



Questionnaire

INTEREST RESEARCH – school STUDENTS' OPINION

Dear student,

We would like your opinion on geosciences curricula. The following questionnaire is part of a European study of Teaching Geosciences in Secondary Schools and aims to include your preferences in a common curriculum on geosciences in Europe.

In the following questionnaire you will find terms about geosciences that are already included in curricula of European countries. Which of them you would prefer to be taught and in which way? Please 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].

1

All information provided by you will be treated as strictly confidential and you will not be identified by name.

Your participation is very much appreciated and will allow us to focus on critical issues related to the interest of geology teaching.

We would greatly appreciate your completing this questionnaire, which should only take 30 minutes.

Yours sincerely,

GEOschools team

Birthday (dd/mm/yy) (18): Age(19): Gender: Male(20.1) (), Female(20.2) ()

Class(21):..... How many years have you been taught geology(22):

Country(23):..... School(24):..... Date(25):.....

Last school year grade (26): (26.1) 10-13/20 (), (26.2) 14-16/20 (), (26.3) 17-20/20 (),

Education level of parents:

Mother (27): (27.1) Obligatory education (), (27.2) Secondary education (), (27.3) After secondary education (), (27.4) University level ()

Father (28): (28.1) Obligatory education (), (28.2) Secondary education (), (28.3) After secondary education (), (28.4) University level ()

2

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MAIN TOPIC	SPECIFIC CONTENT	STUDENTS' INTEREST				
Earth position in the Cosmos 1	Would you like to know about:					
		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 2 • 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.	Would you like to know about:					
		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					
Palaeontology	<i>Life appeared on Earth long ago...</i>					
	Would you like to know:					
		1	2	3	4	5



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3

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3	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	<i>Geologists have different ways to measure the time of Earth.</i>					
	Would you like to know:					
		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	Would you like to know :					
	5.1.how we have passed from the "Continental Drift Theory" to the "Plate Tectonics Theory"?	1	2	3	4	5
	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	<i>Erosion of relief is a constant, natural process.</i>					
	Would you like to know:					
		1	2	3	4	5
	6.1.how the landscape is changing?					



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4

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<p style="text-align: center; font-size: 2em; font-weight: bold;">6</p> <ul style="list-style-type: none"> Mountains are being eroded all the time until they are completely washed to the sea. Climate on Earth has been slowly changing all time. 	6.2.how seashores are changing?					
	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?					
		TOTAL SCORE				
<p style="text-align: center; font-size: 2em; font-weight: bold;">7</p> <p>Natural hazards</p> <ul style="list-style-type: none"> Geological Hazards are normal processes of Earth. We must learn how to prevent them. 	<i>Geological processes are the reason for Natural Hazards.</i>					
	Would you like to know:					
		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						



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	Bronze Age and its impact on the cultures and civilizations of the time?					
		TOTAL SCORE				
<p>Natural resources and mankind</p> <p>8</p> <ul style="list-style-type: none"> Natural resources as we see them today are the result of organic (= life) remains accumulation and fossilization. Underground water is a crucial resource for life. We should be aware, not to contaminate it. 	<p><i>"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.</i></p> <p>Would you like to know:</p>					
		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?					
	<p><i>Water flows on the Earth's surface, but it is also stored beneath the surface, as underground water</i></p> <p>Would you like to know:</p>					
	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					
Humans activities alter Earth	<p><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></p> <p>Would you like to know:</p>					
	1	2	3	4	5	



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<p style="text-align: center; font-size: 2em; font-weight: bold;">9</p> <ul style="list-style-type: none"> • Man should be aware that his activities on Earth surface can modify and destroy it forever. • Man can alter and modify the normal rhythm of Earth's changing. • This can act against us; even destroy our civilization. 	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?					
	<i>TOTAL SCORE</i>					
<p style="text-align: center; font-size: 2em; font-weight: bold;">10</p> <p>Geodiversity, Earth protection and sustainable development</p> <ul style="list-style-type: none"> • Geodiversity is a precious gift of the Earth. • We should try not to affect it or destroy the special, most beautiful formations (Geomonuments). 	<p><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></p> <p>Would you like to know:</p>					
		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?						
<i>TOTAL SCORE</i>						
<p style="text-align: center; font-size: 2em; font-weight: bold;">11</p> <p>The Earth yesterday, today and tomorrow</p>	Would you like to know about:					
		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 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?						



