

# Food Chains

## The Flow of Energy



**Dr. TJ Klein**

**The source of all energy**



**is the sun**

# The sun



**is the source of all energy**

# The source of all energy



is the sun

# The sun



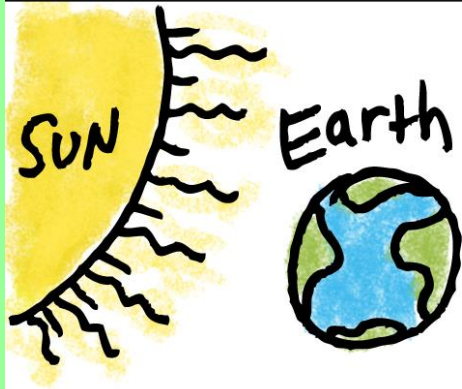
**is the source of all energy**

**The source of all energy**



**is the sun**

# Sun

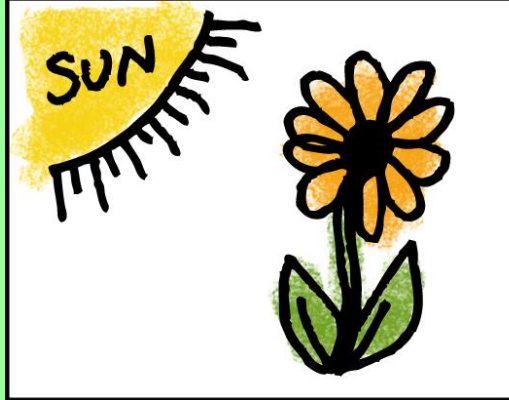


Sun

the star at the center of our Solar System that supplies heat and light to Earth



# Producers



producer

an organism that  
used sunlight to  
make its own  
food for energy





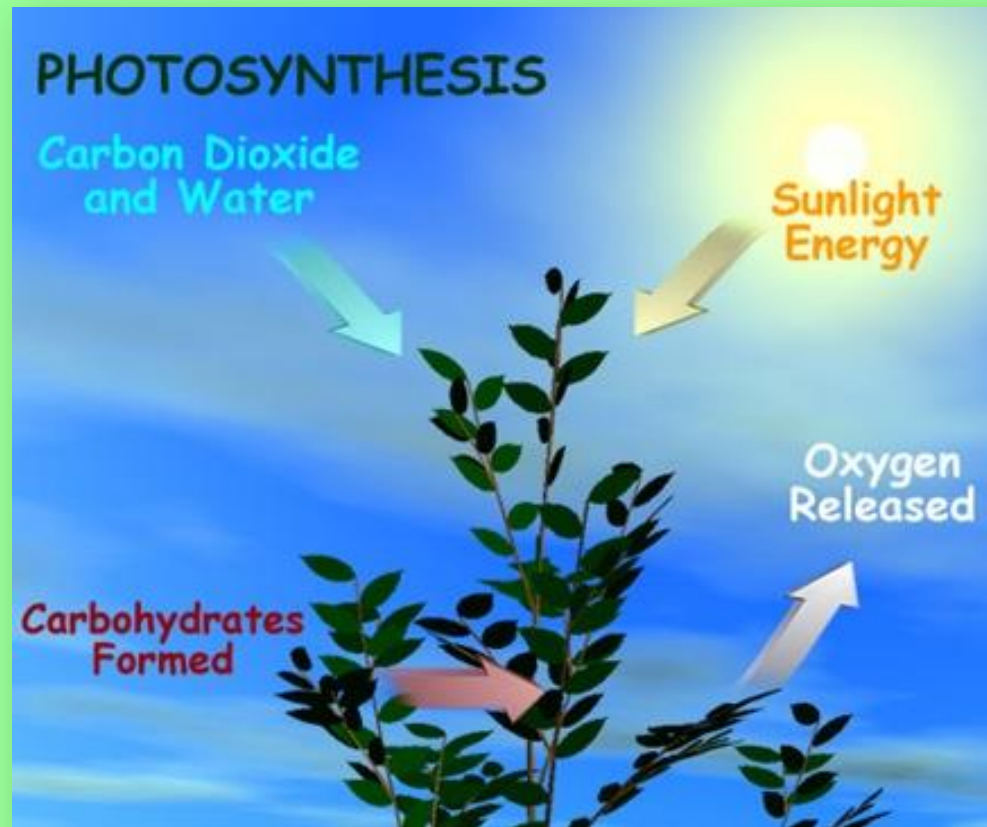
# Producers use the sun's energy



# Producers use the sun's energy



# through the process of photosynthesis



**to change the light of the sun  
into sugar (energy) and store it**



# Example



# Example



# Example



# Example

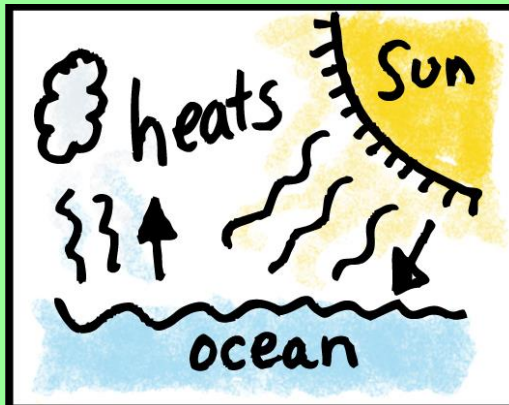




# Food chain



# Energy



energy

what is needed  
to do work or  
cause change

# Flow of energy



Sun gives energy to the grass

# Flow of energy



Grass gives energy to the mouse

# Flow of energy



Mouse gives energy to the eagle

# Flow of energy



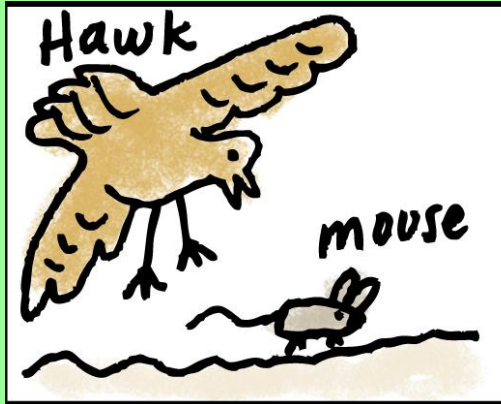
**Dead plants and animals give energy to the earthworm**

