

## Biology Competition

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

1. In a dangerous situation animal's young and mature individual find themselves in an unequal condition. It is clear that baby animals are much more vulnerable than adults of the same species because babies have no experience in self-defense. However, at least a few of animal's young survive, grow up and become adults. What are the strategies animal species can use to help baby animals survive?
2. In the midland of Russia you can often see wild birds of prey hovering in mid-air above the highways crossing forests or fields. However they do not steam above the nearby forests or fields. Suggest several explanations for this behavior.
3. There are two groups of freshwater reservoirs: still water (ponds, lakes, puddles) and circulating water reservoirs (streams and rivers). What are the differences in the traits of organisms living in these types of freshwater reservoirs?
4. The IQ-test is applied to estimate the mental capacity of different people. But it is non-applicable to animals because they can't read and write. How can we compare the intelligence of different individuals of the same species? Give several examples for each method.
5. How can organisms use non-living cells of their body? Support your arguments with examples.
6. Visiting a forest year by year we notice the same plants in stationary places. However this is not the case for the agricultural fields. If we leave the harvest on the field, after several years there will be only a few individuals of the crop. Suggest as many as possible explanations for this 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 points given for correct answers on each question and student grade.

Usually biology questions have several (sometimes many) correct answers. For each correct answer you can get from 1 to 2 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 the 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 is for very homogeneous examples. If question is about animals which the 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.