warm-up sheet answer:
  - What worked about your design? What didn't?
  - How could you improve your design?

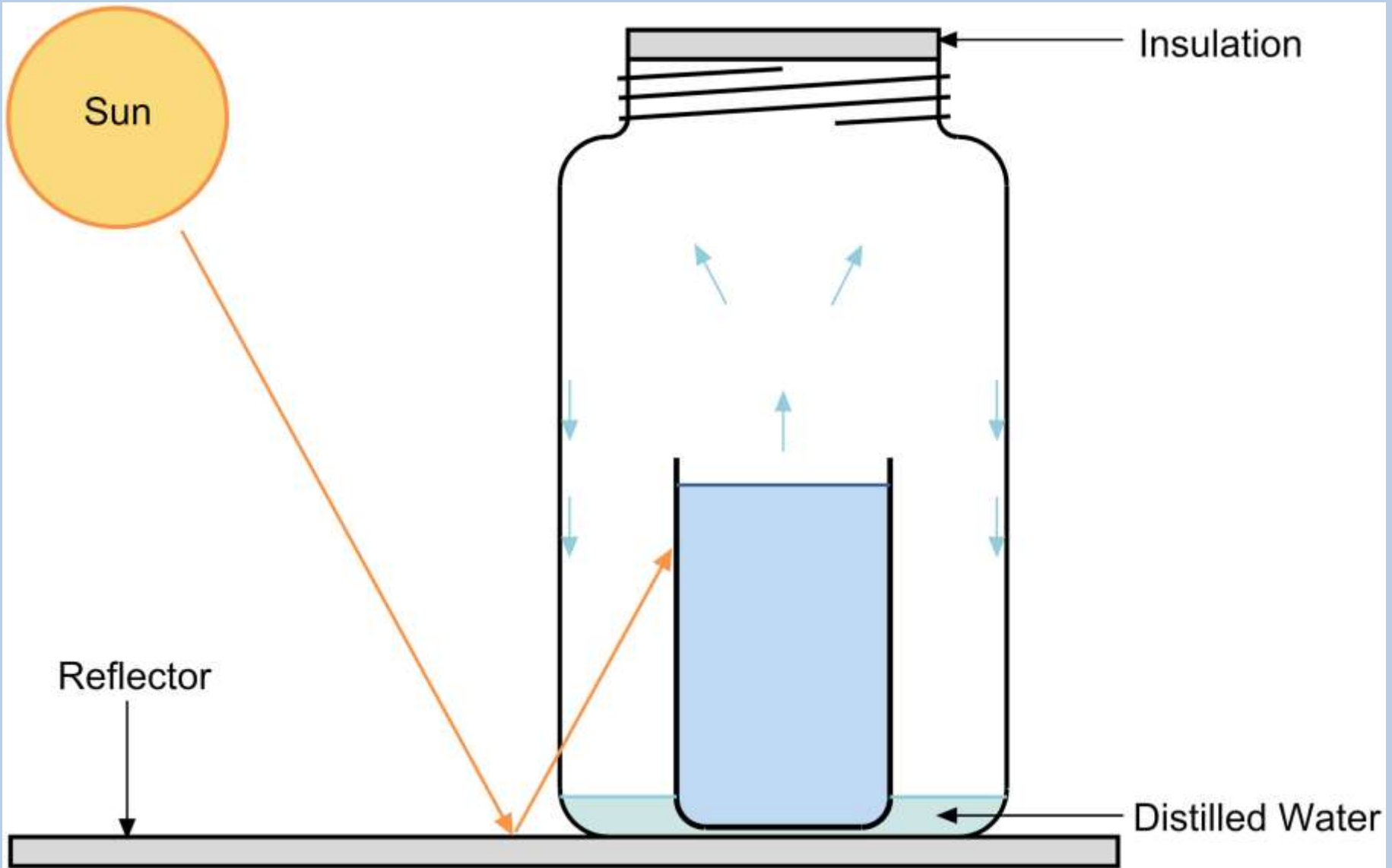


# Engineering Challenge

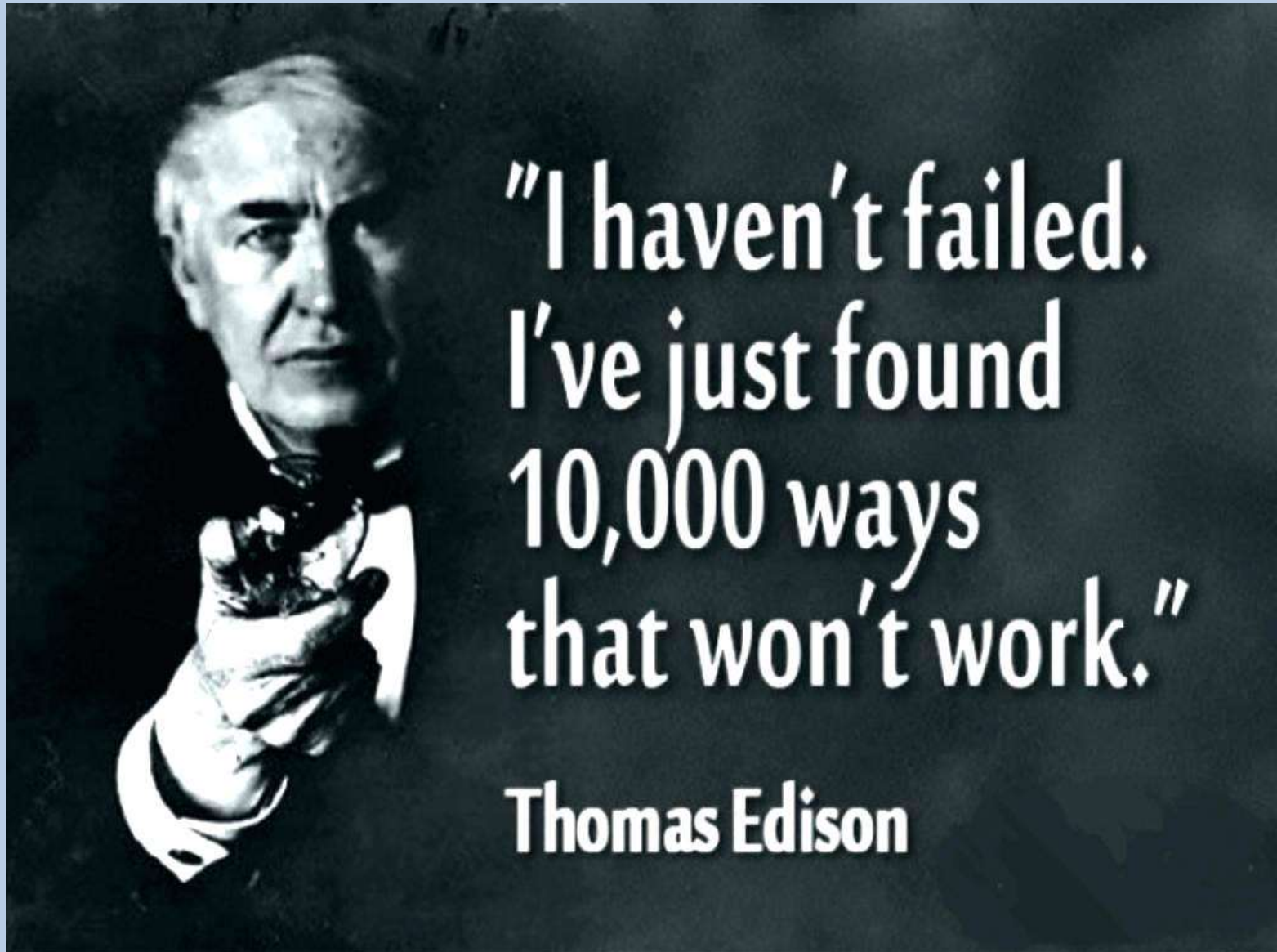
- Hopefully your design was effective! The winners will be announced at the end of class.



# Engineering Challenge



# Engineering Challenge



**"I haven't failed.  
I've just found  
10,000 ways  
that won't work."**

**Thomas Edison**

# Engineering Challenge

- Water scarcity is a real problem
- Real engineers are working on solutions... **BUT REMEMBER: solutions are limited by society.** Many places with water shortages have economic or geographic limitations.

