

Every task may be done by a student of any grade (tasks are not divided into groups by grade).

Task 1.

Name the birds which have adapted well to the life in big cities and can live there long and in big quantities. For each of the birds name the biological features (way of life, behavior, physiology, etc.) that enabled them to do so.

Task 2.

For many species we can easily distinguish between males and females. For example we don't mistake hen for a cock. On the other hand, there are species (for example, magpies) in which males and females are nearly indistinguishable in appearance. How do you think, why in some cases both genders look alike, and in other cases they don't? Prove your assumptions with examples.

Task 3.

Can plants have a body temperature (or temperature of its separate parts) that differs from the temperature of their environment? What would they need it for? In what ways could they achieve it?

Task 4.

Many creatures living in the water column can dive deeper or go up towards the surface. Name the structural features and physiological adaptations, that make it possible to control their buoyancy and provide examples of organisms for the ways listed.

Task 5.

Initially life existed in water, but over time living organisms inhabited land. However, some species came back to aquatic existence. In which big groups of species (phylum, class, order) did it happen? Which changes was it accompanied by? Explain your answer.

Task 6.

How can cells of multicellular organisms use flagella and cilia? What benefits can a cell, that has these organelles, get from using them? And the whole organism?

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.

Don't forget to **sign** your work (please, write the card number, your last name, school and grade) before **submitting** the work. You do not have to submit the sheet with the tasks. The tasks, their solutions and the results of the competition will be published at <http://turlom.olimpiada.ru> after November 20.