

Dear Teacher,

thank you for helping us evaluating COLDEX activities. The evaluation forms included in this document enable you and the COLDEX community to improve instructional activities and to adapt COLDEX tools to the students' needs. Forms A-C aim to assess the students' attitudes towards learning. Form A is a science questionnaire that shows us students' attitudes towards science in school and in daily life. Form B assesses generally to what extent students like to work with computers. Form C looks at the level of student motivation within a certain activity. Forms A-C need to be filled out by your students.



In addition to the attitudinal questionnaires A-C there are two evaluation forms (D and E) that are specifically developed to evaluate the usefulness and richness of the COLDEX activities and the COLDEX environment. You and your colleagues should fill out these both forms.

### **Form A. Science attitude questionnaire**

The science attitude questionnaire consists of 20 questions. Note that many of these questions are very similar. This is necessary to assure that all students understand the question in the same way! This questionnaire should be given to the students **before** the COLDEX activity takes place.

**Estimated time: 5 min.**

### **Form B. Computer attitude questionnaire**

The computer attitude questionnaire consists of 20 questions. Note that many of these questions are very similar. This is necessary to assure that all students understand the question in the same way! This questionnaire should be given to the students **before** the COLDEX activity takes place.

**Estimated time: 5 min.**

### **Form C. Motivation questionnaire**

The motivation questionnaire consists of 18 questions. Note that many of these questions are very similar. This is necessary to assure that all students understand the question in the same way! This questionnaire should be given to the students **after** the COLDEX activity takes place.

**Estimated time: 4 min.**

### **Form D. COLDEX activity form**

The COLDEX activity form consists of 6 items regarding COLDEX activities. You and your colleagues should fill in rich, descriptive information into the right column of the form. You are asked to describe to what extent the activities that you carried out in your classroom are e.g. authentic, collaborative etc.

### **Form E. COLDEX environment form**

The COLDEX environment form consists of 5 items regarding the COLDEX environment that you and your class experienced. You and your colleagues should fill in rich, descriptive information into the right column of the form. You are asked to describe to what extent the COLDEX environment was used during your lab or classroom activities.

## A. Science Questionnaire (before the activity)

First name: \_\_\_\_\_ Last name: \_\_\_\_\_

Gender:  male  female

Year of Birth: \_\_\_\_\_

Grade: \_\_\_\_\_

Dear student,

This test contains a number of statements about science. You will be asked what you yourself think about these statements. There are no right or wrong answers. Your opinion is what is wanted.

Please circle your response to the items. Rate aspects of the course on a 1 to 7 scale, 1 equals "strongly disagree" and 7 equals "strongly agree". 1 represents the lowest and most negative impression on the scale, 4 represents an adequate impression, and 7 represents the highest and most positive impression.

	strongly disagree		not sure		strongly agree		
	1	2	3	4	5	6	7
I would prefer to find out why something happens by doing an experiment than by being told.	1	2	3	4	5	6	7
Science lessons are fun.	1	2	3	4	5	6	7
Doing experiments is not as good as finding out information from teachers.	1	2	3	4	5	6	7
I dislike science lessons.	1	2	3	4	5	6	7
I would prefer to do experiments than to read about them.	1	2	3	4	5	6	7
School should have more science lessons each week.	1	2	3	4	5	6	7
I would rather agree with other people than do an experiment to find out for myself.	1	2	3	4	5	6	7

	strongly disagree		not sure			strongly agree	
	1	2	3	4	5	6	7
Science lessons bore me.	1	2	3	4	5	6	7
I would prefer to do my own experiments than to find out information from a teacher.	1	2	3	4	5	6	7
Science is one of the most interesting school subjects.	1	2	3	4	5	6	7
I would rather find out about things by asking an expert than by doing an experiment.	1	2	3	4	5	6	7
Science lessons are a waste of time.	1	2	3	4	5	6	7
I would rather solve a problem by doing an experiment than be told the answer.	1	2	3	4	5	6	7
I really enjoy going to science lessons.	1	2	3	4	5	6	7
It is better to ask the teacher the answer than to find it out by doing experiments.	1	2	3	4	5	6	7
The material covered in science lessons is uninteresting.	1	2	3	4	5	6	7
I would prefer to do an experiment on a topic than to read about it in science magazines.	1	2	3	4	5	6	7
I look forward to science lessons.	1	2	3	4	5	6	7
It is better to be told scientific facts than to find them out from experiments.	1	2	3	4	5	6	7
I would enjoy school more if there were no science lessons.	1	2	3	4	5	6	7

Adapted from: *Test of Science-Related Attitudes (TOSRA): Fraser, B. L. (1978). Development of a test of science-related attitudes. Science Education, 62, 509-515. (Public Domain)*

**B. Computer Questionnaire (before the activity)**

First name: \_\_\_\_\_ Last name: \_\_\_\_\_

Gender:  male  female

Year of Birth: \_\_\_\_\_

Grade: \_\_\_\_\_

Dear student,

this test contains a number of statements about computers. You will be asked what you yourself think about these statements. There are no right or wrong answers. Your opinion is what is wanted.