<https://www.gatesnotes.com/Development/Omniprocessor-From-Poop-to-Potable>

**Identify the following slides as  
biotic or abiotic**



# Biotic or abiotic?



# Biotic or abiotic?





# Biotic or abiotic?





# Biotic or abiotic?



# Biotic or abiotic?





# Biotic or abiotic?

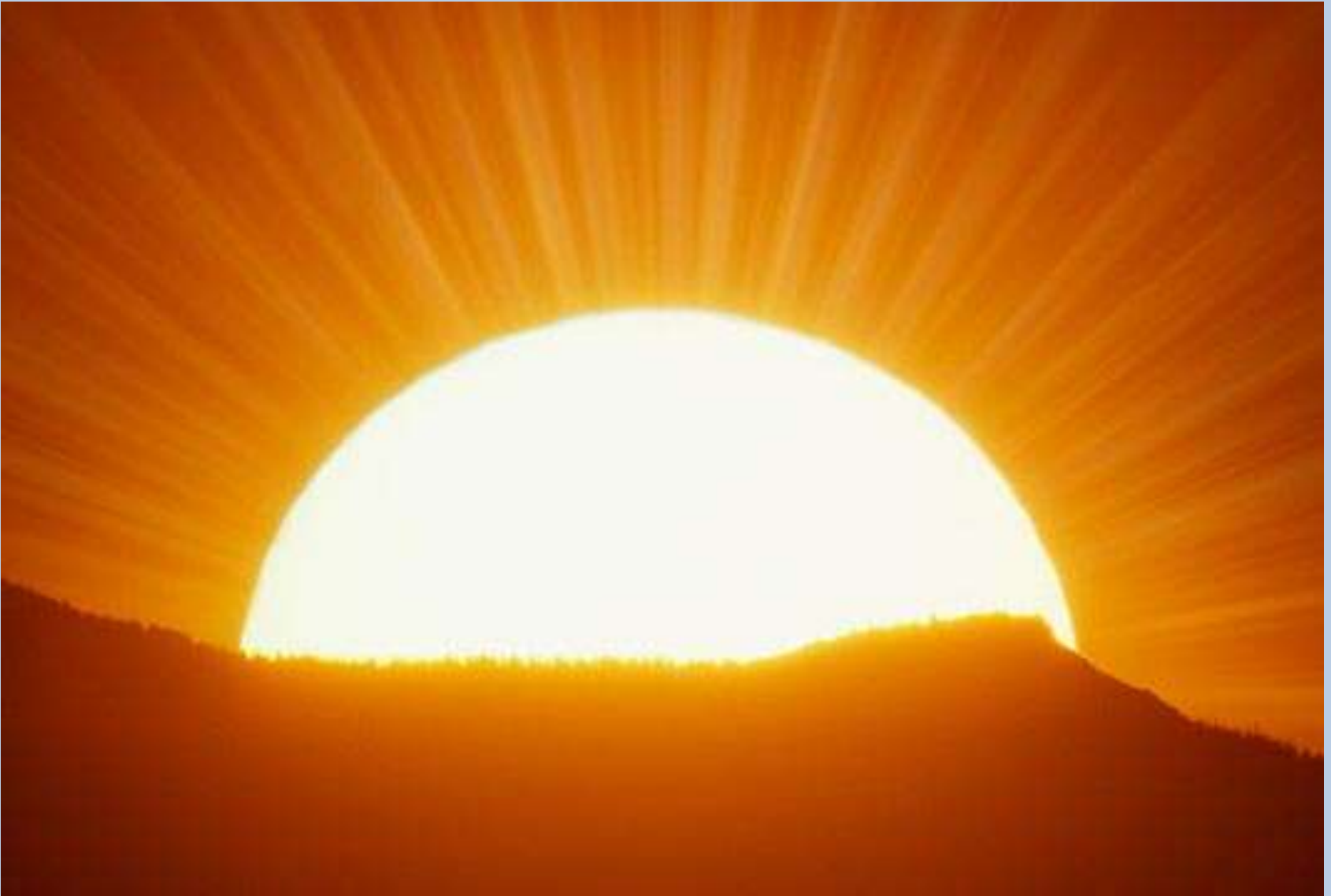


# Biotic or abiotic?





# Biotic or abiotic?



**What are some characteristics  
that all living things share?**

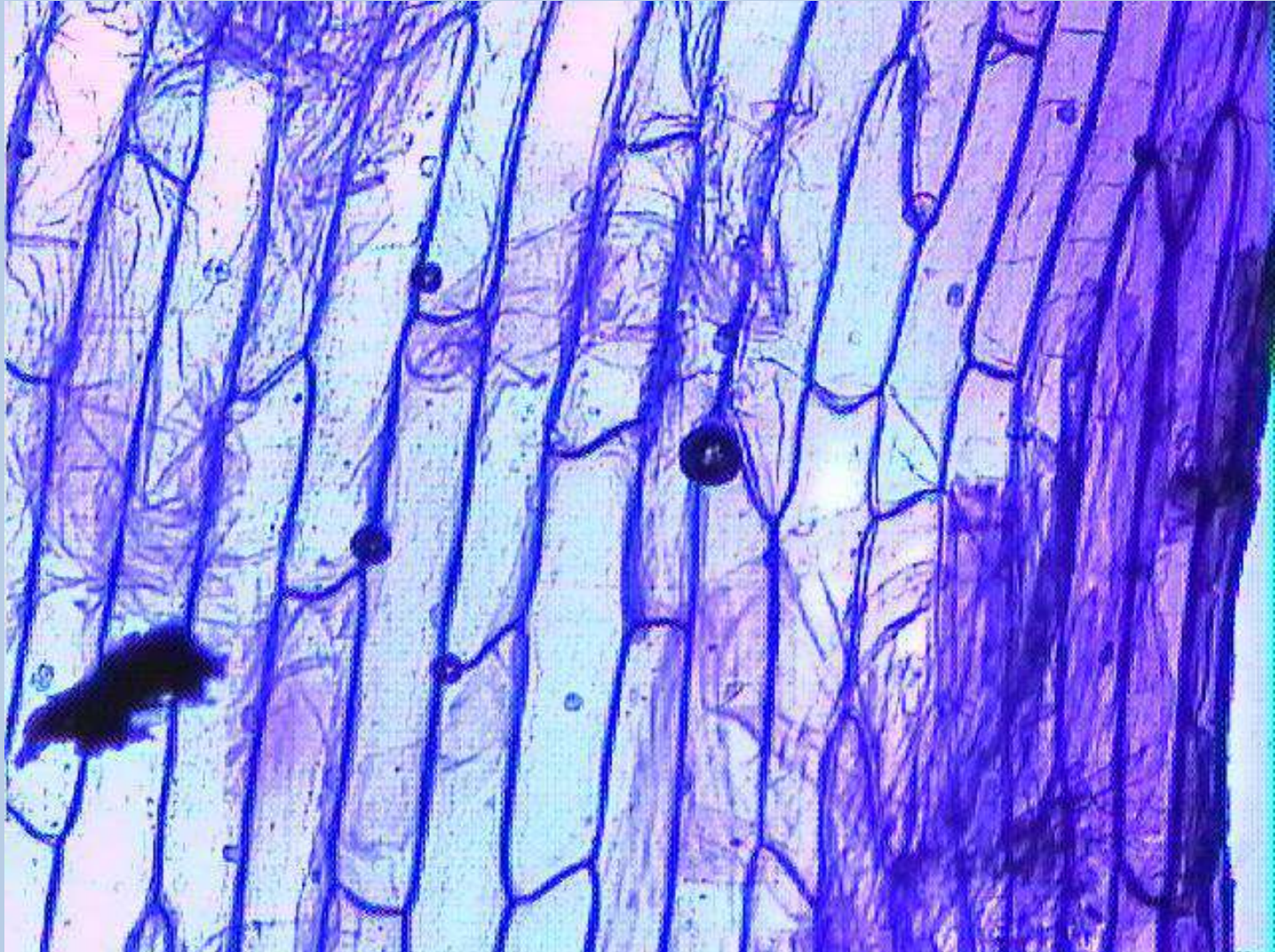
- **Brainstorm alone for 30  
