

BIO-FOOD IS OUR FUTURE

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Abstract: *A healthy life of us also depends on the quality of food we are eating. This contribution looks into the problems of project teaching, outlines the task of ecological projects and as an illustration points out a theme of mathematical environmental projects, in which teachers and pupils can verify and demonstrate ecological knowledge in real life – in examples set for realisation during the school year (on excursions, trips, in schools in nature, etc.).*

Key words: *bio-food, ecological agriculture, healthy life style, projects on ecological themes*

1. Introduction

Have you eve tried to test bio-food? Not yet? Don't you know where to buy it? In many stores there are departments with bio-products. In some places there are even specialised bio-shops. Bio-food is our future.

Some people do not know what bio-food really is. They think of, e.g., soya beans, tofu cheese and also all kinds of müsli. Sometime the *bio-* is even connected with a saying: 'what is healthy is not too tasty' and in the case of bio-products it is really like that.

The bio prefix, however, has its own meaning. Under the label bio-products are found raw materials from so-called controlled ecological agriculture. It is a kind of farming with a very considerate relationship to soil, plants and animal. It is obvious that plant growing is without any chemical spraying, artificial fertilisers so there is no damage in the life environment. Animals feed on grass that is not fertilised by artificial chemicals. The feeding is done without growth stimulators and hormone preparations. In meat processing no artificial dyestuffs, aromatic or conservation substances, flavouring or other inorganic additives are used.

Every bio-product must be labelled by an identification code of a controlling body. It includes vegetables, fruits, cereals, legumes, oils, meat, raw milk, eggs or products from live animals. Even the Economic Agriculture Law and the Regulations of the committee of the European Economic Union include bio-food. The Czech bio-food is marked by the CZ-KEZ code. A green zebra as a symbol of bio-food is there too.

Bio-food, e.g. milk products, bread, or meat, is more expensive than common products. They reflect the costs of the production of high-quality foodstuffs and the producers reflect the higher costs in the price. If we are willing to pay more for the healthy food, then we must have in mind that we will pay some more crowns or Euros as for the same product, which has no bio label.

Most of those who tested the bio-food come back to it and some came to it permanently. They declare that the meat from ecological breeding has better taste than the common meat. Most bio-products contain less water, more dry mass, nutritive substances and vitamins than corresponding conventional products. It is the quality of the feedstuff, free movement of the animal on pastures, and stressless slaughtering that positively influence the flavour. The bio-products will penetrate in the Czech market more and more because many people want to pass over to a healthy life style and to reduce chemicals that we receive in the meals as much as possible.

If the development of the healthy life environment is realised, then it may lead to an additional, relatively substantial lengthening of life.

2. Projects with ecological themes

Newly formulated tasks for education in the 21st century emphasise the development of all personality features so that the pupils would better understand the world they live in and would acquire knowledge and skills important for life in the quickly changing world. They enable introducing various new forms in teaching mathematics, particularly a project teaching.

An important requirement of the environmental education in mathematics is an interconnection of scattered knowledge and a formation of an integrated view at the given issue. Mathematics should give the pupils simple and illustrative means for the description of quantitative phenomena of the world, as the pupils meet and recognise in common life and in other school subjects. They learn how to observe and describe the surrounding environment, the relation of people to the environment, how to acquire and classify information concerning the ecological issues, how to critically evaluate the acquired knowledge in their mutual relationships, how to consider possible impacts of various human activities (both positive and negative) and how to stimulate the interest on solution of ecological problems by imagination and creativity. Mathematics, thus, leads pupils to an active share in the protection of life environment.

For illustration we present an example of a mathematical project with an ecological theme.

