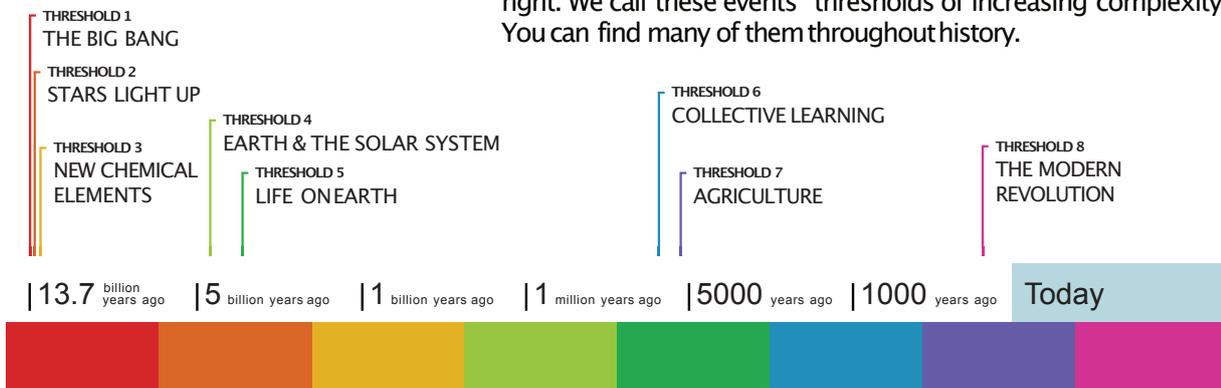


THRESHOLDS

OF INCREASING COMPLEXITY

Increasing complexity is one of big history's main themes. That's because throughout the Universe's long history, more and more complex things have appeared in some surprising ways. Each new form built upon existing ones when conditions were just right. We call these events "thresholds of increasing complexity." You can find many of them throughout history.



INGREDIENTS

All new forms of complexity build upon previous forms. This section identifies the main components that had to exist at a particular threshold in order to create something entirely new.



GOLDBLOCKS CONDITIONS

Having the right ingredients isn't enough to create new forms of complexity. Conditions also need to be "just right" to trigger the change. This section identifies what those conditions were.



NEW COMPLEXITY

Each threshold results in entirely new things that are more complex than anything before. This section identifies what those are. They'll always have more diverse components that, when arranged in precise ways, contain "emergent" properties unlike any others in existence.

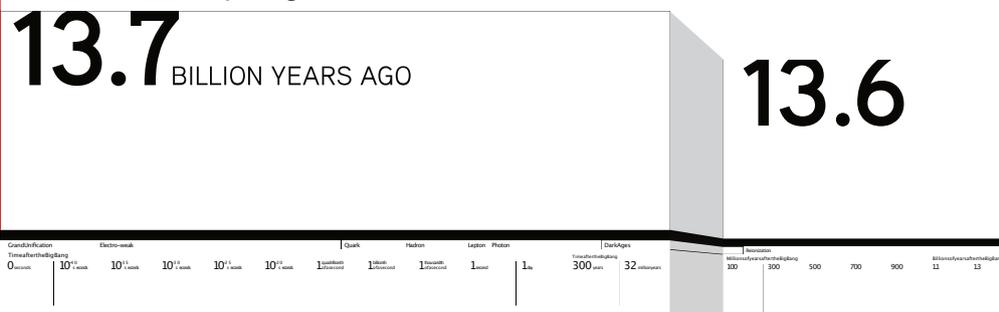
THRESHOLD

THE BIG BANG

The Big Bang remains a mystery in many ways. We have a lot of evidence for what happened just after the event but can only guess what existed before it, if anything, and what conditions made it possible. Even so, we know the Big Bang is an important threshold because it created time, space, and the "building blocks" for everything in the known Universe.

Vocabulary :

Thresholds (Seuil);
Goldilocks (Juste les bonnes conditions - référence à l'histoire "boucle d'or et les trois ours")



INGREDIENTS

We can only speculate



GOLDBLOCKS CONDITIONS

We can only speculate



NEW COMPLEXITY

The Universe
Time and space
Different forms of energy (including gravity and electromagnetism)
Different forms of matter (including quarks and electrons)

Questions on Threshold 1 :

1. What was created after the Big Bang ?
2. Which basic elements of the universe were created a few seconds after the Big Bang ?
3. Do we know everything about the Big Bang ? If not, write a few questions we don't have answers for.
4. Can you give a more precise timespan for this event ?
5. What are the ingredients of the modern revolution ?
6. In your opinion (and what you learned in your history lessons), give a few goldilocks conditions of the modern revolution.
7. What new complexity emerged from the modern revolution ? You can limit your ideas to things related to STEM (sciences, technology, engineering and mathematics)
8. What could be Threshold 9 ? (And the ingredients and goldilocks conditions)

On Threshold 8 : The Modern Revolution

4. Can you give a more precise timespan for this event ?
5. What are the ingredients of the modern revolution ?



You will now watch the intro of the TV Show “The Big Bang Theory”.

Make a list (in english of course) of all the elements you saw during the intro song :

How are they related to the title of the show ?

Try to find out to which period (or even date) they belong to.