**Atmosphere**

What will be the weather like today? Lesson, students construct their own weather instruments (Motivate and Attract Students to Science Project – Lesson of WG3 Low Achievers in Science)

<http://mass4education.eu/edupackage-for-teachers/for-teachers-en>

poster: Helen Parkhurst, The Netherlands: [The influence of fireworks on the amount of aerosols.](https://www.globe.gov/news-events/globe-events/virtual-conferences/2018-international-virtual-science-symposium/virtual-science-symposium-reports/projectdetail/globe/the-influence-of-fireworks-on-the-amount-of-aerosols-?backURL=https%3A%2F%2Fwww.globe.gov%3A443%2Fnews-events%2Fglobe-events%2Fvirtual-conferences%2F2018-international-virtual-science-symposium%2Fvirtual-science-symposium-reports%3Fp_p_id%3Dcommonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_pos%3D1%26p_p_col_count%3D2%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_reportType%3Dscience_fair_report%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_yearFilter%3D2018%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_orgFilterId%3D14026%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_gradeLevel%3D%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_protocolIds%3D%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_andProtocolIds%3Dfalse%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_displayStart%3D0%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_sortCol%3D4)

poster: Skola Za Medicinske Sestre Vrapce, Croatia: [Why do students absent?](https://www.globe.gov/news-events/globe-events/virtual-conferences/2018-international-virtual-science-symposium/virtual-science-symposium-reports/projectdetail/globe/why-do-students-absent-?backURL=https%3A%2F%2Fwww.globe.gov%3A443%2Fnews-events%2Fglobe-events%2Fvirtual-conferences%2F2018-international-virtual-science-symposium%2Fvirtual-science-symposium-reports%3Fp_p_id%3Dcommonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_pos%3D1%26p_p_col_count%3D2%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_reportType%3Dscience_fair_report%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_yearFilter%3D2018%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_orgFilterId%3D14026%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_gradeLevel%3D%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_protocolIds%3D%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_andProtocolIds%3Dfalse%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_displayStart%3D0%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_sortCol%3D4)

Poster: St.Joseph´s Secondary School, Castlebar, Ireland: A Comparison of AOT levels in highly industrialised areas with lesser industrialised areas.

Poster: St.Clares Primary School, Ireland: Air Quality Investigation in our Locality

Both available here: <https://www.globe.gov/web/ireland/home/about/resources>

IVSS: Does the Wind Direction Affect the AOT? USA

<https://www.globe.gov/do-globe/research-resources/student-research-reports/projectdetail/globe/does-wind-direction-affect-the-amount-of-aerosols>

Data at Altitude – GLOBE Data Explorations - [Data at Altitude: A GLOBE Data **Exploration**](https://www.globe.gov/documents/348614/353086/Data%2Bat%2BAltitude-%2BA%2BGLOBE%2BData%2BExploration/560f6468-4f38-4511-9ce0-8429af934dbe)

GLOBE Elementary – Clouds, Air Quality and Climate module storybooks

<https://www.globe.gov/web/elementary-globe>

**Soils**

It´s Raining Cats and Dogs – Lesson: Students learn causes of erosion and its impact on nature and human. They realize how it is possible to influence erosion. (Lesson of WG2 Early Inquiry)

Moving Soil – Lesson: soil erosion – classroom experiment and survey outdoors (Lesson of WG3 Low Achievers in Science)

Both lessons were developed in Motivate and Attract Students to Science Project, available at

<http://mass4education.eu/edupackage-for-teachers/for-teachers-en>

IVSS: Valuable Earthworms, Croatia – ppt

<https://www.globe.gov/do-globe/research-resources/student-research-reports/projectdetail/globe/the-valuable-earthworms-of-our-globe-station>

IVSS: Shumate Middle School - SMAP Soil Moisture Study – poster

<https://www.globe.gov/do-globe/research-resources/student-research-reports/projectdetail/globe/shumate-middle-school-smap-soil-moisture-study>

Soils as Sponges – GLOBE learning activity - [Soils as **Sponges**: How Much Water Does Soil Hold?](https://www.globe.gov/documents/10157/14685348/Soils%2Bas%2BSponges-%2BHow%2BMuch%2BWater%2BDoes%2BSoil%2BHold.pdf)

GLOBE Elementary – The Scoop on Soils Storybook

<https://www.globe.gov/web/elementary-globe>

**Hydrosphere**

Pond Skaters without Skates – Lesson: Students name several species of organisms that move on the water surface and explain how they move. They explain the effect of surface tension of water.

