

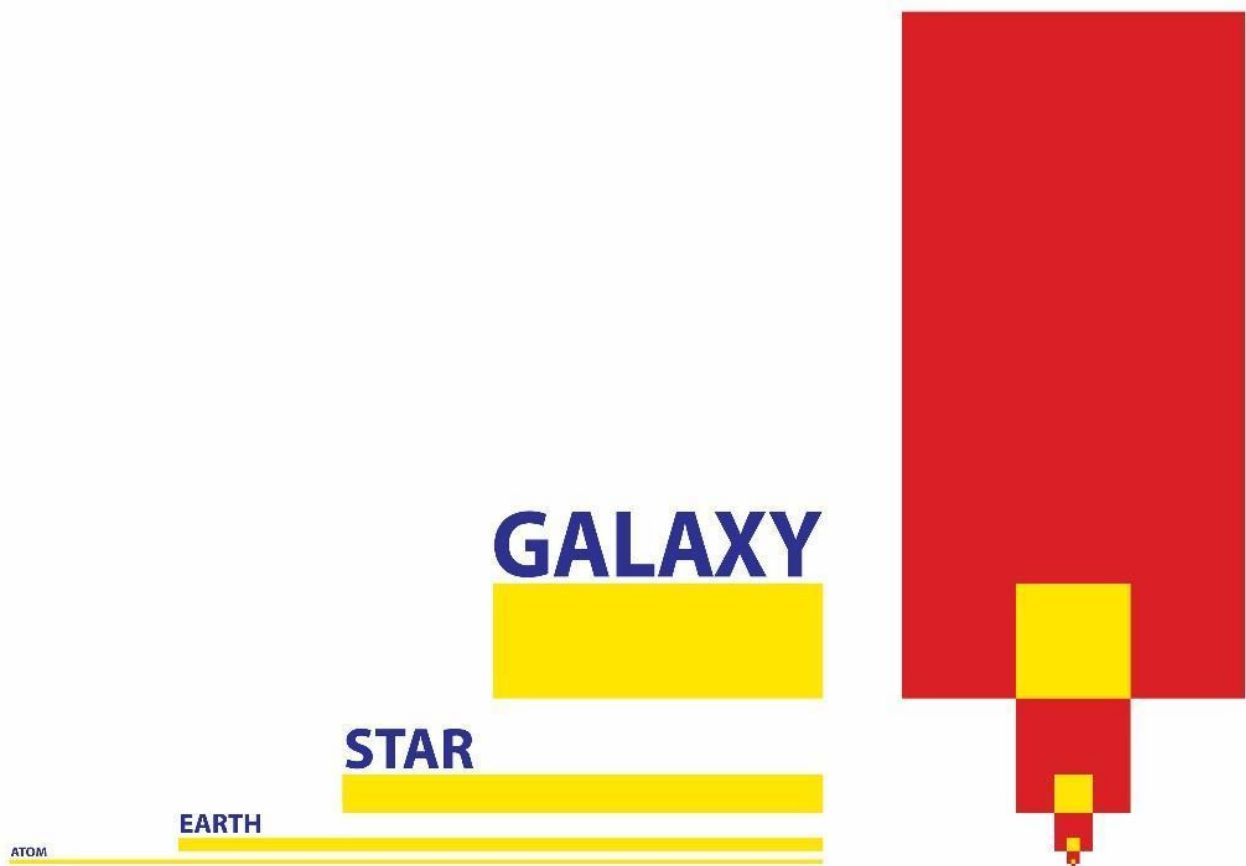
Good practices INTER_504BCD_EN

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Description of the problem / exercise: **Dimension Pencil**

The Dimension Pencil as an imaginary tool in the hand of an artist: According to Saxon with our dimension pencil, we can draw a line between the unshakeable Galaxies, on the surface of our roamable Earth and around the buzzing Atoms at the same time. This fantastic possibility may incite us to find our real place in the real universe. The question is how is it possible?



Let us travel into the world of elemental (atomic and subatomic) particles, explore all the possible ranges known so far, align them so that we take into account not only differences in size but in magnitude. How many such ranges exist, and at what depth and occasionally how thick should the tip of our Dimension Pencil be in order to leave a mark on the 'surface' of each elementary particle?

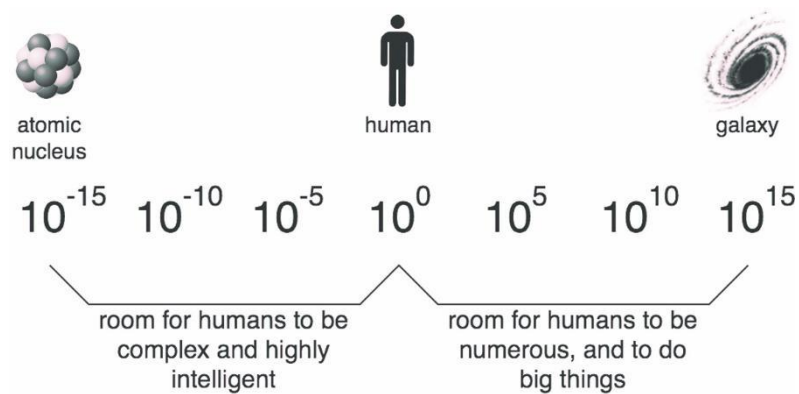


Figure: <https://www.gabrian.com/the-scale-of-universe/>

- *Why this exercise is good:* A series of questions draws attention to differences in the magnitude of the microcosm. Once answered, attention can also be directed to the macro worlds for the coverage of the entire universe, in the process of examining the orders of magnitude relative to each other.
- *Level of teacher training:* Subject teacher, primary school upper, secondary school
- *School subject (s):* Chemistry, mathematics, atomic physics, cosmology
- *Comments:* After the atomic world, the next step of the scale is not our material world on Earth, but our solar system can be:
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