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**Comparative analyse of WATER in subjects related with the curriculum in:**

**Iceland Latvia Finland Portugal Spain Germany**

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| **Country** | **Level** | **Subject** | **General topics** |
| **Iceland** C:\Users\hsm\Desktop\icelandic-flag-map.png | **4th grade** | Biology  | * The importance of water in every day live.
* The water cycle. The melting of ice and glaciers.
 |
|  | **5th grade** | Geography | * Know the nearest rivers, lakes, streams and oceans around and in Iceland
 |
|  |  | Chemistry and physics | * The importance of water for plants and animal life
 |
|  |  | Biology | Water in nature* State of water in everyday life
* Drinking water purity importance
 |
|  | **6th grade** | Geography | * Knowing the nearest rivers, lakes, streams and oceans around and in the Scandinavian countries
 |
|  |  | Chemistry and physics | * The water H20
* The main water pollution sources
* Water quality by bio indicators
* Water cycle in nature
 |
|  |  | Biology  | * Water in the human body.
* The proportion of water in the human body.
 |
|  | **7th grade** | Geography | * Knowing the nearest rivers, lakes, streams and oceans in Europe
 |
|  |  | Chemistry and physics | * The ocean current and the importance of climate formation
* Water molecule
 |
|  |  | Biology | * Live organism in water.
* Water in the human body .
* The proportion of water in the human body.
 |
|  | **8th grade** | Geography | * The importance of water as the most important natural resource in the world and the basic for development of life on earth.
* The proportion of water on the surface of the planet.
* The location of the main oceans, freshwater lakes and rivers on the world map.
* The importance and function of the rain forests.
* The climate and water in atmosphere.
* The role access water has on urban development and position of civilization.
* The role water has as a way of transport and communication. (Oceans, rivers and canals).
* Hydric resources and water energy.
* Development aid in connection with water resources and use of hydric energy.
* Rivers and waterfalls in landscape.
* Ocean currents and the importance of the Gulf stream to human habitation in the northern part of the world.
* The importance of fisheries and connected industries.
* Coastline culture.
* Water pollution.
* The ice of the North- and South-poles as freshwater resources.
* Management of the ocean resources.
* Navigation routes and possible changes due to melting of the polar ice.
* The effect dams and other hydrographical complexes have on the landscape and culture.
 |
|  |  | Chemistry and physics | * Water in the chemical reactions.
* Characteristic of water molecules.
* Distillation of water.
* Different form of water.
* Acid rain.
 |
|  |  | Biology | * Water in live organism.
* Water in the human body.
* The proportion of water in the human body.
 |
|  |  | Art | * Water as an endless inspiration in poetry, literature and visual arts.
* Physical use of water in creating visual art.
 |
|  | **9th grade** | Biology | * The climate: water in atmosphere, rain and steam
* The sea
* The importance of water in the climate
 |
|  |  | Geography | * The role water has as a way of transport and communication. (Oceans, rivers and canals).
* Water energy.
* Rivers and waterfalls in landscape.
* Ocean currents and the importance of the Gulf stream to human habitation in the northern part of the world.
* Coastline culture.
* Water pollution.
* The ice of the North- and South-poles
 |
|  |  | Chemistry and physics | * water molecule structure-chemical bonds
* electrolytic and water
* pH
 |
|  | **10th grade** | Astronomy | * Water on earth and in space
* Moon and tides
* Winter and summer
 |
|  |  | Physics | * Temperature in water
* Heating and cooling e.g. Icelanders heat up their houses with warm water
* Electricity made from waterfalls and hot steam
* Lightning’s
* Sound through water l
* Light and water, reflection and more
* Nuclear energy and water cooling
* Energy in water
* Water pressure
* Density in materials/water
* Hydraulic equipment
* Movement and water
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| **Portugal****C:\Users\hsm\Desktop\184px-Flag-map_of_Portugal.svg.png** | **1th grade** | Experiments with water | * Capacity/volume, regardless of shape of the object
* Identify some physical properties of water
* Recognize materials floating and not floating
* Investigate the effect of water substances
 |
|  | **5th grade** | Natural sciences | * The importance of the water for living bodies
* Understand the importance of water to living things
* Understand the importance of water quality for human activity
* Water and the influence of abiotic factors on morphological and behavioural adaptations of animals
 |
|  | **6th grade** | Natural sciences | * Water related to social problems, pollution, water/soil,
* Water and healthy enviroments
 |
|  | **7th grade** | Geography | * The rivers in the landscape
* The hydrography as a landscape unites
* The water in atmosphere
* The climate water in atmosphere, rain and steam
* The marine current and sea erosion
* The importance of water in the climate
* Water in the atmosphere: Liquid, solid and steam
* The precipitation
* Hydrographical complex
* Rivers as water supplies
 |
|  |  | Physical and Chemistry | * Planet earth have unique characteristics related with water in liquid form
 |
|  | **8th grade** | Geography | * Hydric resources
