



## Questionnaire

### INTEREST RESEARCH – TEACHERS' OPINION

Dear teacher,

The following questionnaire is part of a European study of Teaching Geosciences in Secondary Schools and attempts to identify the level of interest in Geosciences.

The results of this study will determine the geology interest of secondary school students and teachers and this information will be used in order to design a common curriculum on geosciences in European level. Please answer all questions and do not leave blanks. Mark from 1 the least interesting to 5 the most interesting for you. [(1) None, (2) Little, (3) Enough, (4) A lot, (5) Very much].

We thank you for your contribution to this important research.

GEOschools team

Name: .....  
 Address: ..... Zip code :..... Telephone: .....  
 E-mail: ..... Date: .....

Specialization (18): .....

Master (19): ( ), Doctor degree (20) ( ), Second university Degree (21) ( )

In service training (seminars on geosciences): (22.1) Short term ( ), (22.2) Long term (> 90 hours) ( )

In service training on other issues: (23.1.)Yes ( ), (23.2) No ( ), (23.3) If YES, specify : .....

Participation in innovated school activities: (24.1) Environmental education projects ( ), (24.2) Health education projects ( ), (24.3) European project ( ), (24.5) Other s ( ).

Years of teaching experience(25): ..... Age: (26.1.) 25-35 , (26.2.) 36-45 , (26.3.) 46-55 , (26.4) over 55 ,  
 Gender: (27.1.)Female , (27.2.)Male

School(28): ..... Public(28.1) , Private(28.2) , Country(29): .....



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In what type of community is your school located? (Please tick one box only)

- (30.1.) A geographically isolated area , (30.2) A village or rural area , (30.3.) On the outskirts of a town/city , (30.4.) Near the centre of a town/city .

Does your school have any special programs or initiatives for geology outside normal classroom activities?

(You may tick more than one)

- (31.1.) Extra-class lessons in geology , (31.2.) Environmental Education project related with geology , (31.3.) Special project in Geology , (31.4) Other  (specify) ....., (31.5) None .

Which of the following topics would you find interest to be taught the students and in which way?

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MAIN TOPIC	SPECIFIC CONTENT	INTEREST				
		1	2	3	4	5
Earth position in the Cosmos  <b>1</b>		1	2	3	4	5
	1.1.the age of Cosmos?					
	1.2.the emerging of Cosmos?					
	1.3.galaxies?					
	1.4.milky way?					
	1.5.planets and asteroids?					
	1.6.the geological activity outside of planet Earth?					
		TOTAL SCORE				
Earth  <b>2</b>  • The Earth is very <i>old</i> (4.6 thousand of million years). • We are able to investigate the age of Earth by means of radiometric dating methods.		1	2	3	4	5
	2.1.the age of the Earth?					
	2.2.the evolution of the Earth?					
	2.3.internal Structure of Earth (Crust - Mantle – Core)?					
	2.4.the proposing models of the internal structure of the Earth?					
	2.5.the continental and oceanic crust?					
	2.6.the moon?					
	2.7.meteorites, asteroides and comets?					
	2.8.the forming of minerals?					
	2.9.how to test and describe a mineral?					
	2.10.the way that rocks derived from minerals?					
	2.11.the different types of rocks?					
	2.12.examples of characteristic rocks?					
	2.13.rock cycle?					
	2.14. soil types and buildup?					
	2.15.soil zones and life in/on soil?					
	2.16.soil uses by man?					
2.17.how sand, granite or marble is formed?						
	TOTAL SCORE					



