Task 1. Now it is autumn, and the leaves of some plants are turning red. But it is not the only reason why the leaves can turn red. In what cases we can see red leaves on the plants? Can red leaves benefit a plant? If yes, what benefits can they yield?

Task 2. Some multicellular organisms, for example beetles from Ptiliidae family, can be so small, that their size can be equal to the size of unicellular organisms, for example Paramecium caudatum. What prevents unicellular organisms from being big, let's say as big as a dog? Write as many reasons as you can and explain your answer.

Task 3. The environments with high salt concentration are not very favorable for the living organisms, however, some organisms learnt to live in such conditions. Why is high salt concentration bad for the living organisms? How can they adjust to it after all?

Task 4. Imagine that the aliens while exploring the Earth learnt to send here their tiny machines (as big as an average cell of our organism), that can find living creatures, get inside of them without any harm to their health and send data about their vital functions to the planet of those aliens. But each machine can't have more than six sensors. They got into a dog, a pigeon, a fly, a dandelion, an ashen and a Leccinum aurantiacum mushroom. With what physical and chemical sensors do you think should the aliens equip such a machine to distinguish this organisms as sure as possible? Which parameters should they measure and what differences would they find?

Task 5. How different animals from Crustacea taxon can use their legs?

Task 6. It is well known that many plant species, that for a long time have a stable low number of plants in their native region, can start reproducing and spreading much faster after getting to a new place. What do you think are the reasons for such a phenomenon?

We grade the answers as following. Points are given for correct answers only. The score is not reduced by incorrect answers. The total score depends on the points given for correct answers on each question and the student's grade.

Usually biology questions have several (sometimes many) correct answers. For each correct answer you can get 1, 2 or more points (the amount depends on question difficulty and answer evidence).

There are questions to which there is no uniquely correct answer. In this case, scores are given for any reasonable hypothesis.

If a student gives arguments for the answer, he'll get more points than without arguing.

In some tasks students are asked to provide examples; each correct example gives additional 0.5–1 point. Given examples should correspond to the question. For example, when asked about the luminous aquatic animals an example of "Firefly" will be ignored.

The same works for very homogeneous examples. If the question is about animals whose larvae and adults eat different food, examples of the "frog" and "toad" will be treated as homogeneous.

For every task you can get a few points, and even many (8–10). There is no upper limit. Unfortunately, often students give only one answer and get only 1 or 2 points. The amount of consistent arguments and correct examples given by a student is important. The volume of written text does not affect the score. Arguing on the questions that are not from the task won't give additional points. Only student work is graded. No points are given for texts copied from any literature or any other source or other students' works.