* Water energy
 |
|  |  | Physical and Chemistry | * Importance of water in the chemical reactions
 |
|  |  | Natural sciences | * The earth subsystem Hydrosphere
* The importance of water as abiotic factor for animal and plants
* Natural catastrophe Foods
* Water pollution
* Hydric resources
* Water supplies, potable water in the planet
 |
|  | **9th grade** | Geography | * Acid rain, the decrease of ozone layer
 |
|  |  | Natural sciences | * Water in the human body
* Water energy
 |
|  | **10th grade** | Geography | * Water resources
* Underground water supplies (aquifers) Rivers, basins and lakes
* Thermal water and spring water
* Management of water resources and water protection
* Problems connected with fresh water resources
* Management of the ocean and maritime resources
* Ocean water
 |
|  |  | Physic and Chemistry | * Characteristics of water molecule
* Proprieties of water
 |
|  |  | Biology and Geology | * Water in live organism
* Importance of some proprieties of water for organisms
* Acid rain, the decrease of ozone layer
 |
|  | **11th grade** | Geography | * Water (Rivers and oceans) as systems of communications and transport
 |
|  |  | Physic and Chemistry | * Water resources
 |
|  |  | Biology and Geology | * The problems connected with: the anthropic occasions close rivers and oceans
* Water supplies: rivers and underground water (aquifers)
 |
|  | **12th grade** | Geography | * The water wars
* Ambiental problems: decreasing of fresh water
 |
|  |  | Geology | * Underground water supplies: Aquifers
 |
| **Latvia****C:\Users\hsm\Desktop\Latvia_flag_map.png** | **5-6th grade** | Science | * The importance of water to plant and animal life
* Knowing the nearest rivers, lakes, streams
* The types and precipitation Water in nature
* State of eater in everyday life
* Drinking water purity importance
* The main water pollution sources
* Water quality by bioindicators
* Water cycle in nature
* Mountain streams an plain rivers
* Formation of the waterfall and rapids
* Freshwater and saltwater
* Solutions in everyday live
 |
|  | **7-9th grade** | Biology | * Assess air or water of-pollution through bioindicators
* Water role to human environmental impact of neighbourhood ecosystem an human organisms
 |
|  |  | Geography | Earth´s hydrosphere* Hydrosphere components, the World Ocean, ocean floor, shelf, edges Sea, inland sea, the new line in the mountains
* The importance of water resources in the natural course of the process and the lives of people in different regions of the world.
* The ocean current and the importance of climate formation
* Ice, glaciers and avalanche formation
* Continental glaciers and their importance of the earth´s fresh water resources structure
* The sources of pollution of the world´s oceans
* Baltic Sea and in the Gulf

Groundwater, sources* Latvian rivers, river basins
* Types of water pollution causes and effects lakes and regional location c
 |
|  | **8-9th grade** | Chemistry | * Water decomposition
* The pH in different water
* Acid rain formation and impact to environment

Water in human life:* Distilled water
* Physical properties of pure water
* Water reactions with metal oxides and non-metallic elements oxides
* Solubility of substances in water
* Modern drinking water treatment plants
* Drinking water preparation and wastewater purification
* The water pollution, water pollutants
* The effects of water pollutants to environment, human health
 |
|  | **10-12th grade** | Chemistry | * Disperse systems
* water as solvent
* water molecule structure-chemical bonds
* crystal hydrates
* electrolytic dissociation
* pH
* Water solution electrolysis
* Metal reacting with water
* Water role to chemical and electrochemical corrosion processes
* The water hardness
* Analyse water quality
* Hydrocarbon and other organic compound hydration.
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| **Finland****C:\Users\hsm\Desktop\Finland_flag_map.png** | **7th grade** | Biology | * Lake ecosystem (features of water, water cycle, flora an fauna and lakes)
* Factors threatening waterways as hypertrophication
 |
|  |  | Geography | * Oceans
* Rivers and lakes in the American Continent
 |
|  |  | Chemistry | * Water is essential for life/water for life
* The most important properties of water
 |
|  |  | Physics | * Properties of water
 |
|  | **8th grade** | Geography | * Water cycle on earth
* Saltiness of seas
* Pollution of waterways (seas, lakes, rivers)
* Fresh water resources and lack of clean and fresh water
* Marine areas surrounding Europe
* Erosion caused by water and ice
* Largest rivers and lakes in Europe
 |
|  |  | Chemistry | * Water molecule
* Acid rain
* Water and sewage treatment
 |
|  |  | Chemistry optional course | * Water analyses
 |
|  |  | Physics | * Density of water, buoyancy
 |
|  | **9th grade** | Geography | * Special characteristics of Finnish waterways (lakes and rivers)
* Finnish rivers and lakes
* The Baltic sea; ice age theme water overlaps theme wind when studding e.g. the formation of cyclones
 |
|  |  | Physics | * Water power plants
 |
| **Spain**http://upload.wikimedia.org/wikipedia/commons/8/81/Spain-flag-map-plus-ultra.png | **1th grade** | Environmental | * Responsible use of water
 |
|  | **2th grade** | Environmental | * Analysis of the aquatic ecosystem
 |
|  | **3th grade** | Environmental | * Characteristics of rivers
* Water cycle.
 |
|  | **4th grade** | Environmental | * Metrological variables: Humidity and precipitations.