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Palaeontology  <b>3</b> • <i>Life appeared on Earth long ago...</i>						
		1	2	3	4	5
	3.1.when and how Life appeared on Earth?					
	3.2.about the evolution of life?					
	3.3. how fossils are formed?					
	3.4. some examples for Proterozoic, Paleo-, Meso- and Cenozoic fossils?					
	3.5.why species go extinct?					
	3.6.about mass extinctions?					
	3.7.why dinosaurs disappeared?					
	3.8.the evolution of mankind?					
	TOTAL SCORE					
The measure of time  <b>4</b> • <i>Geologists have different ways to measure the time of Earth.</i>						
		1	2	3	4	5
	4.1.what is the chronostratigraphic table?					
	4.2.how determine the age of strata by studying fossils?					
	4.3.how determine the age of the Earth by using <i>radiometric methods</i> ?					
4.4.the age of the rocks of your region?						
	TOTAL SCORE					
Tectonics  <b>5</b> • <i>Plate Tectonics is the main dynamic agent to shape the Earth as it is.</i>						
		1	2	3	4	5
	5.1.how we have passed from the "Continental Drift Theory" to the "Plate Tectonics Theory"?					
	5.2.what means seafloor spreading?					
	5.3.about the Continental Drift Theory of Wegener. ( <i>Geophysical, Geological, Paleontological, Paleoclimatical and Geodesical arguments</i> )?					
	5.4.about the position of continents through time?					
	5.5.about plate tectonics and building of mountain ranges?					
	5.6.about folds?					
	5.7.about faults?					
	5.8.how volcanoes are formed?					
	5.9.why the distance between Europe and America (through Atlantic ocean) is getting longer year by year?					
	5.10.why and how Earthquakes occur?					
5.11.why and how volcanoes are formed?						
	TOTAL SCORE					
Earth is changing						
		1	2	3	4	5
	6.1.how the landscape is changing?					
6.2.how seashores are changing?						



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<p style="text-align: center; font-size: 2em; font-weight: bold;">6</p> <ul style="list-style-type: none"> <li>Mountains are being eroded all the time until they are completely washed to the sea.</li> <li>Climate on Earth has been slowly changing all time.</li> <li>Erosion of relief is a constant, natural process.</li> </ul>	6.3.about the Earth as a dynamic system?					
	6.4.about the interaction between: lithosphere, hydrosphere, biosphere and atmosphere?					
	6.5.about major forms of landforms ( <i>mountains, plains, plateaus, hills</i> )?					
	6.6.about watersheds dynamics ( <i>drainage basins, landscape modelling</i> )?					
	6.7.how water shapes landscape?					
	6.8. about coastal dynamics ( <i>beaches, cliffs, cliff retreat, coastal evolution</i> )?					
	6.9.how rivers and sea waves alter the landscape?					
	6.10.how mountains are eroded and washed down?					
	6.11.about weathering?					
	6.12.about erosion?					
	6.13.about desertification?					
	6.14.about climatic change?					
	6.15.about climate changes through History of Earth?					
	6.16.about climatic changes in your region through geological time?					
		<i>TOTAL SCORE</i>				
7 <p style="text-align: center;">Natural hazards</p> <ul style="list-style-type: none"> <li>Geological Hazards are normal processes of Earth. We must learn how to prevent them.</li> <li>Geological processes are the reason for Natural Hazards.</li> </ul>						
		1	2	3	4	5
7.1.about earthquakes´ risks and protection of the populations?						
7.2.about volcanic eruptions , risks and benefits of the volcanic activity?						
7.3.about tsunami?						
7.4.what happened in north east Japan after the hit of the Earthquake and the tsunami in March 2011?						
7.5.about landslides?						
7.6.about floods?						
7.7.about droughts?						
7.8.about storms?						
7.9.what we could do to avoid being exposed to Natural Hazards?						
7.10.how we can defend from the geological risks?						
7.11.why sometimes "entire regions with villages" are sliding down from the cliffs?						
7.12.what happened in Pompeii after the Vesuvius eruption of 79 AD?						
7.13.about the eruption of Santorini volcano in the Late Bronze Age and its impact on the cultures and civilizations of the time?						



