A List of Reasoning Strategies

**Induction:** logical reasoning which involves adding up bits of truth, facts, phenomena to make a generalization based on what you have observed. You do not begin with a premise or any assumptions; instead, you build towards a hypothesis.

Ex: You are asked to buy some apples at the store, but you've just moved from another part of the world, and you've never seen, tasted, smelled, touched, or heard apples, not even pictures or audio recordings of them. You are told that an apple is a fruit, that it is red, sometimes reddish and greenish, and that the store definitely has apples. You go to the store, and you see bananas, which you know to be fruit. You observe that fresh fruit seems to be stored in one area of the store. You look near the bananas and see what you know to be mangos, which are fruits and can also be reddish and greenish. You've never heard them called "apples" before, but they could be. However, you also see other fruits near the mangos that are red, and another section, right next to them, which contains reddish-greenish fruits of the same shape. At this point, you also reason that your insecurity about asking a clerk as to which are apples has little basis, since you are new to the region and will have to ask for help sometimes. You explain this to the clerk, and ask her which fruits are apples. She seems trustworthy, and, plus, she points to the fruits that you have already suspected to be apples.

Some fallacies associated with errors in induction: Hasty Generalization (ex: stereotyping), Non Sequitur, Begging the Question, Post Hoc Ergo Propter Hoc (Doubtful Cause), Slippery Slope, Red Herring

To avoid errors in induction, make sure you have a sufficient number of samples, that you have collected enough evidence. In addition, make sure your evidence is reliable, that you've represented populations fairly and avoided "leaps" as you've gathered your evidence, assuming nothing.

**Deduction:** logical reasoning which involves accepting a general truth or premise, and then reasoning particulars based on this accepted premise. If we know general guidelines, we can find examples. One way to exemplify deduction is through a syllogism:

Major premise: All apples are red.
Minor premise: This fruit is an apple.
Conclusion: This fruit is red.

But I swear it looks like it is green!) When analyzing deductive arguments, be sure to look for contradictions, like, in the example above, the fact that some apples are green, others yellow. In addition, when one is applying deduction, he or she may apply the general principle inconsistently (Abortion is the murder of an innocent person, but it should be allowed in cases of rape, incest, or grave danger to the mother’s life.). There could also be omissions or oversights (A: Don’t see that movie – the acting is horrible! B: Didn’t someone in it win an Oscar for Best Supporting Actress? A: Yeah, but the lead actor ruins it!). In addition, beware of oversimplifications (A: "Birds of a feather flock together." B: Does that always apply to human beings?)

Some fallacies associated with errors in deduction: Missing the Point, Appeal to Authority, Straw Man, Overgeneralization

**Categorization:** We’re all aware of systems of meaning: classification, definition, language, etc. We understand the world, at least in part, by dividing it up, comparing and contrasting various elements.

Ex: A: Do you prefer Granny Smith, Red Delicious, Golden Delicious, or Fuji Apples?
B: Can we talk about apples that aren’t grown in Washington?

Some fallacies associated with errors in categorization: Either/Or Fallacy (False Dichotomy), Faulty Definition (Equivocation)

**Analogy:** Sometimes an argument can be strengthened by comparing two things that are superficially different but not essentially different.

Ex: Our economy right now is like an apple grove producing diminishing quantities and reduced quality of apples. Some of us are taking responsibility, trying to amend the soil, making sure the trees are getting enough water and are situated right. Others of us are laying around in the shade and pointing out our mistakes.

Be careful with analogies – they should usually be used to clarify, to shed light on an argument, not to prove a claim!

Some fallacies associated with errors in analogy: False Analogy, Poisoning the Well

**Authorization:** At times, it is appropriate to refer to an authority on an issue to strengthen your own argument.

Ex: Steven Jackson, who has spent the last twenty years as a successful organic apple farmer....

Some fallacies associated with errors in authorization: Appeal to Authority, Ad Hominem

**Plea:** This term encompasses Aristotle’s appeals to pathos and also ethos: asking your reader for compassion, ethical responsibility, security, comfort, emotional well-being as he or she evaluates your position.

Ex: No one wants to bite into an apple with a soggy texture or find a worm or become sick because the fruit has spoiled.

Some fallacies associated with erroneous pleas: Ad Populum, Bandwagon, Appeal to Pity, Flattery, Shock Value