seconds**

**What are some characteristics  
that all living things share?**

- **Discuss in groups**

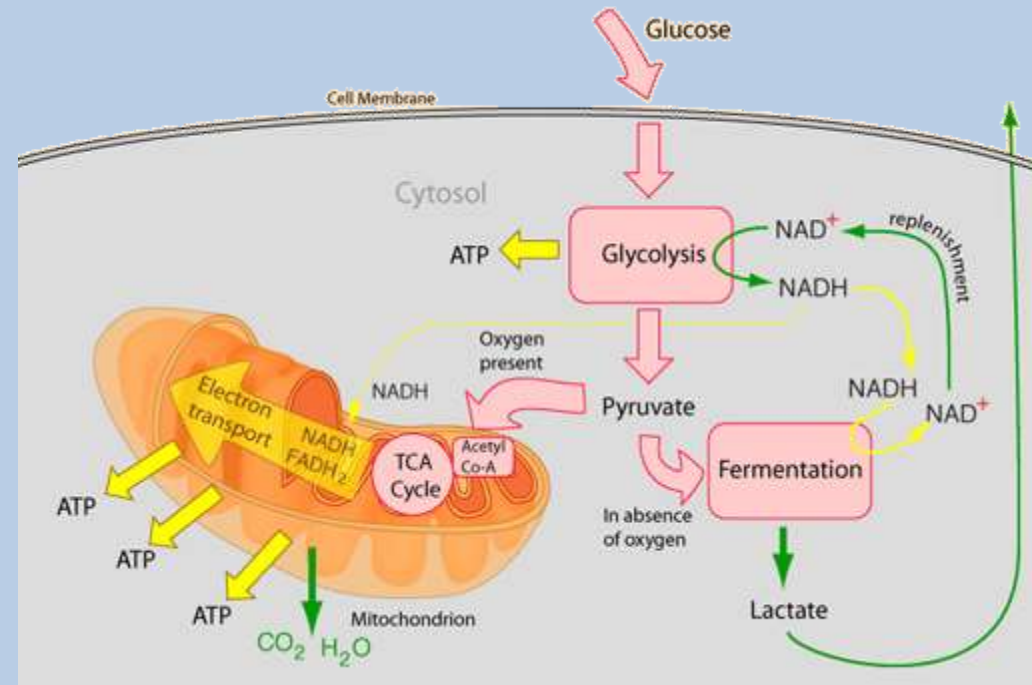
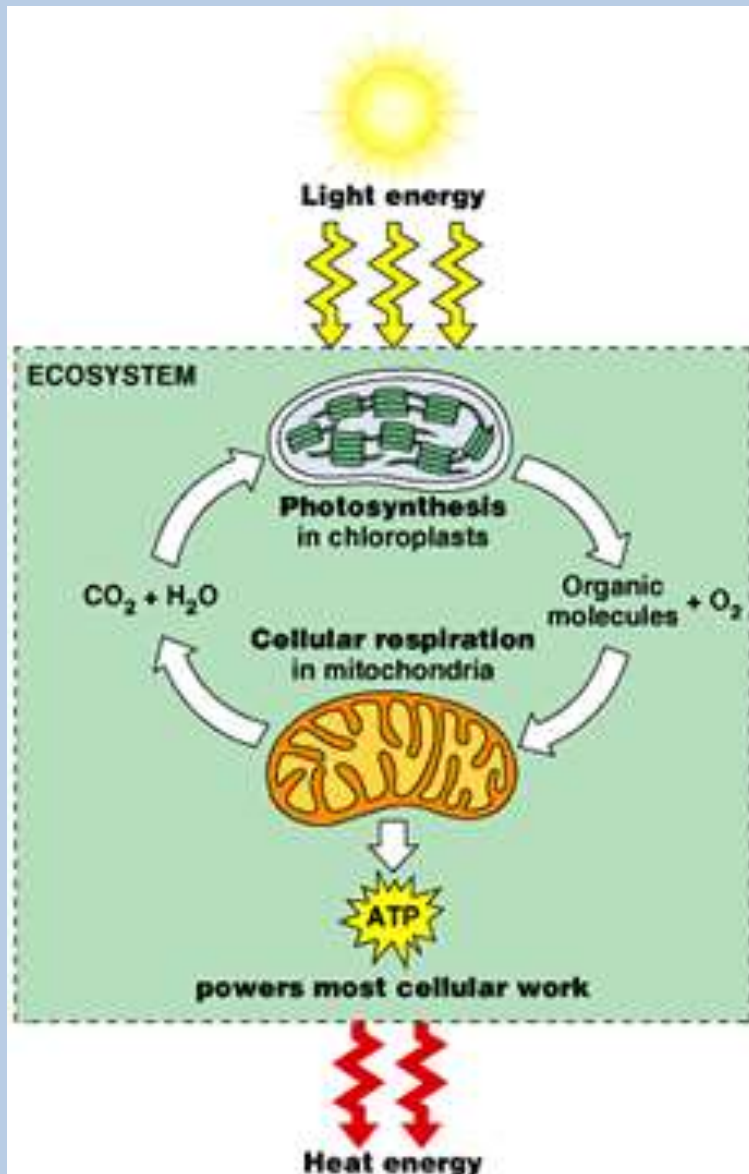
**What are some characteristics  
that all living things share?**