# Flow of energy



**Dead plants and animals give  
energy to decomposers**

# Predator



predator

An animal that  
hunts and feeds  
on another  
organism



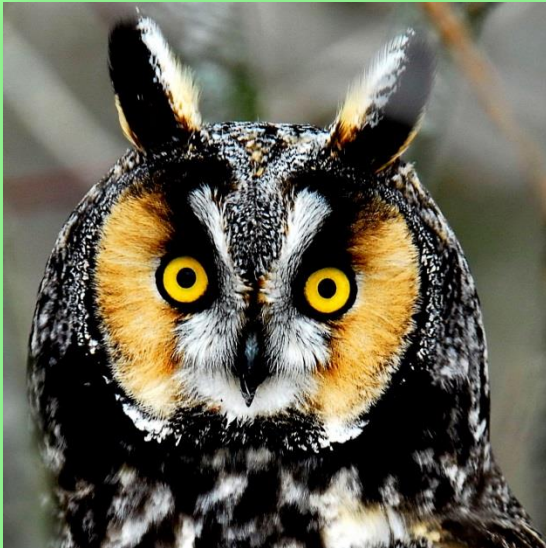


# Nocturnal



nocturnal

active at  
night



# Nocturnal

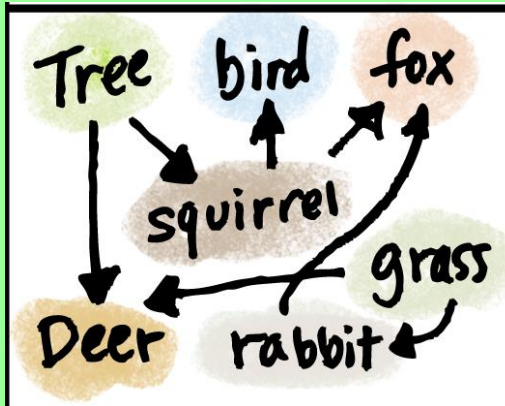


nocturnal

active at  
night



# Food web



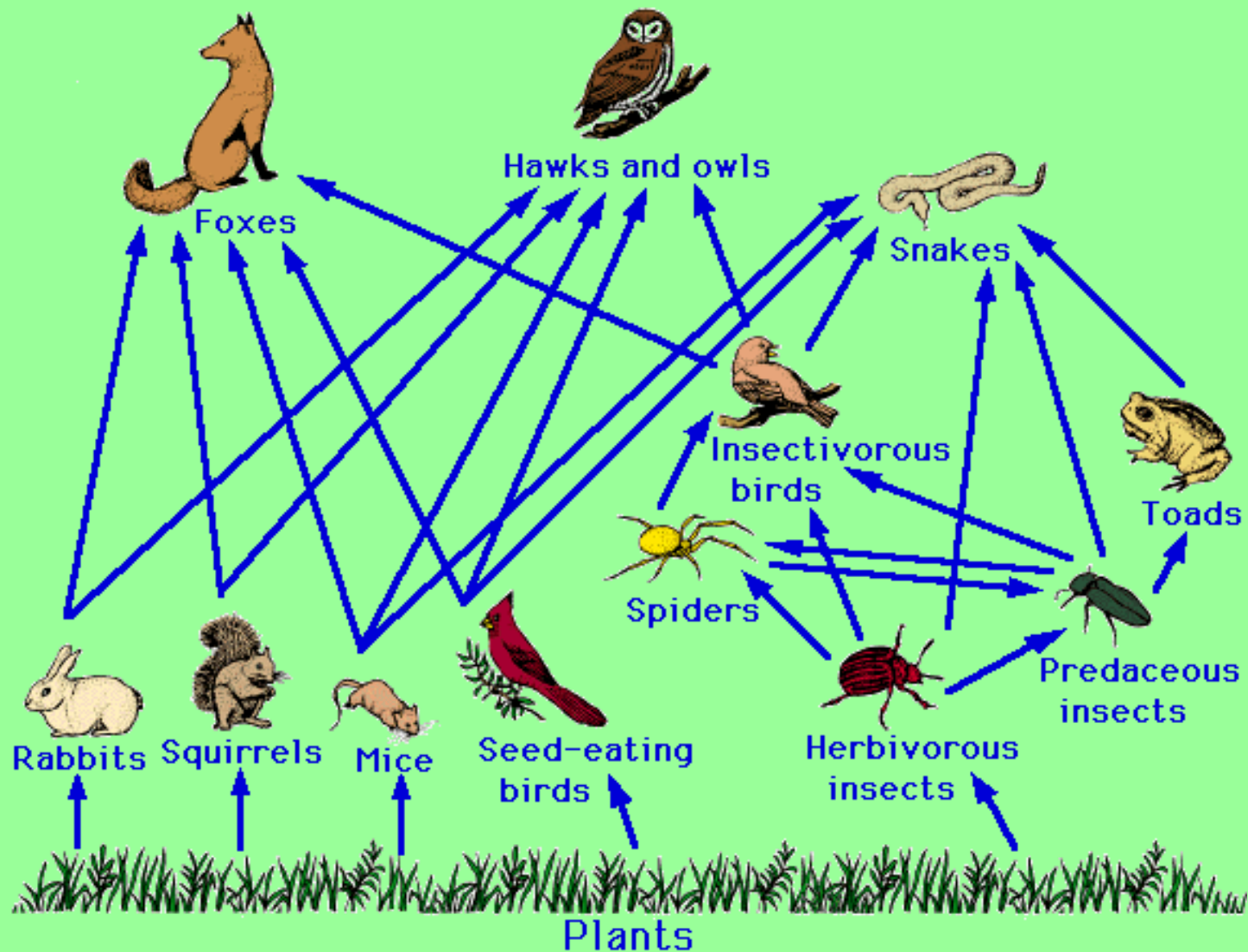