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		TOTAL SCORE				
<p><b>8</b></p> <p>Natural resources and mankind</p> <ul style="list-style-type: none"> <li>Natural resources as we see them today are the result of organic (= life) remains accumulation and fossilization.</li> <li>Underground water is a crucial resource for life.</li> <li>We should be aware, not to contaminate it.</li> <li>"Fossil resources" are different sorts of fuel that have been formed by the accumulation of organic matter and matured and stored to form large reservoirs under the ground.</li> <li>Water flows on the Earth's surface, but it is also stored beneath the surface, as underground water.</li> </ul>		1	2	3	4	5
	8.1.about fossil fuels (such as coal, oil, and natural gas. New sources, such as methane hydrates)?					
	8.2.how coal deposits were formed?					
	8.3.how the oil is formed?					
	8.4.why is oil so expensive?					
	8.5.what is the difference between coal and oil?					
	8.6.about renewable resources (e.g. geothermal energy)?					
	8.7.about soil, rocks, and minerals provide essential metals and other materials for agriculture, manufacturing and building?					
	8.8.about raw material?					
	8.9.about sustainable exploitation of geological resources?					
	8.10.why and how water is stored as underground water?					
	8.11.how the caves and other underground landforms are formed?					
	8.12.about water management?					
	8.13.about devalorisation of surface and ground water?					
	8.14.about springs?					
	8.15.why sometimes the underground water is salty in areas near the coastal line?					
8.16.Why in some regions the drills for water are going deeper and deeper to find the underground water?						
		TOTAL SCORE				
<p><b>9</b></p> <p>Humans activities alter Earth</p> <ul style="list-style-type: none"> <li>Man should be aware that his activities on Earth surface can modify and destroy it forever.</li> <li>Man can alter and modify the normal rhythm of Earth's changing.</li> <li>This can act against us;</li> </ul>		1	2	3	4	5
	9.1.how human activities change the Earth?					
	9.2.about public works and landscape changing?					
	9.3.how big constructions (roads, bridges...) change the landscape?					
	9.4.how quarries and mines alter the Earth surface?					
	9.5.how can we minimize their impact?					
	9.6.How human activities destroy the evidence of the history of Earth?					
			TOTAL SCORE			



<p>even destroy our civilization.</p> <ul style="list-style-type: none"> <li>• <i>HUMAN activities change the Earth and must be taken into account in the same way as natural processes, in any attempt understanding the way the Earth systems work.</i></li> </ul>							
<p>Geodiversity, Earth protection and sustainable development</p> <p><b>10</b></p> <ul style="list-style-type: none"> <li>• <i>Geodiversity is a precious gift of the Earth.</i></li> <li>• <i>We should try not to affect it or destroy the special, most beautiful formations (Geomonuments).</i></li> <li>• <i>Geodiversity (the diversity of forms we see in the landscape are the result of geological processes (tectonic, sedimentary, and erosional). The most representative of all these processes and forms constitute what we call the Geological Heritage.</i></li> </ul>		1	2	3	4	5	
	10.1. how the geological Heritage is studied and why it should be protected?						
	10.2. what is geological heritage?						
	10.3. what is a geotope?						
	10.4. what is a geopark?						
	10.5. what is the meaning of geoconservation?						
	10.6. about nature protection and conservation?						
	10.7. about sustainable development and geoheritage?						
	10.8. about protected areas and geology (e.g. NATURA 2000)?						
	10.9. about the geological heritage of your region?						
<p>The Earth yesterday, today and tomorrow</p>		1	2	3	4	5	
11.1. the Earth before the appearance of the human being?							
11.2. paleoclimate and impact of lithospheric dynamics on climate changes?							
11.3. human occupation and land management problems in							



<h1>11</h1>	drainage basins, coastal areas, slope areas?					
	11.4.the human being as an agent of environmental changes?					
	11.5.global warming?					
	11.6.exploration of minerals and materials of construction and ornamentals?					
	11.7.about pollution of the environment?					
	11.8.about exploitation and changing of soils?					
	11.9.about exploitation and pollution of waters?					
	11.10.what to expect in the 21 <sup>st</sup> century in regional and global environmental changes?					
TOTAL SCORE						
<h1>12</h1>	Brief geological history of your region					
		1	2	3	4	5
	12.1. the geological history of your country in brief?					
	12.2.a general cross-section of your country showing the main Geological units?					
	12.3. the geologic evolution of your country from Pangaea onwards through geological maps and discussion of the main geological units?					
	12.4. the Geology of the country including all main zones, etc.?					
	12.5.the brief local geological history of your region?					
	12.6.interpret the main geological aspects of the region where the school is located by using a map?					
12.7. why we find remains of sea organisms up the hill, in high areas above the sea level?						
TOTAL SCORE						
<h1>13</h1>	Geological maps					
		1	2	3	4	5
	13.1. how geologists represent the geological units on a map?					
	13.2. about topography; relief?					
	13.3. about geological structures?					
	13.4. about geological units?					
	13.5. about the age of geological Units?					
	13.6. the geology of a region from the air?					
13.7. the geological map of your country?						
TOTAL SCORE						

- Geologists represent the geology of surface on geological maps.
- Geological maps are crucial instruments to understand Geology.
- Geological maps represent the geology of the Earth.
- In geological maps show geological units.



