

Mall-cology - Teaching Ecological Relationships Romantically (Science 10)

One of the truly challenging aspects of teaching is the need to make the lesson material we are presenting relevant to our listeners. Imaginative Education begins with the teacher. I often find that we have to struggle to be imaginative long before we can engage the imaginations of the students before us. Start with the **narrative** behind the lesson. In this case, what is the story of **ecology**? The key is to **humanize** the topic by finding its emotional significance and relating it to everyday things in our/their world. If you pay attention to what your students are talking about before class, you might pick up a few clues. **Let's go shopping shall we?**

I begin teaching the concepts behind **ecological relationships** like **sybiosis** by taking the students on an imaginary trip to the local mall. The **story** of the mall is the story of a place where competition for limited resources becomes a struggle for survival (Can you say 'Darwin'?). A variety of stores actively compete for each shopper's money. Those that are successful gain profit and flourish; those that are unsuccessful fail and are replaced with new shops. Since **competition** and **survival** are linked in biology, this provides a nice jumping off point for presenting the concept of **evolution**. This **change of context** also allows students to look at their world through a different lens. The stores (**producers**) and sales people (**predators**) in the mall establish relationships with the shoppers (**consumers & prey**) based upon how they sell their wares and what they get paid for.

- The mall is a **biome** with specific and describable characteristics; make a **collection** of these.
 - Ask your students if there are different kinds of malls.
 - Compare and contrast their characteristics:
 - How are they the same? How are they different? Make a list.
- Have the students list for you the **biotic** and **abiotic** factors that make up the mall. It is an interesting **collection**!
- If they are a good group, ask them to tell you how each of these factors might influence the **consumers** (shoppers) when they visit the mall to shop (Also an interesting list to collect!)

You might take a moment and discuss which characteristics make a good shopper, a good salesperson, or a good store. What are the **heroic qualities** that we might associate with each of these groups? This may seem a little farfetched but it challenges the students' imaginations, especially if we are putting them into this biome.

Heroic qualities might include:

- **Shoppers** – enthusiastic, determined, frugal, lavish, impatient, choosy etc.
- **Salespeople** – friendly, stealthy, persuasive, deceptive, distracting, compliant etc.

In addition, they will come to recognize these qualities in other organisms, like the various animals that inhabit other biomes. This leads into a nice discussion of **adaptations**. What heroic traits do animals that have adapted to a particular biome display? Why are they successful?

Moving on I tell the students that they are shopping for special clothes for a school's formal dance or graduation ceremony. This helps to focus the discussion and gives everybody something to comment on. Shopping is just like hunting "... from a certain point of view." (Obi Wan Kenobi lives!). You are trying to limit your spending while someone else is trying to pry the money from your wallet. There are all kinds of different strategies that you will be presented with. Ready?

Symbiosis; Mutualism - First, we go looking for a dress (tuxedo, etc.). The dressmaker has all of the dresses on display at her store. You walk in and she will greet you, ask you what you are looking for, and then spend time picking out the dress(s) that are right for you. She wants to ensure that you buy a dress so she invests a lot of time in your shopping experience. The more expensive the dress she can convince you to buy the more profit she receives as a benefit. In addition, other people seeing you in her gown will promote her business, encourage others to come to her shop and possibly increase her profits. You get a great deal on a beautiful, well-made dress that makes you look stunning, turns your friends green with envy, and gives you great value for your money. The quality has to be high otherwise you will never go back or recommend her shop to your friends. This is a true **symbiotic relationship** because both salesperson and shopper rely heavily on each other and benefit from the interaction.

A variant on mutualism relates to commissioned sales people. They are highly motivated to make a sale because the more they sell, the more money they get paid. The more you spend the more you buy, and so on. Shoes, hats, and high end accessories are often sold this way.

Commensalism - Then we go looking for shoes (If your class is sharp you can lead them to this obvious next step, i.e. once we have the dress we need....?). The salesperson gets paid by the hour. It does not matter to him/her whether you buy shoes because they receive a salary anyway. You benefit by finding the shoes you want. Despite the fact you both gain something, the salesperson receives what they would normally get anyway. There is no real extra benefit beyond that for them making a sale. You on the other hand have found and purchased the perfect pair(s) of shoes for your dress (fist pump, 'Yes!').

Parasitism- And how do we pay for all of this? Credit cards naturally. They are small and hide quietly in our purses/wallets so we often forget that they are there. We pull them out to make purchases but never actually see any money being paid so we tend to forget about our expenditures. In the meantime, the purchases on our invisible credit card companies quietly charge use interest (at 19%!). We are blissfully unaware until we get our credit card statement. Suddenly we are confronted with a larger than expected/imagined/ remembered bill, and it is growing! Our credit cards have been slowly, quietly burrowing into our accounts and chewing up

our money. We do not benefit from this at all. In fact we are harmed by the money lost, and the additional interest we are required to pay. In addition, if we do not pay there is more interest on the interest and a chance that our credit rating will fall. We might even lose our card because we cannot pay our debts. We then have less money to spend on other things. In the end, we lose all of our money while the credit card companies benefit getting their money back as well as a healthy amount of interest. This is how **parasites** operate: quietly hiding and destroying/consuming the host to further their **survival**.

Predator & Prey – Next we go to a large department store, like Walmart, Target, or Eatons to look for underwear (or costume jewelry). Naturally there is a large selection to choose from. As we enter a salesperson takes notice of us as we enter the store. They note our direction and try to guess at our intent. As we move into the underwear section they move in for the sale (kill). They are for all intents and purposes, stalking us to make a sale in the same way that a **predator** like a lion stalks its **prey**, the wildebeest, to make a kill.

Sometimes salespeople hunt in **packs**. The first person separates you from the crowd and asks about your specific needs. If they cannot assist you they will find an employee who is an underwear specialist. When you need to try the garment on or place a special order a supervisor is located who can unlock the dressing room door or phone another store (and salesperson) to ask if they have what you want in stock. Then you are directed to a cashier to pay for your purchase. A pack of **predators** (salespeople) have successfully hunted you and separated you from you from you money (the **prey**). Ask your students to discuss the advantages of a single predator over a pack, (i.e. *packs of predators may have more successful kills but must share the food around to the group*). With more help and encouragement you will more likely buy something. The store makes a profit but must pay more for additional staff. Still, the “*staff pack*” may have more success because they are more successful at making your shopping easier.

As an aside, ask your students what kind of ‘hunting’ strategies might salespeople employ that real predators use as well? Can you come up with any real life examples?

Your students will never look at shopping the same way again!