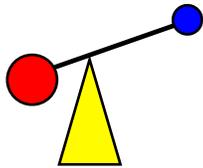


# WORCESTER ART MUSEUM



## Earth Science *Balance in Nature and Art*



In this lesson we will learn about ecosystem **balance** and how balance is important in art too!

Ecosystems include more than the animals that live there. There are living things and non-living things in ecosystems. A living thing like a tree or squirrel is **biotic**. Non-living things like soil, water, or dead leaves, are **abiotic**. What other examples of biotic or abiotic things can you think of?

Things that are abiotic are just as important as the things that are biotic. A deer, which is biotic, needs to drink from a pond, which is abiotic. An ant colony (biotic) needs the soil (abiotic) to build its home underground. Even organisms that have died are important, When something dies, the good things they are made of will return to the ground to be used by other living things - natural recycling. For example, a mushroom will be able to grow very well on a fallen tree, recycling the energy that was originally in the tree. When an organism dies and begins to return to the Earth, that is called decomposition, and there are many different biotic **organisms** that help with decomposition.

Even **bacteria**, which are itty-bitty biotic organisms, are essential to a happy ecosystem. These aren't the same kind of bacteria that might make you sick--there are many different kinds! There are friendly bacteria in your body, and in the soil outside too. Bacteria in the dirt can help break down bad chemicals, or help create good food for plants.

Can you see anything biotic in this image?



Animals and Birds in a Landscape  
1680-1700, Central Indian/Deccan  
1985.316

**Abiotic** - Not living.

**Bacteria** - Small single-cell organisms seen with a microscope. They live in many environments and do a wide variety of things, from help us digest our food to break down matter in soil. Some can make us sick.

**Balance** - Spreading out items evenly or equally to create a steady position or to offset the action of one thing against another so no drastic changes occur.

**Biotic** - A living organism that eats, grows, and reproduces.

**Equilibrium** - A state where there is little overall change.

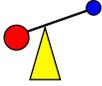
**Organism** - AN individual animal, plant, or single celled life form.

### Vocabulary



In WAM's previous Earth Science lesson, **We're All Homebodies**, we learned a little about ecosystems. Refer back to that lesson if you run into any questions!

# WORCESTER ART MUSEUM



## *Balance in Nature*



[Linear B, 2001, Tony Feher, 2004.30](#)

**Artists have often used scrap, discarded, or worn materials.**

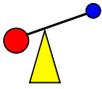
*Linear B* (above) was created with reused soda bottles, rope, and chain. The piece to the right, titled *Robbert Goddard, 1995*, was created with old box televisions, radios and other new and reclaimed materials.

What can ***you*** make out of items that might otherwise be discarded?



[Robert Goddard, 1995, 1995, Nam June Paik, 1997.108](#)

# WORCESTER ART MUSEUM



## *Balance in Art*



We've looked at ecosystems, but what about ourselves? There are a couple of ways we can observe balance in our own lives. One example is balancing our weight when we stick our arms out and carefully put one foot in front of the other on a balance beam. Or, we could think about the balance inside our bodies: when we drink water, we're balancing the water we drink when we sweat or go to the bathroom.

[Le Sabotier dedans la Dance \(The Sabotier\)](#),  
17th c. French 1982.49.

In all of these cases, things are in **equilibrium**, which means nothing ever gets to be too much or too little.

