Forum for Across the Curriculum Teaching

FACT

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Journal for the support and development of content and language integrated learning (CLIL)

Contents fact 20

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Introduction - FACTWorld at 20

Dear colleagues,

It was a cold autumn weekend afternoon 20 years ago, if my memory serves me correctly, in the William Shakespeare school in Sofia when the FACT Group was born. Elka Goranova suggested the name FACT as our meeting brought together both language teachers and subject teachers from a range of disciplines, it made so much sense to use the acronym 'Forum for Across the Curriculum Teaching' and it stuck.

None of us was expert in networking or running meetings, publishing. As a group, we decided that we would set ourselves goals, take notes, plan ahead and the meetings became a routine and we were even able to offer some financial support to colleagues travelling from other parts of the country to join the FACT meeting in Sofia.

Our first major undertaking was the decision to produce a magazine. This meant gathering together materials from colleagues, editing, and publishing the first FACT Journal, edition 1 of which came out in Spring 2000. FACT Journal 1 was printed on a photocopier. The journal has an ISSN registration with the Bulgarian National Library, and so, though a modest publication, we were able to offer colleagues a recognized 'home' for their work. This is the 20th edition of our Journal, and our thanks go to all the colleagues past and present for their contributions, to the children and students for their art work and examples of their school work. This journal brings together materials and presentations from the 2019 BETA Conference on the topic of waste and sustainability.

The FACT Group organized very successful summer trainings in Bulgaria, contributed to trainings abroad, and with the factworld@yahoogroups.com we have been able to maintain a network which still continues to grow (3542 members at the time of writing) and serve colleagues with an interest in CLIL around the world.

FACTWorld has also partnered with some prestigious institutions including the British Council in Bulgaria, the Association for Science Education (https://www.ase.org.uk/) and formerly Science Across the World and the International Union of Pure and Applied Chemistry (https://iupac.org/). Many, many thanks to all for your sponsorship, ideas and continuing energy source for our work in supporting teachers of content and language integrated learning around the world.

Here's to another 20 years!

Best wishes

Keith

This issue is dedicated to Lida Schoen, the Lady of Science Communication and guardian angel to FACTWorld with many thanks from all of us for your sponsorship of this special 20th Anniversary edition!

Thank you xxx

With my special thanks to Keith Kelly, founder of FACTWorld and my best teacher/professor in Communication.

Lida

From SAW to TrashedWorld

Science Across the World, Keith and me

It was a great pleasure for me to accept the invitation to write something about my many years' collaboration with Keith, the creator of FactWorld.

We first met in 2001. As a teacher trainer in Amsterdam and member of the Science Across the World team Keith asked me to replace pregnant Marianne Cutler, director SAW, during the British Council's conference: Science Across the Balkans and Baltics in Plovdiv. I tried, without a lot of preparation, to contribute with experiences as a teacher trainer and a SAW trainer and team member. Nigel Heslop and me discussed the strong points of this global exchange programme: teach locally, share globally. Students (15-18) investigate e.g. food, environment, safety in their community and/or country and share their findings with students somewhere on the world. We started with exchange forms in envelopes with beautiful stamps, later we used fax before internet took over. It was a revolutionary programme with ready-made resources for students and teachers with open questions on the different topics, an exchange form for the student's research results and a database for teachers with participating schools with data about age and abilities of students, the exchanged language and the period in the year the students were available for exchange.

In 2002/03 Keith organized 2 summer courses in Varna on the Black Sea. Subject was CLIL, with an important role for the Science Across the World programme. In spite of the heat participants worked very hard to compose 2 books with their contributions: Share your World (2002) and Ethical English (2003).

Young Ambassadors for Chemistry

Before Varna 2003 Keith we made an excursion to Cape Kaliakra and Balchik. A thunderstorm with heavy rains blew us to a pub on the beach. I was appointed as a member of the **C**ommittee on **C**hemistry **E**ducation (CCE) of IUPAC (**I**nternational **U**nion of **P**ure and **A**pplied **C**hemistry), a project driven non-governmental organisation with support from Chemical Societies in 47 countries all over the world. As I could summit a project, Keith and me decided to collaborate on a joint project for SAW and IUPAC. We wrote a project proposal to facilitate young people to advertise what they do with science to benefit their country and the wider world: **Y**oung **A**mbassadors for **C**hemistry (**YAC**). After approval we could organise YACs in 5 countries.