# Characteristics of Life - Cells





# Characteristics of Life - Metabolism



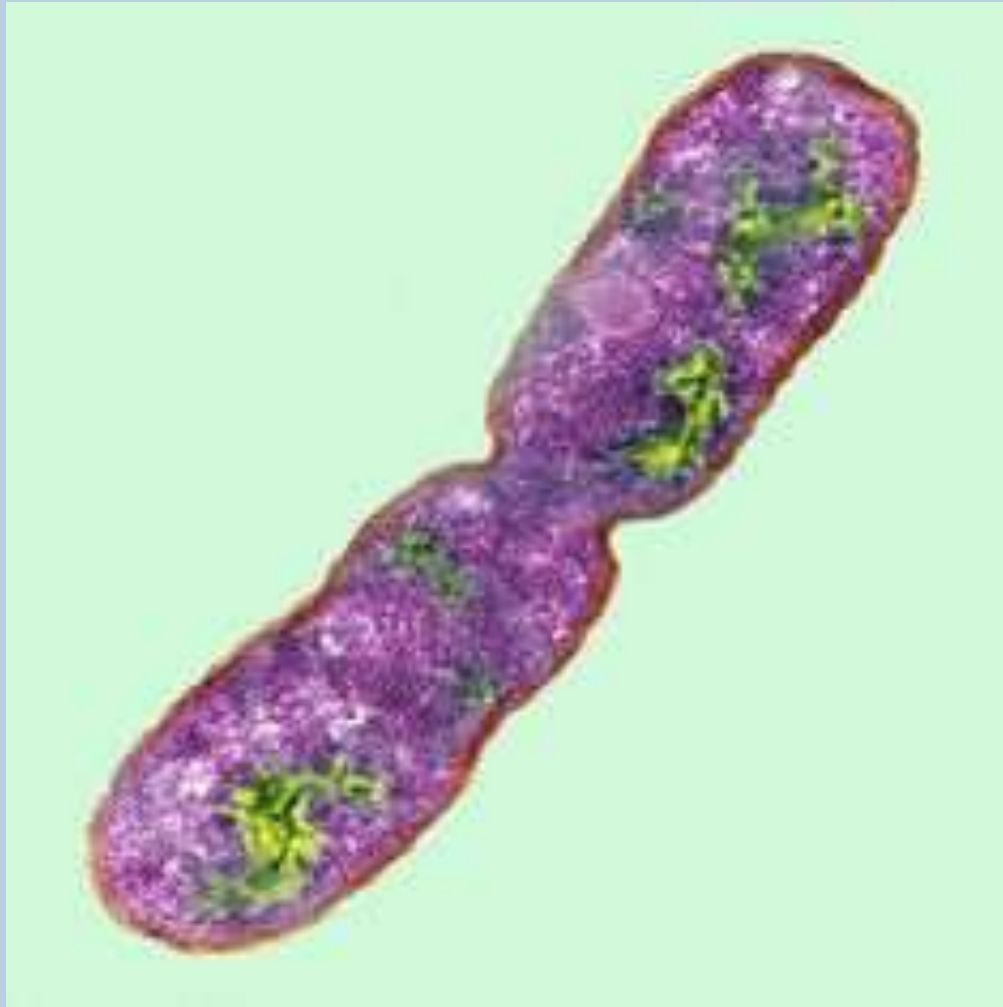
# Characteristics of Life – Response to Stimuli