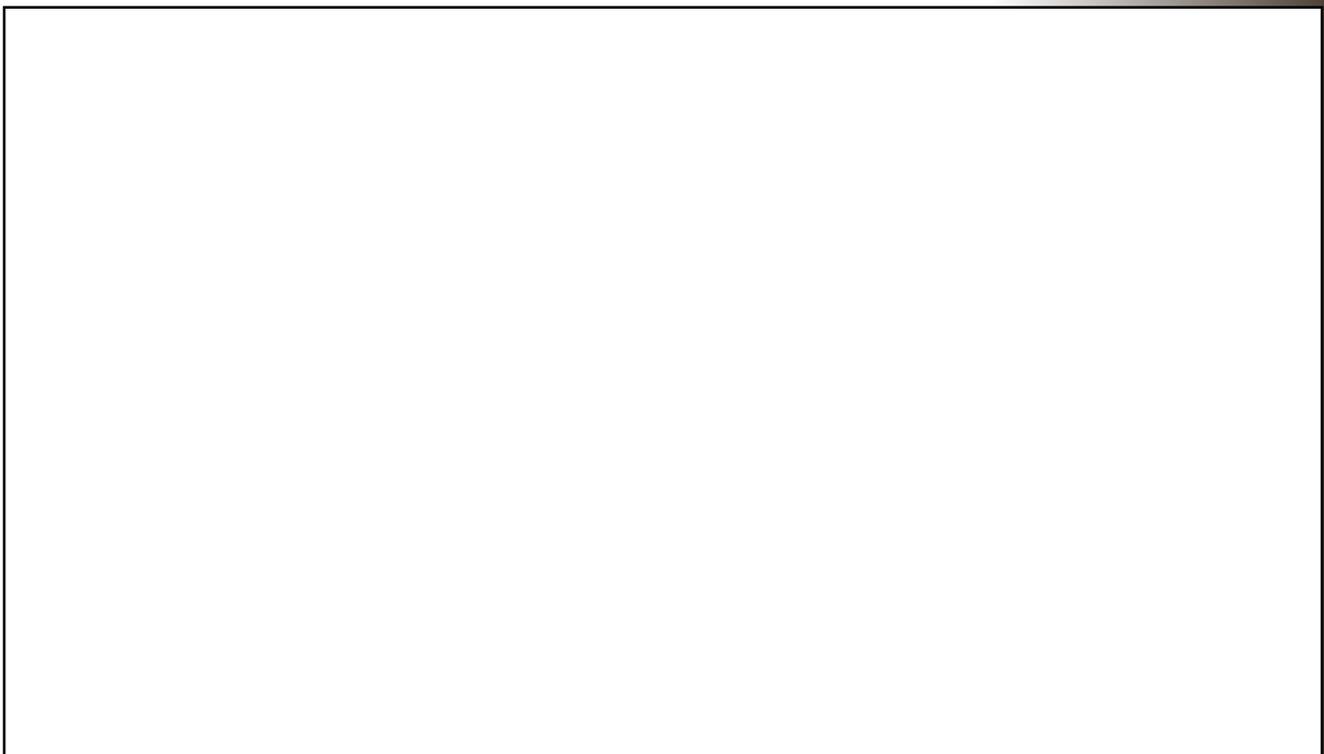
**We can use this concept visually in artwork!**

There are many ways to create balance in artwork! Although we often think of symmetry (being the same on one side as the other) when we think of balance, there are many ways to create balance in art; warm colors balance cool colors, many small shapes balance a large shape, thick lines balance thin lines, dark can balance light.

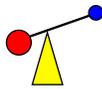


[Red, Yellow, and White Discs](#)  
1959, Alexander Calder, standing mobile

## Draw your own balanced artwork!



# WORCESTER ART MUSEUM



## Create : Symmetrical Name Art



Today we will be creating our own mobiles! A mobile is a type of sculpture that uses balance to stay in its form. All the pieces of a mobile balance each other out..... Just like in an ecosystem!

### Supplies

- 3 to 4 lightweight twigs, no longer than 15 inches
- Sturdy string or yarn
- Construction paper
- Scissors
- Pencil or marker

**Note:** This project will require some balancing skills! For each of your twigs, you will need to find its balance point, which is exactly where to hang it from to get it to hang straight across, like this:



The balance point, like in this example, may not be in the direct center of the twig, it may be closer to one side depending on how uneven the twig is.

### Directions

1. Decide which twigs you'd like at the bottom and top of your mobile. You should have two at the bottom, one in the middle, and one at the top. Lay them out on the ground to remember the order.
2. If you would like smaller embellishments, cut out construction paper shapes about 2-3 inches in size to hang from your mobile.
3. Poke a small hole in each shape where you'd like it to hang from. Attach string at the hole.
4. Hang your smaller shapes from the twigs you choose. Laying them out on the floor first may help choose how far down certain pieces should hang so as not to bump into other pieces below them.
5. Now we will assemble our mobile--we will work from the bottom to top.. Choose the two twigs you'd like at the **BOTTOM** of your mobile. Take a string and loosely tie it around one of the bottom-tier twigs, without securing it yet. Hold up the string and let the twig hang. If it is leaning down on one side, shift where the string is tied toward the downward-leaning side a little at a time until the twig hangs straight across. Sometimes a very little shift makes a big difference!
6. Once you've found the balance point, tie the string tightly to secure it, then repeat this with the second bottom-tier twig.
7. Take one bottom-tier twig, and tie the other end of its string to one side of the middle-tier twig that it will hang from. Tie the second bottom-tier twig to the other side of the middle-tier twig. You may want to make one side hang lower than the other, in order to avoid the twigs bumping one another.
8. Using a loose tie, tie a string around the middle-tier twig to find its balance point. When it hangs straight across, you've found your balance point. Remember, it may not be perfectly in the center!
9. Now take the other end of your middle-tier twig's string, and tie it to the top-tier twig. You could tie it anywhere, but closer to the center will probably make your last step easier.
10. Use the same loose-tie method to find the balance point of the mobile from the top-tier twig: tie a string loosely around the top-tier twig and shift it left or right until it hangs straight across, then secure it tightly once you've found the balance point.
11. Tie a loop in the end of that string, and hang your mobile!