* States of water.
* Changes of states of water.
 |
|  | **5th grade** | Environmental | * Metrological variables: Humidity
* Fluvial and glacial erosion.
* Pollution and waste of water
 |
|  |  | Math | * Relation between weight and capacity of water
 |
|  |  | Citizenship | * Valuation of the public service: supply of drinking water
 |
|  | **6th grade** | Environmental | * Density.
* States of water. Changes of states.
* Solubility in water
* Chemistry characteristics of water
 |
|  | **7th grade** | Biology | * Hydrosphere.
* Beginning and distribution of water on earth.
* Water in oceans, water in continents.
* Water cycle, water characteristics, states of water.
* Uses of water.
* Water pollution, waste water treatment, water saving.
* Meteorological variables: clouds and precipitations.
* Water is essential for life on earth.
* Water, molecular component of living matter
* Biological importance of water.
* Fluvial and glacial erosion.
* Density, volume.
* Solution, concentration.
* States of water, changes of states.
* Formula of the molecule of water.
 |
|  |  | Geography | * Water essential for life on earth.
* Hydrosphere.
* Coastal and submarine reliefs.
* Fluvial erosion.
* Continental water (river, lake, glacier and underground water) and marine water.
* The most important rivers, lakes and seas on earth.
* Water, an earth heritage.
* Parts of a river.
* Precipitation. Rivers and the landscape
* Weather, water and coast in human life.
* Over exploitation of water
* Most important rivers, seas, oceans, islands and peninsulas of Spain.
 |
|  |  | History | * Nile river and the ancient Egypt.
* River civilizations (Mesopotamia)
 |
|  | **8th grade** | Biology | * Plants to purify water.
* Submarine relief.
* Tsunami.
 |
|  | **9th grade** | Biology | * Management, pollution and treatment of water.
* Acid rain
* Coastal relief.
* Geological action of the continental water.
* Underground water
* Rapids
* Torrent
* Rivers
* Fluvial terraces.
* Infiltration.
* Aquifer.
* Glacier.
* Sea.
 |
|  |  | Geography | * Ocean, river, lake and underground water.
* Water and human occupation
* Precipitations
* Climograph.
* Europe's coasts.
* The most important rivers and lakes in Europe.
* Aquaculture.
 |
|  |  | Chemistry | * Solubility in water.
* Solutions.
* Water molecule
 |
|  |  | Phycology | * Density of water.
* Changes of states of water.
 |
|  |  | Technology | * Water pollution because of the production of electric energy
 |
|  | **10th grade** | Biology | * Water (terrestrial modelling agents)
* Water (environmental factor in the terrestrial environment)
 |
|  |  | Physics | * Communicating vessels.
* Hydraulic systems
* Archimedes' Principle.
 |
|  |  | Technology | * Water installation in a house.
* Hydraulic installation.
 |
| **Germany**  | **5th grade** | German | * Being creative with language rhymes and riddles about water
* Factual and functional text about water
* Literary texts(nature-water-related poems)
* Young readers literature(water-related)
* Various water-related texts
 |
|  |  | GSE=GeographyHistory and social studies | * Evolution, Genesis, and earth
* Orientation on maps(oceans)
* Environnemental protection (Rainwater utilisation etc.)
* The Nile-lifeline of Egypt
 |
|  |  | PCB=Physical, biology and Chemistry | * Nature in the course of the year
* Properties of chem. Substances(solubility, boiling- and melting temperature)
 |
|  | **6th grade** | German | * Being creative with language rhymes and riddles about water
* Factual and functional text about water
* Literary texts(nature-water-related poems)
 |
|  |  | GSE=GeographyHistory and social studies | * Roman Empire(aqueducts, fountains, spas)
* Bavaria (rivers, lakes, channels)
 |
|  |  | PCB=Physical, biology and Chemistry | * Basic of life: water
* Properties of water
* Quality of water
* Habitat: water
* Organisms who live near/in water
* Adapting of organisms to the habitat water
 |
|  |  | Religion (C and P) | * Symbols and sacraments(original symbol of mankind : baptism, water, etc.)
 |
|  | **8th grade** | German |  |
|  |  | GSE=GeographyHistory and social studies | * Europe tourism, oceans, lakes, rivers i.e. river cruises on the Main River
* Europe Single Market: getting to know rivers, seas and oceans as important traffic routes
 |
|  |  | PCB=Physical, biology and Chemistry | * Quality of soil: water-holding capacity, pH-level, compaction of soil
* Function of forests: water reservoir, recreation area (lakes, rivers, moors, etc.)
* material properties in daily life and technology
* environmental protection environmental hazards of water (chemical substances, fertilizers, acid rain, road salt)
 |
|  |  | Religion (C and P) | * Water of life (catholic and protestant) symbols, rituals, baptism.
 |
|  |  | Politic | * Water mafia, who owns water rights?
 |