# Characteristics of Life – Homeostasis



# Characteristics of Life – Reproduction





# Characteristics of Life – Change Over Time

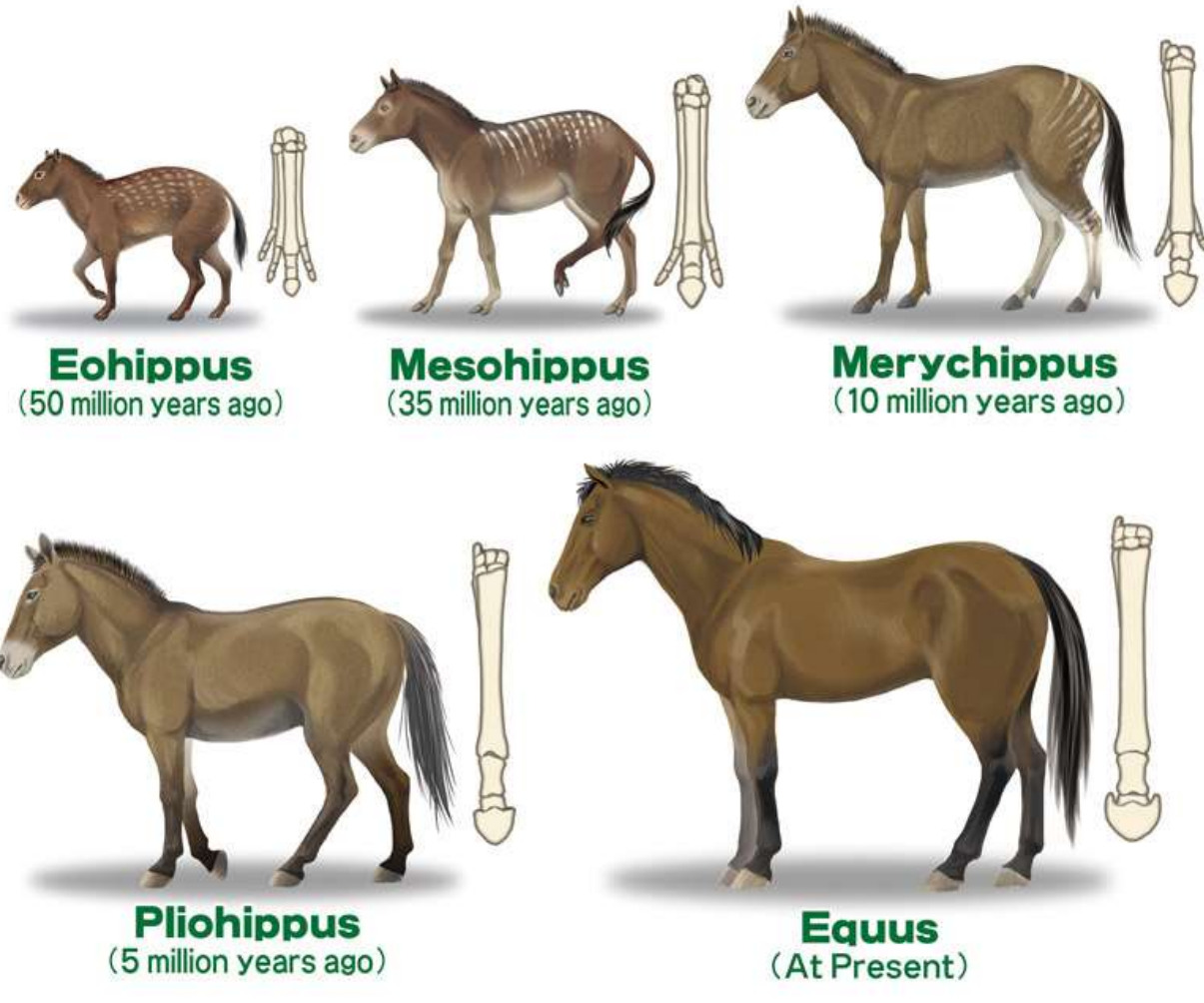




# Characteristics of Life – Genetic Material



# Characteristics of Life – Evolution



# Candle – Is it alive?



**Life must do all of these  
things INDEPENDENTLY.**

**Tape the “Characteristics of  
Life” onto page 9.**



# Engineering Challenge

- **And the winner is...**