AN ACCESSIBLE MICROPLASTICS MONITORING PROTOCOL

Enabling students and citizens to become microplastics hunters

Microplastics have become a well-known environmental concern in all Earth spheres: Atmosphere, Biosphere, Hydrosphere, and Pedosphere.

GLOBE Italy and Deakin University have been partnered to develop and test a draft protocol for microplastics monitoring, with the aim of submitting it to GLOBE as a “New Hydrosphere Protocol Proposal” after a “road test” with your schools. WE NEED YOUR HELP in testing this draft protocol in the field, with your schools, as part of a networked GLOBE Europe-Eurasia exercise in the period November 2022 - June 2023.

Follow the two webinars: Webinar 1 - 25 Nov, 13:30 CET & Webinar 2 - 09 Dec, 13:30 CET

What you will receive:

- Methodological materials for students
- Teacher training live sessions
- Students training support and activities
- Gain access to a unique microplastics image database
- Access to panel of experts

What you will learn:

- What are microplastics and where do they come from
- The impact of microplastics on our environment
- How to use scientific equipment to sample microplastics and monitor microplastics in water

To register [Click here]

MMPT
MICROPLASTICS MONITORING PROTOCOL TRIAL

Globe Italia

IFM INSTITUTE FOR FRONTIER MATERIALS

DEAKIN UNIVERSITY

LABTER-CREA Rete di Scuole

ARC Research Hub for FUTURE FIBRES

THE PLAN

TIMELINE (Points 2-4 adjustable to your school year, if needed)

1. **Nov-Dec 2022**, Teacher Training: 2 live Zoom sessions (1.5-2 h each), protocol-steps video tutorials and training materials shared by GLOBE Italy and Deakin University. Please note training is compulsory.

2. **Jan-Feb 2023**, Student training: you'll use learning activities (ones you will design, or those recommended by GLOBE Italy and Deakin University) and a database of reference microplastics images provided by Deakin University.

3. **Feb-Apr 2023**, Student activities, data collection and upload: you'll guide your students through sampling and analysis of the samples and data collection; your school will be able to load the data into a dedicated folder.

4. **May 2023**, Data analysis and trial discussion: data discussion with experts and other participants; this concludes the student-facing part of the trial.

5. **May - Jun 2023**, Project review: teacher survey and meeting with experts.

WHAT YOU WILL RECEIVE:

- **Two 1.5-2 h teacher training live sessions (Zoom)**:
  1. Plastics/microplastics: impact and literature
  2. Protocol materials and how to use them
  3. Ideas for learning activities
  4 Analysis and common observations, data collection and sharing
  5. Q&A
- **Teacher training materials**: relevant scientific literature and protocols on microplastics analysis, video tutorials.
- **Student training support and activities**: learning activities, video tutorials, reference images.
- **Access to a unique image database** built by Deakin University following the protocol: examples of microplastics and natural objects that you will be able to use for student training and assessment, and a sample analysis aid.
- **Access to a secure folder** where you will be able to upload your images and data sheets.
- **Access to a panel of experts** who may be able to review the images you and your students will gather through the trial (high-support schools).

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The commitment

The draft protocol uses materials that are either commonly available in European High Schools and research centres or can be acquired with low investment (approx. EUR 200 per sample preparation kit) and uses optical microscopes of maximum magnification as low as 160x (other solutions are also acceptable). The methodology is simple and requires no chemicals.

WHAT YOU WILL NEED

- Sampling bottles, bucket and/or telescopic sample bottle holder (for sampling from shore)
- Microbiology filtration unit (Thermo Scientific Nalgene Filter Unit), to fit 47mm diam. Filtration membranes, with tubing and syringe (or vacuum lines), optional 2 air check-valves (used in aquariums).
- Filtration membranes, 47 mm diam., 0.45 µm pore size
- Petri dishes, tweezers, deionised water spray bottle
- Microscope, with OPTIONAL camera or ability to photos
- Stationery, GPS, thermometer, camera for taking site photos
- Internet connection for image and data upload

TIME COMMITMENT – TEACHER (approx. 15 h)

- **Live training,** 2 x 1.5-2 h sessions via Zoom: **3-4 h**
- **Self review**, preparation of activities: **2-5 h**
- **Student training** using learning activities: as part of curriculum, tailorable to students' needs **4 h**
- **Protocol testing activity**: 2 x **1-3 h** sample collection, analysis and data recording
- **Webinars** for data discussions: **2 h**
- **End of trial survey**: **30 min**.

TIME COMMITMENT – STUDENTS (approx. 9 h)

- **Student training** as above: **4 h**
- **Protocol testing activity**: 2 x **1-3 h** sample collection, analysis and data recording
- **Webinars** for all schools for data sharing and discussions: **2 h**

REGISTRATION DEADLINE:

18th Nov 2022

CONTACTS:

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