

## Good practices SCIEN\_707C\_EN

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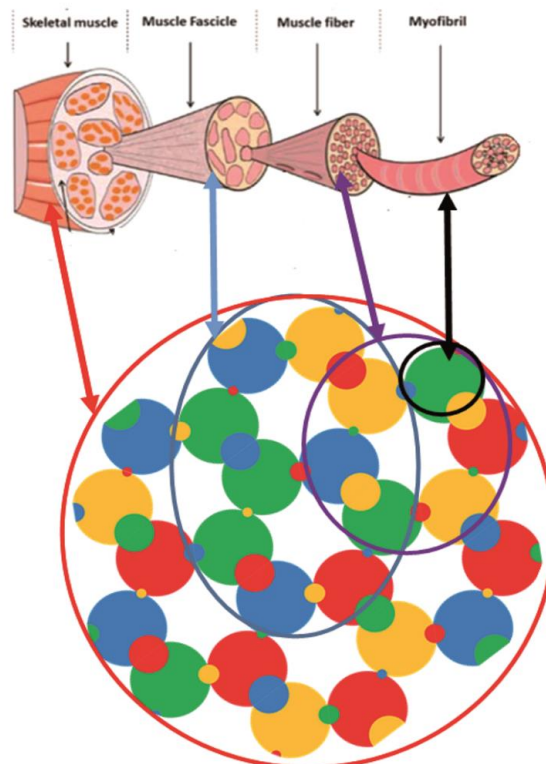
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Description of the problem / exercise: **Modeling muscles**

Task could be realized within the following steps:

Teachers provide to the students the following information: Skeletal muscle can be seen as a bundle of grouped tissue, connected into a complete whole. The smallest part of this tissue – the base of the working muscle – are the filaments actin and myosin. The filaments are grouped into myofibrils. Myofibrils are further grouped into muscle fibers, smaller muscle fibers are grouped into larger ones. Muscle fibers group themselves into bundles wrapped in connective tissue. A smaller muscle can consist of only a few bundles of fibers, while a larger muscle can consist of hundreds of bundles of fibers. The teacher should also provide to the students a schema that presents a skeletal muscle structure. Teachers can present this information in the form of printed materials which students should analyze or in the form of teacher presentations.

1. By using the Poly-Universe students create the structure of the skeletal muscle model.
2. Students present their models and explain them, with a clear indication of units in the skeletal muscle structure.
3. Students discuss the models and provide feedback to each other.



**Figure 1:** One possible solution for this task

- *Why this exercise is good:* During the working on this activity, students will gain the knowledge which is required to understand the structure of skeletal muscle. This activity allows the students to express their creativity and implement previous knowledge and experience during the learning process.
- *Level of teacher training:* Secondary school
- *School subject(s):* Biology, math, art
- *Comments:* Teachers can provide an additional task for gifted students, asking them to find fractals in the skeletal muscle structure as well as in their model. If necessary, teachers can adapt this task to students with learning difficulties by making a model for them and instructing them directly to make it by observing the model of the teacher or one of the classmates.