

Dear TIES Teachers,

Below is a terrific ice-breaker contributed by one of our TIES Teacher Corps Members. It is an effective way to begin your school year's evolution unit. This ice-breaker also fits into the important strategy of getting the students to really engage and think before content is delivered.

1. Laminate the papers attached.
2. Cut the little sentences into individual pieces and put them in a baggy.
3. Pass out the little bits of paper and the Fact or Fiction Column handout.
4. Ask the students to place the little rectangles with the sentences under the Fact column or Fiction column. If they can't decide, the rectangle goes in between the columns, on the line.
5. The class discusses their ideas.
6. Finally, hand out the paper titled, "ALL are myths! – go over each one and discuss why they are a myth." All of them are myths!!

This activity was modified using info from the National Center for Science Education (NCSE). The NCSE is featured on our TIES Online Learning Page under the tab, "Addressing your Concerns as Science Teachers." It's a good website to check out if your students are anxious about learning evolution.

There are no transitional fossils.

Organisms adapt to their environment.

Biologists "believe" in evolution.

Humans evolved from monkeys.

Charles Darwin developed the theory of evolution

Evolution is JUST a theory.

If evolution can be disproven, creationism must be true.

Carbon dating is not accurate; therefore the age of the Earth cannot be determined.

According to the 2nd Law of Thermodynamics order cannot come from disorder (entropy), so evolution is a false idea.

Only atheists accept the Theory of Evolution.

There is scientific evidence that dinosaurs and humans coexisted.

No one has ever seen evolution happen.

Disagreements among evolutionary biologists show how little solid science supports the theory of evolution.

Creationism is a valid scientific theory and should be presented with evolution.

Fact

Fiction

Myth	Debunked
1. Charles Darwin developed the theory of evolution	The theory of evolution existed before Darwin; it was Darwin's Theory of Evolution by Natural Selection that became widely accepted.
2. Living things adapt to their environment	As a whole, living things are adapted to their environment. Individuals are unchanging, they either live or die based on the traits they are born with.
3. Biologists "believe" in evolution.	Science is not based on belief. The theory of evolution provides a model for scientists to understand the relationships between organisms on the planet.
4. Monkeys will eventually become human.	There are many species of primates and all are adapted to their environment. A chimpanzee would not turn into a human over time anymore than a cheetah would turn into a lion (or vice versa)
5. Evolution is JUST a theory.	Saying that it is "just" a theory implies that it is a guess, or that its not well supported. There is much evidence to support the theory of evolution, as well as direct observation of species change.
6. Only atheists accept the Theory of Evolution.	Scientists of many religions across the world accept evolution, and do not find it incompatible with their faith.
7. If evolution is disproven, creationism must be true.	A problem with logic (disconfirming evidence). Even if you disproved evolution, you would have to develop and support another model of organism diversity. Disproving one, doesn't prove the other.
8. No one has ever seen evolution happen.	In organisms that reproduce quickly (like bacteria) changes in species can be directly observed, such as resistances to antibiotics.
9. Order cannot come from disorder, so evolution is false.	Many instances in nature show molecules and substance organizing, such requires energy. The sun provides the energy that ultimately fuels all of life's processes.
10. There is evidence that dinosaurs lived with humans	There is no evidence that suggests humans and dinosaurs lived at the same time.
11. Scientists regularly debate that evolution occurs.	Scientists debate elements of evolution, relationships between organisms, and fossils. The only place the evolution debate really happens is in the social settings.
12. Creationism is a valid scientific theory and should be presented with evolution.	Creationism violates the scientific principle of natural causality.
13. There are no transition fossils.	Museums are filled with fossils that show intermediate species.
14. Carbon dating is not accurate, therefore the age of the earth cannot be determined.	Carbon dating is one of many methods used to date the earth. Taken as a whole, the evidence is overwhelming that the earth is very old.