food  
web

a connection of  
food chains with  
many food energy  
paths in an  
ecosystem

# Food web



# Food web

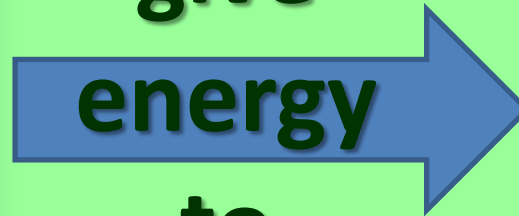


# The flow of energy



**worms**  
**decomposer**

give  
energy to

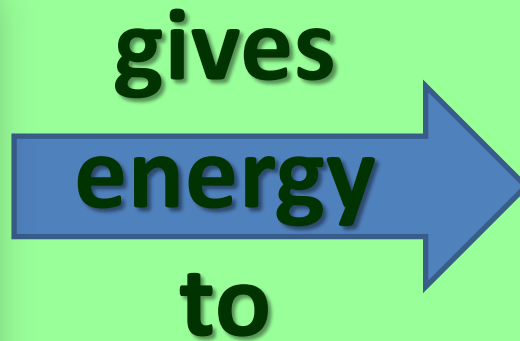
A large blue arrow pointing from the worms to the plants, indicating the flow of energy from decomposers to producers.