3. Project: A healthy garden

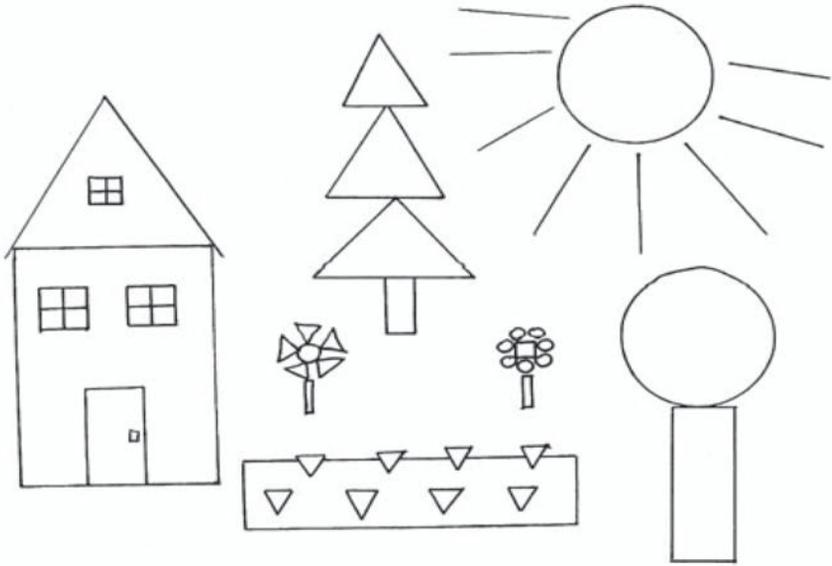
Task: revision of mathematics teaching matter of grade 2 – 3 of basic schools

Time: 1–2 lessons

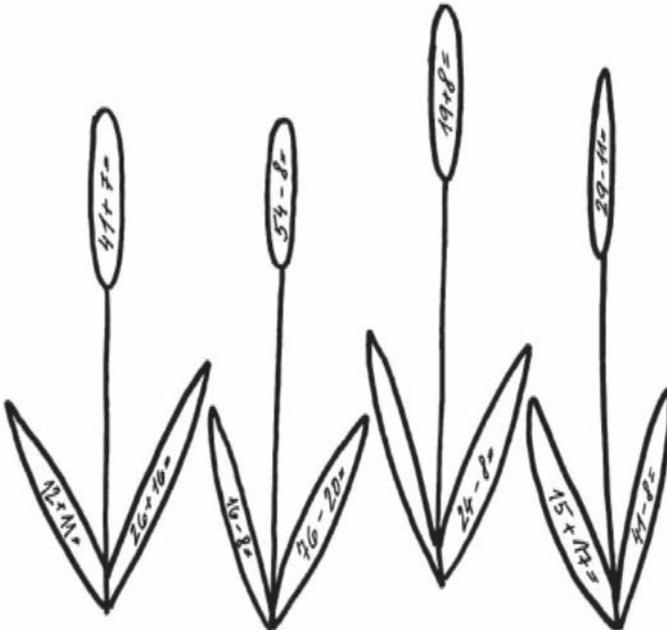
Age group: 3rd class

Motivation: “Do you know, children, that in the garden we will need to know how to count?”

- Colour in:
- ...green
 - ...yellow
 - ..blue
 - ..brown

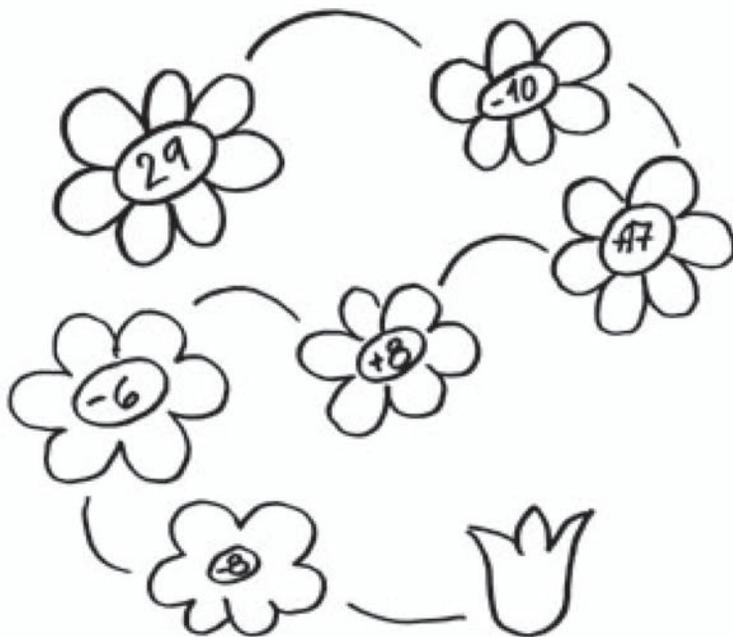


Granny has a small pool in the garden round which reeds grow. Božka hid exercises there. Calculate the exercises hidden in the reeds.