(Motivate and Attract Students to Science Project – Lesson of WG2 Early Inquiry <http://mass4education.eu/edupackage-for-teachers/for-teachers-en> )

Case Study #1: Kadan High School: Using Eco-Schools to take care of a local stream

Srednja skola Mate Blazine Labin, Croatia: [BLUE FLAGS ON OUR BEACHES](https://www.globe.gov/news-events/globe-events/virtual-conferences/2018-international-virtual-science-symposium/virtual-science-symposium-reports/projectdetail/globe/blue-flags-on-our-beaches?backURL=https%3A%2F%2Fwww.globe.gov%3A443%2Fnews-events%2Fglobe-events%2Fvirtual-conferences%2F2018-international-virtual-science-symposium%2Fvirtual-science-symposium-reports%3Fp_p_id%3Dcommonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_pos%3D1%26p_p_col_count%3D2%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_reportType%3Dscience_fair_report%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_yearFilter%3D2018%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_orgFilterId%3D14026%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_gradeLevel%3D%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_protocolIds%3D%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_andProtocolIds%3Dfalse%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_displayStart%3D10%26_commonprojectsportlet_WAR_globegovcmsportlet_INSTANCE_zzJw4JJrAeZX_sortCol%3D4)

GLE: Hydrology at very different locations of a stream, Switzerland

[https://www.globe.gov/documents/14028/50746849/\_Hydrology+at+Different+Locations+of+a+Stream+Switzerland.pdf/a66b5b6a-adaf-4d8c-9611-1fe36d5fd37f](https://www.globe.gov/documents/14028/50746849/_Hydrology%2Bat%2BDifferent%2BLocations%2Bof%2Ba%2BStream%2BSwitzerland.pdf/a66b5b6a-adaf-4d8c-9611-1fe36d5fd37f)

WATER-PATHS-2016-2017-PRESENTATION\_Italy

<https://www.globe.gov/documents/14028/50746849/_WATER-PATHS-2016-2017-PRESENTATION_Italy.pdf/13f2a754-1282-4dfa-a14f-0960f989f478>

IVSS: Comparing Water Quality Data Before and After Improvements To The Combined Sewer Overflow along Norwalk Creek – poster

<https://www.globe.gov/do-globe/research-resources/student-research-reports/projectdetail/globe/comparing-water-quality-data-before-and-after-improvements-to-the-combined-sewer-overflow>

GLOBE Elementary – Water module storybook

<https://www.globe.gov/web/elementary-globe>

**Biosphere**

[D. Carbon Travels Game (pdf)](https://www.globe.gov/documents/355050/c8fbe3d4-e7d3-4b6a-9629-38f616b59ff6)

Students play a dice game to follow a carbon atom as it travels through the Earth's carbon pools.

<https://www.globe.gov/do-globe/globe-teachers-guide/biosphere>

[F. Biomass Units (pdf)](https://www.globe.gov/documents/355050/7d34fc3b-ef3c-49b5-a7dd-fb4a74ece686)

Students learn to use a simple computer model to predict biomass, and carbon storage over time for any geographical biome. Can be done as a stand-alone activity or as a follow-up to conducting Carbon Cycle field measurements.
        <https://www.globe.gov/do-globe/globe-teachers-guide/biosphere>

How Long Do the Trees Sleep - Ceska Trebova, Czech Republic – Phenology

[https://www.globe.gov/documents/14028/50746849/\_Ceska+Trebova+-+How+Long+do+the+Trees+Sleep\_CZ.pdf/fc4cf25c-7fbe-4fac-a13f-053313078096](https://www.globe.gov/documents/14028/50746849/_Ceska%2BTrebova%2B-%2BHow%2BLong%2Bdo%2Bthe%2BTrees%2BSleep_CZ.pdf/fc4cf25c-7fbe-4fac-a13f-053313078096)

IVSS: A comparative study of vegetation cover under trees – Kenya

<https://www.globe.gov/do-globe/research-resources/student-research-reports/projectdetail/globe/a-comparative-study-of-vegetation-cover-under-trees>

IVSS: Long-term Phenology: Budburst 2001-2016 – Alaska

<https://www.globe.gov/do-globe/research-resources/student-research-reports/projectdetail/globe/long-term-phenology-green-up-green-down-2001-2016>

An Alaskan Spring Mystery (GLOBE Data Explorations) - [An Alaskan Spring Mystery: A GLOBE Data **Exploration**](https://www.globe.gov/documents/348614/353086/An%2BAlaskan%2BSpring%2BMystery-%2BA%2BGLOBE%2BData%2BExploration/bfedff73-5f32-4a73-a214-375b496211e0)

GLOBE Elementary – overview of activities (Seasons)

<https://www.globe.gov/web/elementary-globe>