

# Magic Magnetic Fluid Activity – Fringe Summary

Read the summary to students as an introduction to the *Fringe* television series.

*“Fringe follows the casework of the Fringe Division, a Joint Federal Task Force supported primarily by the Federal Bureau of Investigation, which includes Agent Olivia Dunham; Dr. Walter Bishop, the archetypal mad scientist; and Peter Bishop, Walter's estranged son and jack-of-all-trades. They are supported by Phillip Broyles, the force's director, and Agent Astrid Farnsworth, who assists Walter in laboratory research. The Fringe Division investigates cases relating to fringe science, ranging from transhumanism experiments gone wrong to the prospect of a destructive technological singularity to a possible collision of two parallel universes. The Fringe Division's work often intersects with advanced biotechnology developed by a company called Massive Dynamic, founded by Walter's former partner, Dr. William Bell, and run by their common friend, Nina Sharp. The team is also watched silently by a group of bald, pale men who are called “Observers”.” [1]*

For instructional purposes “Fringe Science” incorporates many classical and advanced applications of science and engineering. The list below contains examples of different science/engineering applications corresponding specific episodes. Additionally, engineering discipline(s) are connected to each application providing examples of how various “Fringe Science” topics relate to *real* engineers.

Instructors need to read the application and ask the students what they think each application may mean and what branch of engineering might make use of the application. Repeat this sequence for all or selected number from the list below. Keep in mind this is an introduction to a 10 minute showing of the video clip pertaining to the activity and should only take 5 minutes.

*NOTE: Episode names are included for instructors to download clips showing how Fringe incorporates this application. This can be an activity extension if class times permits, but are not required.*

## **Listing format: Application (“Episode Name”) – Engineering Discipline [2]**

- 1) DNA (“Novation”) – Biochemical Engineering
- 2) Electromagnets (“Subject 9”)- Mechanical, Electrical, Materials Engineering
- 3) Combustion (“And Those We’ve Left Behind”) – Chemical, Mechanical, Materials Engineering
- 4) Reverse Engineering (“The Day We Died”) – All Engineering Branches
- 5) Spectroscopy (“6B”) – Chemical, Materials Engineering
- 6) Pharmacology (“The Firefly”) – Medical Based Chemistry
- 7) Protein Modeling (“Marionette”) – Biochemical Engineer
- 8) Bioelectricity (“The Man From The Other Side”) – Biochemical Engineer
- 9) The Scientific Method (“Northwest Passage”) – All Engineering Branches

## Definitions

DNA	Deoxyribonucleic acid
Electromagnets	A soft metal core made into a magnet by the passage of electric current through a surrounding coil.
Combustion light.	The rapid chemical combination of a substance with oxygen, producing heat and light.
Reverse Engineering	The reproduction of another manufacturer's product following detailed examination of its construction or composition.
Spectroscopy	The branch of science concerned with the investigation and measurement of spectra produced when matter interacts with or emits electromagnetic waves.
Pharmacology	The branch of medicine concerned with the uses, effects and modes of action of drugs.
Protein Modeling	Computational description and simulation of protein structures.
Bioelectricity	Electric phenomena in animals or plants.
The Scientific Method	A method of research in which a problem is identified, relevant data are gathered, a hypothesis is formulated from these data, and the hypothesis is empirically tested.
Transhumanism	An international intellectual and cultural movement supporting the use of science and technology to improve human intellectual, physical and psychological capacities.
Singularity	A point in space and time at which gravitational forces cause matter to have infinite density and infinitesimal volume, and space and time to become infinitely distorted (e.g., black hole).
Parallel Universe	A theory that there is a mirror universe involving two equal but opposite beings where decisions made by <i>you</i> are opposite of those made by the <i>alternate you</i> .

## References

- [1] *Fringe* (TV series), Wiki, [http://en.wikipedia.org/wiki/Fringe\\_\(TV\\_series\)](http://en.wikipedia.org/wiki/Fringe_(TV_series))
- [2] Science of Fringe, <http://www.fox.com/fringe/fringe-science>