4. There are other tricky word tasks from Božka. Will you master them? Grandmother picks up herbs and dries them for tea. The first day she collected 4 scuttles, the second day she collected 6 times more than the first day and the third day she collected 2 times less than the second day. How many scuttles did she collect in three days? Mum grows ornamental flowers. At home she has 17 empty flowerpots and in a shop she bought other 15 flowerpots. How many flowerpots are there at home now?
5. Granny planted beautiful flowers in the garden and the centipede Božka drills multiplication on their leaves. Try it, too.

Last week the centipede Božka was observing a little bee pollinating flowers. Among the flowers Božka traced the path where the bee was flying. Can you calculate the whole trace that the bee had to fly in order to pollinate all flowers? Put down the result into the bell.



6. A word task from Božka:

Grandpa likes fruits and that is why he planted 9 apple trees, 2 times more plum trees than apple trees and 3 times less peach trees than plum trees. How many fruit trees did the grandfather plant.

7. Granny confined the flowerbed by a string so that we could not trample on the seedlings. The bed is in the shape of a rectangle. The centipede asks, "Can you calculate from the drawing how long string the granny needs for protecting the flowerbed?"

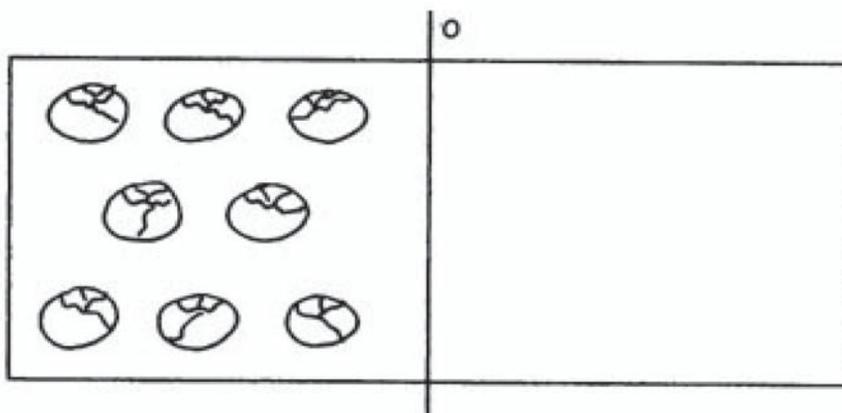
1cm = 1m



8. A word task from Božka:

A mullein has grown in granny's garden. The first day the mullein was 4cm tall, the second day 6cm more than the first day and the third day it was 6times taller than the first day. How tall was the mullein the second and third days?

9. Granny planted lettuce in the bed. The centipede Božka asks: "Can you draw up the second half of the bed in line of the axial symmetry with axis?"



4. Conclusion

The goal of the project method is to solve a concrete task that is reasonable, is real, comes from life and after processing comes back to the life again. The work on the project provides the pupils a possibility to assert themselves according their abilities, to co-operate with others and to be beneficial to them, to experience a feeling of success and also of the importance of education. Children are learning not only for the future life but they are learning how to live just now, at this moment. They learn to know themselves and others, to know their own value and to assert themselves.

By utilisation of project teaching it is possible to overcome the rigidity of used form and methods of teaching, isolation from the life reality, pedantry of professional explanations and memorising without connectivity and, resulting from it, a low interest of children in learning.

The project teaching is a demanding form of teaching, it takes long time for preparation and a lot of professional knowledge and organisational abilities in the work the teacher.

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BIOPOTRAVINÁM PATŘÍ BUDOUCNOST

Souhrn: Náš zdravý život také záleží na kvalitě potravin, které jíme. Příspěvek pohlédne do problematiky projektového vyučování, nastíní úkol ekologických projektů a pro ilustraci naznačí námět matematických environmentálních projektů, ve kterých učitelé s žáky mohou na ukázkách určených k realizaci během školního roku (na vycházkách, výletech, ve škole v přírodě aj.) ověřovat i demonstrovat ekologické poznatky v praxi.

Klíčová slova: biopotraviny, ekologické zemědělství, zdravý životní styl, projekty s ekologickou tematikou