YAC event in	Public venue	Public (estimated number)
2004 Taipei, Taiwan	at Taipei 101, the one but tallest building in the world	75
2005 Buenos Aires, Argentina	Japanese garden	40
2006 Gwangju, Korea	in front of busy bus terminal	80
2006 Krasnoyarsk, Russia	inside University, too cold outside	40
2007 Grahamstown, South Africa	square in front of the cathedral	80

We started our project In Taipei with support of the local British Council. As it is difficult to find students, we began with training their teachers. In the programme we offered opportunities to use the SAW resources for international exchanges of students' research with possible practical work. We discussed a public event organised by the trained teachers with students practically working on DNA and cosmetics in a competition. As for cosmetics: which group created and performed the best TV commercial for it's just produced local cosmetics line? And for DNA, students building the world's longest DNA chain from sweets and tooth picks.

Apart from the practical work, all students acted some time as roving reporters, asking the public questions about chemistry and showing their work. We tried to get as much media coverage as possible:"(local) TV, articles and interviews in newspapers.

Taipei: YACs with their branding

Gwanju: best TV commercial for new cosmetic line

Krasnoyarsk: collaboration English-chemistry to overcome language problems

Grahamstown: roving reporter

Different countries offered different challenges. We tried to overcome communication problems during the teacher training by inviting also English teachers, that could collaborate with their science colleague during group work, not to have to use an interpreter too often. We learned a lot about teaching and learning in other cultures and about branding our event. We combined learning chemistry with many other creative disciplines like acting and drawing. The results were always fascinating and offered a lot of fun!. Apart from reaching our goal with the students during the public event, the responses of the public were rewarding: if my chemistry lessons at school would have been like the ones shown here ….

Spin off

Spin offs were numerous, we were invited to many other countries for different courses. To name a few:

British Council	**Comenius 2.2 INSET**	**BETA**
2003 Tallinn		
2004 Sheffield		
2004 Berlin		
2004 Beijing	2005 Amsterdam	2006 Plovdiv
2005 Bankya	2006 Amsterdam	2007 Blagoevgrad
2006 Vilnius		
2007 Gulf Region		

Wonderful to be able to collaborate with Keith during so many years as an inspiring colleague and good friend!

TrashedWorld

No surprise Keith went on using his creativity to start a new programme based on the documentary movie 'Trashed', narrated by Jeremy Irons: TrashedWorld - a global schools exchange programme on waste, also working towards the United Nations global goals for sustainable development. TrashedWorld clearly continues the Science Across the World's 'philosophy': teach locally, share globally!

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<tr>
<td>TrashedWorld</td>
<td>Keith advertising TrashedWorld during ASE Liverpool</td>
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The programme offers 4 modules with subtle revealing titles: 1 Trash / 2 Plastic, the World and Me, 3 Reclycing the World, and Me and Waste Incineration and Me, putting students in the middle of the problem: origin of waste, consequences and solutions. Waste management, as incineration and recycling offers many challenges for chemists. In my chemistry class I would concentrate on Incineration, producing energy and possibly polluting the environment and on recycling, that still has to be cost effective now and in the future necessary. How are we going to deal with this issue? What solutions are available? What choices are best for my region, my country, the world? Who decides?

Lida Schoen

Amsterdam, 31 March 2019

Natural Materials In My Classroom
by Lora Atanasova

Conservation of nature and its resources is a global problem that affects us all. As a teacher for young learners, I am extremely responsible for the theme of “nature”. An important goal, together with the study of English, is to induce a lasting interest of the students towards nature. Learning the world and nature from a very early age provides a solid foundation for engaging young people in tackling environmental issues.

The Teacher has the task of raising a sense of respect for nature and protecting it. Walking in small steps, we discover its beauty and realize the need to keep it for future generations as well. In order to be able to preserve nature, we need to know it first. We need to see it, touch it, feel it and love its essence. Then, we will also recognize the need to preserve nature in its primal and pure form.

Answer the big question: “How do you do that? How to attract the attention of the youngest? “appeared suddenly and unexpectedly. I’ve got inspired by my daughter. Only two years she boldly enters the hen’s house at her grandmother’s place and feeds them without fear but with interest. Holding a magnifying glass in hand, she tracks the path of the ants in the woods and discovers the little anthill hidden in the grass. Incursion to bloom in river waters explores the small frogs.

