

Activities for integrating concept learning
Into the science in english lessons

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Combining an exercise typical for studying a foreign language in subject learning is one of the areas in education today that is of great interest. In particular, students who study various subjects in a language not native for them, face a double challenge – to master both content and vocabulary of the subject. There are many ways to accomplish this aim – crossword puzzles, fill in the blanks, match the terms, concept mapping, decision-making, etc. All these activities replace the traditional lecture-based teaching and give the student the opportunity to be an active learner. Subject teachers need to implement this way of presenting information more regularly, though in Bulgaria they lack hands-on materials and supplemental manuals for their classrooms.

This paper will present some activities for chemistry in English classroom. These are only samples that attempt to bring only a few typical “language” exercises into the science classes.

- ◆ **Fill in the blanks** is a traditional exercise used for mastering a foreign language. In chemistry this activity combines the vocabulary (new terms for a particular lesson) with the usage of these terms in the specific content. The following are some examples:

Word List

element/compound
mixture/substance
homogeneous/heterogeneous
definite/varying
identical/different
ozone/carbon dioxide

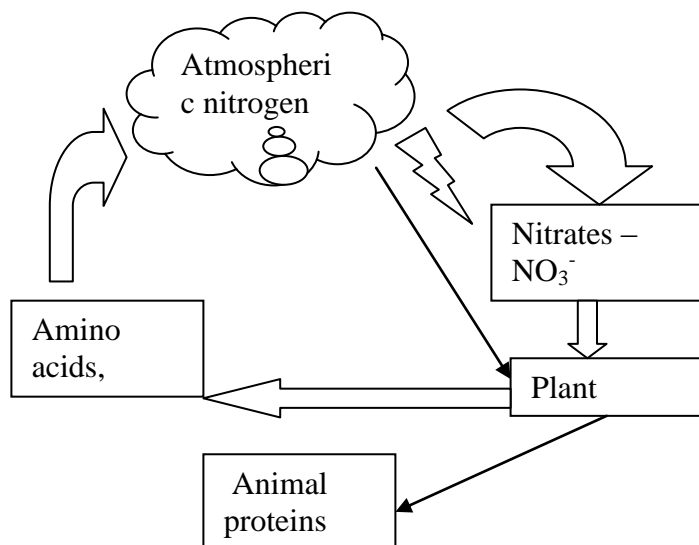
An _____ is a substance that cannot be decomposed by chemical means. For example, _____ is one of the elemental forms of oxygen. A compound, like _____ is a _____ that can be decomposed by chemical change. One of the most important characteristics of substances is that they have a _____ composition. A _____ consists of two or more substances that differ in their properties and may have _____ composition. There are two types of mixtures: _____ and _____.

- ◆ **Match the statement** is another vocabulary exercise and in science classes that works really well when the teacher tries to check what students learned from the covered topic.

Match each term in the left-hand column with a descriptive example in the right-hand column.

compound	salt dissolved in water
CO ₂	lead
chemical change	butter
element	oil and vinegar salad dressing
homogeneous mixture	carbon dioxide
physical change	rusting
heterogeneous mixture	condensation

◆ Another version of “match the statement” is using pictures or diagrams like the one below:



1. fixation – transforming pure nitrogen into nitrogen compounds
2. denitrification – releasing free nitrogen back in the atmosphere
3. decay of organisms and plants
4. plant growth
5. rain
6. metabolism

◆ **Search and find** is a fun activity when a teacher wants to give students a break but also to keep on the task.

Discuss the following terms: *kinetic, heat, temperature, degree, scale, Celsius, Kelvin, Fahrenheit*. The words are hidden in the diagram of letters below in a straight line, down or up, left to right, right to left, or diagonally.

E	R	U	T	A	R	E	P	M	E	T
T	T	A	E	H	J	L	N	K	I	S
V	K	I	N	E	T	I	C	E	L	T
R	T	E	N	M	O	L	H	L	U	O
S	Q	E	T	B	D	N	K	V	H	I
C	R	Y	M	C	E	L	S	I	U	S
A	H	J	P	R	G	A	U	N	E	Y
L	E	S	H	V	R	C	B	M	P	I
E	T	A	Y	W	E	J	C	I	O	Z
W	F	D	F	L	E	P	V	R	P	Y

More exercises of this kind aimed to meet the national educational standards for the first year chemistry grade of the English language schools could be found in a booklet entitled “Activities for 8th grade chemistry” and could be purchased from the “Prosveta” publishing.