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<p>Geology in everyday life</p> <h1 style="text-align: center;">14</h1> <ul style="list-style-type: none"> <li>Geologists always see the Geology and geological history of the landscape behind the beauty of the scenery.</li> <li>They are committed to explain it to the Society.</li> <li>Almost all human activities are related with geology and geological processes.</li> </ul>							
		1	2	3	4	5	
	14.1. what are the main geological resources for Humanity? (For building, food, mining, water supply, construction resources-quarrying, material of Earth and Geo-hazards).						
	14.2. what is the Geological Tourism (Geotourism)?						
	14.3. what sort of materials of your everyday life are connected with geological resources?						
	TOTAL SCORE						
HOW to teach geosciences?							
<p>Which way would you like to teach geosciences?</p> <h1 style="text-align: center;">15</h1> <ul style="list-style-type: none"> <li>Going to the field is the best way to see and learn "real" Geology.</li> <li>Geological fieldtrips should be a customary activity to learn Geology in schools.</li> <li>The best way to learn geology is looking at geological elements and structures directly in the field.</li> </ul>							
		1	2	3	4	5	
	15.1. Giving lectures (through pupils centralized teaching activities like role play, debate, etc.)?						
	15.2. Giving lectures (through teachers' centralized teaching)?						
	15.3. Organizing in geological activities in the field like geotrails etc.?						
	15.4. Suggesting read books?						
	15.5. Using films and animation videos?						
	15.6. Using interactive digital simulations?						
	15.7. Making Experiments in Laboratory?						
	15.8. Using interactive analogic model simulations?						
	15.9. Using minerals and fossils samples in a microscope?						
	15.10. Making geological excursions (fieldtrips) to see geology in Nature?						
	15.11. Collecting fossils?						
	15.12. Visiting mines and collecting minerals?						
	15.13. Visiting protected Natural areas?						
	15.14. Working in teams in the class?						
	15.15. Organizing in project work?						
	15.16. Visiting geological museums?						
	15.17. Visiting open air geological museums?						
15.18. Other (specify)							
	TOTAL SCORE						





GENERAL REMARKS  <h1 style="margin: 0;">16</h1>	16.1. Describe your best moment of a geology lesson that you have given. <i>Description:</i>				
	16.2. Do you know the type of the rocks of your region? (If, YES... Which is the type?)	YES	NO	Type:	
	16.3. Do you know the age of the rocks of your region?	YES	NO	Age:	
	16.4. Have you ever felt an earthquake?	YES	NO	Where?	
	16.5. Have you ever seen a volcano?	YES	NO	Where?	
	16.6. Have you ever been in a natural disaster? (If YES... in which?)	YES	NO	Natural disaster:	
	16.7. Would you like to teach Geology lessons at school?				
	16.8. Would you like to be trained in specific geological subjects of your interest? (If YES, why?, If NOT, why?)	YES	NO	Why:	
	16.9. Do you think that geology is useful for other scientists and technicians? (engineers, biologists, conservationists etc.)				
	16.10. Do you think that basic geological knowledges are useful for everyday life of people?				
	16.11. Why did you choose to teach geology at your school? Did you have chosen it by free wiling or you were obliged to do it? (2)	(1)	(2)	Why	
	16.12. Please rank the four natural sciences (biology, chemistry, geology, physics) in order of your interest. (‘1’ is the least interesting science, ‘4’ is the most interesting science)	1	2	3	4
	16.13. Characterize the science of Geology by one word:				
	16.14. Write down the 10 most interesting geologic subjects that you would like to teach.				
1	2	3	4	5	
6	7	8	9	10	

<p><u>Free comment</u></p> <h1 style="margin: 0;">17</h1> <p>Would you like to do any comment?</p> <p>Please, write down your comment: .....</p> <p>.....</p> <p>.....</p>
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*THANK YOU VERY MUCH FOR YOUR CONTRIBUTION!*



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