**plants**  
**producer**

# The flow of energy

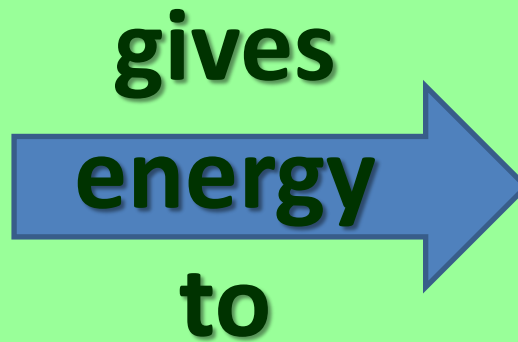


**grass**  
**producer**



**deer**  
**consumer**

# The flow of energy



**grass**  
**producer**

**mouse**  
**consumer**

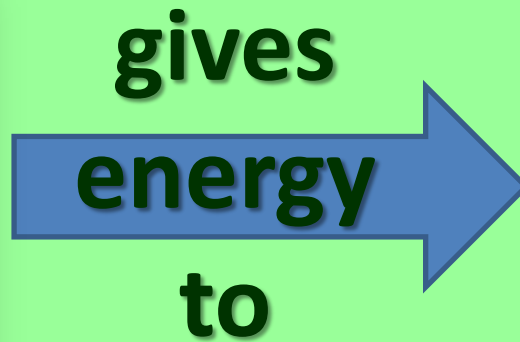


# The flow of energy



**deer**

**consumer**



**mountain lion**

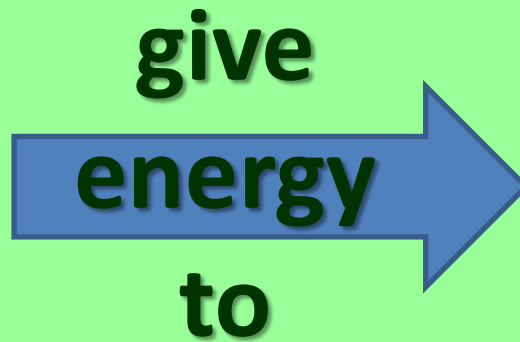
**consumer**

# The flow of energy



**seeds**

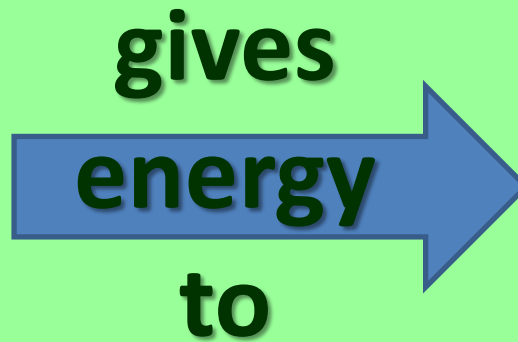
**producer**



**squirrel**

**consumer**

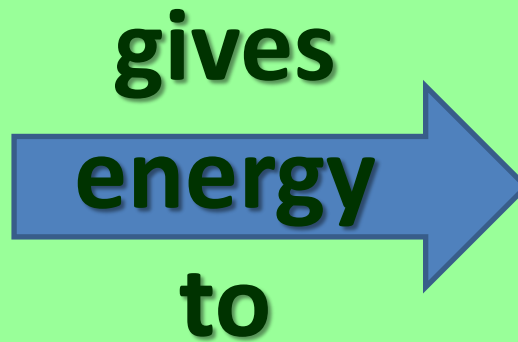
# The flow of energy



**squirrel**  
**consumer**

**fox**  
**consumer**

# The flow of energy



**squirrel**  
**consumer**

**eagle**  
**consumer**

**The End**

## Food Chains – The Flow of Energy – Sources

[http://www.kuukahvila.com/gallery/albums/userpics/Alien\\_Sun.jpg](http://www.kuukahvila.com/gallery/albums/userpics/Alien_Sun.jpg)  
<http://www.learnnc.org/lp/media/uploads/2010/06/waterysunset.jpg>  
<http://tearmatt.files.wordpress.com/2012/09/earth-and-sun.jpg>  
<http://i.bnet.com/blogs/sunlight.jpg>  
[http://www.upphotos.net/wallpapers/2013/07/Conew\\_Beautiful-Sunlight-Wide-2048x2048.jpg](http://www.upphotos.net/wallpapers/2013/07/Conew_Beautiful-Sunlight-Wide-2048x2048.jpg)  
<http://newscenter.lbl.gov/wp-content/uploads/Miscanthus-sun-Web.jpg>  
[http://climate.nasa.gov/system/news\\_items/main\\_images/Artificial-photosynthesis\\_main\\_743px.jpg](http://climate.nasa.gov/system/news_items/main_images/Artificial-photosynthesis_main_743px.jpg)  
<http://images.wisegeek.com/potato-farm.jpg>  
<http://www.edplace.com/userfiles/image/leaves%20and%20sun.jpg>  
[http://www.mechanicalengineeringblog.com/wp-content/uploads/2011/04/01Photosynthesisbasicsoperationoxygenreleasehydrogensplits\\_thumb.jpg](http://www.mechanicalengineeringblog.com/wp-content/uploads/2011/04/01Photosynthesisbasicsoperationoxygenreleasehydrogensplits_thumb.jpg)  
