

# **Documentation** for the teaching material »Open tasks«

School:	Staatliche Regelschule Friedrichroda (grades 5–10)
Grade:	8-10
Subject:	Chemistry
Authors:	Jörg Triebel, Karl-Heinz Nießler
Target:	Application of open tasks in chemistry classes
Organization form/time needed:	Pair and group work (see tasks)
Evaluation of the students' performances:	Assessment and grading of the students results by the teacher (see tasks)
Material Requirements:	See realization
Methodical Indications:	Rules for pair work have to be known see realization
Students' Materials:	See realization
Literature:	Internet research possible

# Examples for »Open Tasks« in chemistry lessons

### Task 1

The sewage of a metal company is to be treated. Therefore, an employee puts a larger amount of **Quicklime** to the stabilization pond.

Some of the neighbors watch and comment on it like this:

**Neighbor A:** »Is it necessary to throw in something else? There's enough chemicals in there!« **To this Neighbor B answers:** »He only neutralizes the wastewater.«

»Why can't he take the same simple lime that I use for my garden?!«, **says Neighbor C.** Take part in this discussion!



### **General Expectation**

### The student

- discusses all three opinions,
- comes to the conclusion that the semantic content increases from Neighbor A to Neighbor C,
- formulates his own opinion and
- rationalizes his opinion.

### The following issues should be considered:

- higher time effort (!)
- the creativity can be advanced
- precondition is always the presence of certain professional and methodological skills of the student
- therefore, these should be developed by applying a variety of teaching methods

### This requires:

- the cooperation of teachers
- working in context

# Examples for »Open Tasks« in chemistry lessons

# Task 2:

At the Miller's the basement is flooded with water. The diagnosis of plumbers is: House infarction!

- How did the plumber come up with this diagnosis?
- Develop strategies for future prevention of this problem.

Group work of up to three students is possible.



### **General Expectation**

### Workflow:

- disambiguation
- transfer: biology, medicine, causes
- solution strategies

#### Methods:

- media relations
- analysis, hypothesis
- networking of specialized knowledge
- experiment
- conclusions

## Contents:

- lime, corrosion, dirt
- reaction equations
- different levels of development

# Special characteristics of these open tasks:

• multiple solution ways, multiple solutions

- linking of skills
- different theoretical levels possible