Please circle your response to the items. Rate aspects of the course on a 1 to 7 scale 1 equals "not at all true" and 7 equals "very true". 1 represents the lowest and most negative impression on the scale, 4 represents an adequate impression, and 7 represents the highest and most positive impression.

	not at all true		somewhat true			very true	
I enjoy doing things on a computer.	1	2	3	4	5	6	7
I am tired of using a computer.	1	2	3	4	5	6	7
I will be able to get a good job if I learn how to use a computer.	1	2	3	4	5	6	7
I concentrate on a computer when I use one.	1	2	3	4	5	6	7
I enjoy computer games very much.	1	2	3	4	5	6	7
I would work harder if I could use computers more often.	1	2	3	4	5	6	7
I know that computers give me opportunities to learn many new things.	1	2	3	4	5	6	7
I can learn many things when I use a computer.	1	2	3	4	5	6	7
	not at all true		somewhat true			very true	

I enjoy lessons on the computer.	1	2	3	4	5	6	7
I believe that the more often teachers use computers, the more I will enjoy school.	1	2	3	4	5	6	7
I believe that it is very important for me to learn how to use a computer.	1	2	3	4	5	6	7
I feel comfortable working with a computer.	1	2	3	4	5	6	7
I get a sinking feeling when I think of trying to use a computer.	1	2	3	4	5	6	7
I think that it takes a long time to finish when I use a computer.	1	2	3	4	5	6	7
Computers do not scare me at all.	1	2	3	4	5	6	7
Working with a computer makes me nervous.	1	2	3	4	5	6	7
Using a computer is very frustrating.	1	2	3	4	5	6	7
I will do as little work with computers as possible.	1	2	3	4	5	6	7
Computers are difficult to use.	1	2	3	4	5	6	7
I can learn more from books than from a computer.	1	2	3	4	5	6	7

**C. Motivation Questionnaire (after the activity)**

First name: \_\_\_\_\_ Last name: \_\_\_\_\_

Gender:  male  female

Year of Birth:

Grade:

Dear student,

This test contains a number of statements about motivation. You will be asked what you yourself think about these statements. There are no right or wrong answers. Your opinion is what is wanted.

Please circle your response to the items. Rate aspects of the course on a 1 to 7 scale 1 equals "not true at all" and 7 equals "very true". 1 represents the lowest and most negative impression on the scale, 4 represents an adequate impression, and 7 represents the highest and most positive impression..

For each statement, draw a circle around

	not at all true		somewhat true			very true	
	1	2	3	4	5	6	7
After working at this activity for a while, I felt pretty competent.	1	2	3	4	5	6	7
I am satisfied with my performance at this task.	1	2	3	4	5	6	7
I didn't put much energy into this.	1	2	3	4	5	6	7
I didn't try very hard to do well at this activity.	1	2	3	4	5	6	7
I enjoyed doing this activity very much.	1	2	3	4	5	6	7
I put a lot of effort into this.	1	2	3	4	5	6	7
I think I am pretty good at this activity.	1	2	3	4	5	6	7
I thought this was a boring activity.	1	2	3	4	5	6	7

	not at all true		somewhat true			very true	
I was pretty skilled at this activity.	1	2	3	4	5	6	7
It was important to me to do well at this task.	1	2	3	4	5	6	7
This activity did not hold my attention at all.	1	2	3	4	5	6	7
This activity was fun to do.	1	2	3	4	5	6	7
This was an activity that I couldn't do very well.	1	2	3	4	5	6	7
While I was doing this activity, I was thinking about how much I enjoyed it.	1	2	3	4	5	6	7
I thought this activity was quite enjoyable.	1	2	3	4	5	6	7
I tried very hard on this activity.	1	2	3	4	5	6	7
I would describe this activity as very interesting	1	2	3	4	5	6	7
I think I did pretty well at this activity, compared to other students.	1	2	3	4	5	6	7

Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality*, 62, 119-142.

## D. COLDEX activity form

You participated in the COLDEX activities and made experiences with scientific tools and COLDEX tasks. These experiences are very valuable for us. Please share some details of your experiences by filling out the table below. Thank you!

COLDEX Learning Activity		
	Description	
Authentic Activities	<p>What kind of scientific activities were possible in this learning unit?  <i>(Examples: hypotheses, do experiments, formulating a scientific problem, defining rules, taking measurements)</i></p>	
Construction of Artefacts	<p>Did students produce objects?  <i>(Examples: documents, diagrams, maps, data)</i></p> <p>Have these objects been re-used?</p>	
Collaborative Construction of Knowledge	<p>Have the students been working in groups?</p> <p>What kind of collaborative activities took place?  <i>(Examples: sharing ideas in discussions, defining problems together, working with groupware tools)</i></p>	
Reflection	<p>Did students have opportunity to reflect on their learning process?  <i>(Examples of Reflection: Revision of previous work, discuss alternative ways of solving a problem, revisiting earlier encountered problems and solutions, keeping track of the learning process, making additional notes)</i></p>	



COLDEX Learning Activity		
	Description	
Situating the context	<p>What kind of materials and tools were available for the students to perform scientific activities?</p> <p>What experiments did they make? (<i>Examples: telescope, simulations</i>)</p>	
Multi-modal interaction	<p>What means did the students have to represent the problem and to express the solution?</p> <p>(<i>Represented as: drawings, computer programs, "maze rules", video, drama, simulation models, graphs</i>)</p>	

## E. COLDEX environment form

The COLDEX Learning Environment is also your classroom environment where you carried out COLDEX activities. Please share some information about your learning environment and how you integrated COLDEX activities. Thank you!

COLDEX Environment		
	Description	
In-class and distributed activities	Where did the activities take place? ( <i>Examples: all the time in the classroom, outside of the classroom, at different locations at the same time</i> )	
Individual and collaborative activities	Which kinds of learning modes were supported? a. Work together b. Work individually c. Both learning modes	
Use of COLDEX tools and learning material	Did your learning environment support using help files, different COLDEX software in the COLDEX platform or other instructional materials?	
Sharing and exchange of information	Did your environment allow uploading or sharing information, objects, and results using the COLDEX platform?	
Cooperation with other communities	Did you make use of the COLDEX possibility to work with people from other countries who were using the same COLDEX software?	