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	11.8.about exploitation and changing of soils?					
	11.9.about exploitation and pollution of waters?					
	11.10.what to expect in the 21 st century in regional and global environmental changes?					
		TOTAL SCORE				
<p>Brief geological history of your region</p> <p>12</p>	Would you like to:					
		1	2	3	4	5
	12.1.know the geological history of your country in brief?					
	12.2.see a general cross-section of your country showing the main Geological units?					
	12.3.know the geologic evolution of your country from Pangaea onwards through geological maps and discussion of the main geological units?					
	12.4.know the Geology of the country including all main zones, etc. ?					
	12.5.know 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				
<p>Geological maps</p> <p>13</p> <ul style="list-style-type: none"> • Geologists represent the geology of surface on geological maps. • Geological maps are crucial instruments to understand Geology. • In geological maps show geological units. 	<i>Geological maps represent the geology of the Earth.</i>					
	Would you like to:					
		1	2	3	4	5
	13.1.know how geologists represent the geological units on a map?					
	13.2.know about topography; relief?					
	13.3.know about geological structures?					
	13.4.know about geological units?					
	13.5.know about the age of geological Units?					
	13.6.see the geology of a region from the air?					
13.7.see the geological map of your country?						
		TOTAL SCORE				
<p>Geology in everyday life</p> <p>14</p> <ul style="list-style-type: none"> • Geologists always see 	<i>Almost all human activities are related with geology and geological processes</i>					
	Would you like to know:					
		1	2	3	4	5
	14.1.what are the main geological resources for Humanity? (For building, food,mining, water supply, construction					



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<p><i>the Geology and geological history of the landscape behind the beauty of the scenery.</i></p> <ul style="list-style-type: none"> • They are committed to explain it to the Society. 	<p><i>resources-quarrying, material of Earth and Geo-hazards).</i></p>					
	<p>14.2.what is the Geological Tourism (Geotourism)?</p>					
	<p>14.3. what sort of materials of your everyday life are connected with geological resources?</p>					
	TOTAL SCORE					
<p>HOW to teach geosciences?</p>						
<p>Which way would you like to be taught on geosciences?</p> <p style="font-size: 2em; text-align: center;">15</p> <ul style="list-style-type: none"> • Going to the field is the best way to see and learn "real" Geology. • Geological fieldtrips should be a customary activity to learn Geology in schools. 	<p><i>The best way to learn geology is looking at geological elements and structures directly in the field.</i></p> <p>What would you prefer to do to learn Geology?</p>					
		1	2	3	4	5
	<p>15.1.Attending lectures (through pupils centralized teaching activities like role play, debate, etc.)?</p>					
	<p>15.2.Attending lectures (through teachers' centralized teaching)?</p>					
	<p>15.3.Participating in geological activities in the field like geotrails etc.?</p>					
	<p>15.4.Reading books?</p>					
	<p>15.5.Seeing films and animation videos?</p>					
	<p>15.6.Interact with digital simulations?</p>					
	<p>15.7.Making Experiments in Laboratory?</p>					
	<p>15.8.Interact with analogic model simulations?</p>					
	<p>15.9.Seeing minerals and fossils in a microscope?</p>					
	<p>15.10.Making geological excursions (fieldtrips) to see geology in Nature?</p>					
	<p>15.11.Collecting fossils?</p>					
	<p>15.12.Visiting mines and collecting minerals?</p>					
	<p>15.13.Visiting protected Natural areas?</p>					
	<p>15.14.Working in teams in the class?</p>					
	<p>15.15.Participating in project work?</p>					
	<p>15.16.Visiting geological museums?</p>					
	<p>15.17.Visiting open air geological museums?</p>					
<p>15.18.Other (specify)</p>						
TOTAL SCORE						
<p>GENERAL REMARKS</p> <p style="font-size: 2em; text-align: center;">16</p>	<p>16.1.Describe the best moment of a geology lesson from your school life.</p> <p><i>Description:</i></p>					
	<p>16.2.Do you know the type of the rocks of your region? (If, YES... Which is the type?</p>	YES	NO	Type:		
	<p>16.3.Do you know the age of the rocks of your region?</p>	YES	NO	Age:		



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9

	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 have Geology lessons at school?				
	16.8. Would you like to study geology at the university? (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. Was the teacher teaching you geology at school a geologist? If NOT, which what was her/his specialization?	YES	NO	Specialization:	
	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 be taught.				
	1	2	3	4	5
	6	7	8	9	10

Free comment

17 Would you like to do any comment?

Please, write down your comment:

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