

Diascopic-Science Approach to Teaching Science in GE

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1. What is NOT General-Educaton Science?

- GE science \neq popular science
- GE science \neq science with no mathematics
- GE science \neq 1000-level major science

2. We propose: GE Science = Diascopic Science



Students read science texts and discuss enduring questions under teacher's guidance.

3. Examples of Enduring Questions

They are also called "Big Questions".

Examples:

- Is science going towards the truth?
- What do I mean when I say "I understand"?
- Do you accept that "life is just a matter of physics and chemistry"?
- Do I have a soul?

4. Implementation in "In Dialogue with Nature"

In this compulsory GE course, students read an excerpt from a science classic every week. These classics include

- Isaac Newton, *Principia*
- Charles Darwin, *On the Origin of Species*
- Rachel Carson, *Silent Spring*
- Euclid, *Elements*

We connect these texts to enduring questions.

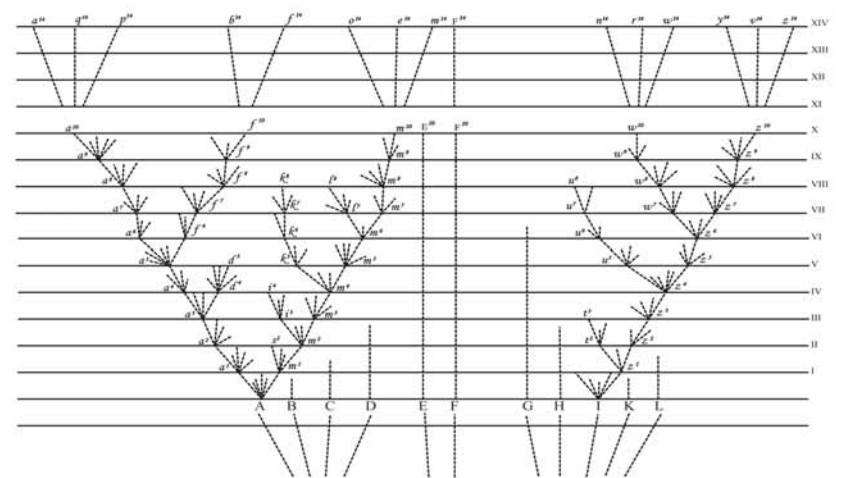
Newton's *Principia*

Further, it is in this same sense that I call attractions and impulses accelerative and motive. Moreover, I use interchangeably and indiscriminately words signifying attraction, impulse, or any sort of propensity toward a center, **considering these forces not from a physical but only from a mathematical point of view.**

Therefore [...]

- What is our understanding of the universe if even Newton only considered a mathematical point of view?
- If everything follows the physical laws, how do we understand free will?

On the Origin of Species



- Why did Darwin use symbols in the Tree of Life? [*Universality of natural laws*]
- What similarities can you find between how Darwin explained the world of life and how Newton explained the physical universe? [*Both assumed that there exist several basic principles.*]
- Any conflict between science and religion?

5. Conclusion

	Popular science	Diascopic science	Technical science
Scientific concepts	Explained	Explained	Explained
Technical details	Avoided	Avoided	Important
Methodology	Described	Described and reflected on	Assumed
Discussion of relations between science and other fields	To arouse the reader's interest in science	To acquire an understanding of what science implies	Rare
Target	Common readers	All people	Researchers/major students

Diascopic science: welcomed by both science majors and non-majors.