<http://www.photo-dictionary.com/photofiles/list/1115/9194corn.jpg>  
[http://sweetwater-organic.org/wp-content/uploads/2010/09/V\\_Broccoli\\_BlueWind.jpg](http://sweetwater-organic.org/wp-content/uploads/2010/09/V_Broccoli_BlueWind.jpg)  
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<http://secretseedsociety.com/wp-content/uploads/2010/04/earthworms.jpg>  
[http://geocodna.files.wordpress.com/2012/11/big\\_b92d076d22f682d39fc3f404c75bf30f8d68647b.jpg](http://geocodna.files.wordpress.com/2012/11/big_b92d076d22f682d39fc3f404c75bf30f8d68647b.jpg)  
<http://www.wallpaperup.com/uploads/wallpapers/2012/12/27/26662/a6b949d3b8efd7ab35d733b86318519a.jpg>  
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<http://wbrower.net/OBB/WildLife/MAMMALS/raccoon.jpg>  
<http://15pictures.com/wp-content/gallery/15-pictures-owls/owls-3.jpg>  
<http://eschooltoday.com/ecosystems/images/basic-food-web.jpg>  
<http://king.portlandschools.org/files/houses/y2/animalmaineia/files/species/atoadap/foodweb/foodwebpic2.gif>  
<http://www.cheekymonkeyresources.co.uk/cmrimages/weblinks/topics/science/nocturnal/Dormouse.jpg>  
[http://northshorekid.com/sites/default/files/imagecache/post\\_photo/events/night\\_creatures\\_at\\_ravenswood\\_park.jpg](http://northshorekid.com/sites/default/files/imagecache/post_photo/events/night_creatures_at_ravenswood_park.jpg)  
<http://www.colourbox.com/preview/2232363-768391-deer-eating-grass-on-the-meadow.jpg>  
<http://4.bp.blogspot.com/-jEwLoAO26k/TV-Ml8lklzl/AAAAAAAAA14/YcPLkbSKd7M/s1600/cougar-picture.jpg>  
<http://www.statesymbolsusa.org/IMAGES/Kentucky/squirrel-gray.jpg>  
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<http://www.takefiveaday.com/wp-content/uploads/2009/10/Squirrel-Eagle.jpg>