By analyzing these meetings of my daughter with the wild and untamed nature came to the conclusion: Even the brief moments of personal, direct contact of children with the real nature, not pictures, flashcards or pictures, give a strong and lasting beginning, proximity to nature and attitude towards the world.

The study of specific educational practices and the use of various pedagogical techniques, namely learning English through natural resource experience, quickly begins to deliver results in the classroom.

Anglia School in Plovdiv provides the opportunity to each

teacher, engaged with different environmental ideas, to apply his / her knowledge and skills to a classroom. With his regular works he/ she laid the foundations of a peculiar "natural idea" in the hearts of the students, studying English through natural materials.

Good world practices show that the organization of the pre – lesson activities by learning centers facilitates faster interaction in the learning process and gives good results.

The set up of different centers in the classroom - writing center, reading center, blocks area, studio, math's, becomes an important and integral part of the classroom activities during the day. There is always a science-based center with natural materials put in place. Students experiment, study, and perform a number of activities independently or in groups before the classes start. Students have access to different materials and add a sense of realism to the play experience.

This approach is widespread in the USA and England, but the use here in Bulgaria is a matter of time. Learning English and creating an inner need for nature conservation is a priority of Anglia School in Plovdiv.

Children need to explore to nature through natural materials as much as possible. Set up the classroom environment with natural materials so children can feel comfortable and creatable. We will try to stimulate their imaginations play through real objects, not only through toys. Children become much more willing to open up to different ides and improving positive friendship and communicative skills. Students start speaking in English while they are plying and having fun. This is a wonderful way to learn a second language in the conditions of playing with various objects of nature.

The developing of the fine motor skills, the pen holding skills, the correct setting of the hand, and the writing of letters and words are preceded by the use of simple rules and work with lines and shapes. Children get acquainted with basic concepts, to be able to recognize objects by type, size, color and sort them or to recognize objects that are the same or different;

Presenting different artists who create natural materials is also a powerful stimulus in learning English. In this way, children explore and learn while they are having fun. They

automatically make connections between real objects and imaged illustrations.

Creating stories through doing it, through playing with items from the nature is the powerful way to encourage their imaginative play and produce speech. Children start creating forest stories or start speaking about real situations which they recreate in their stories. They easily learn English as a second language and improve their vocabulary and create skills for free communication.

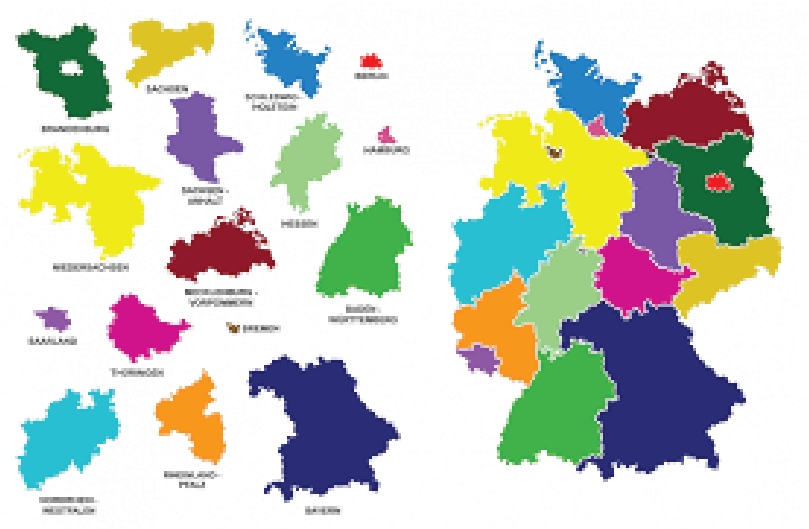
As it is known classification keys are interesting and intriguing way to identify a living thing. By answering the questions students can describe which group it belongs to. Writing on the white board is always an option but the use of the natural materials to build the key, as a puzzle with pieces from the nature, is something that students are going to remember.

Younger learners constantly explore the world around them. These small shiny rocks, leaves, beetles help the children to be intrigued by studying English through natural materials. Using different outdoor resources in the classroom teacher easily present and unfold the idea of preserving nature itself.

Microbeads around us

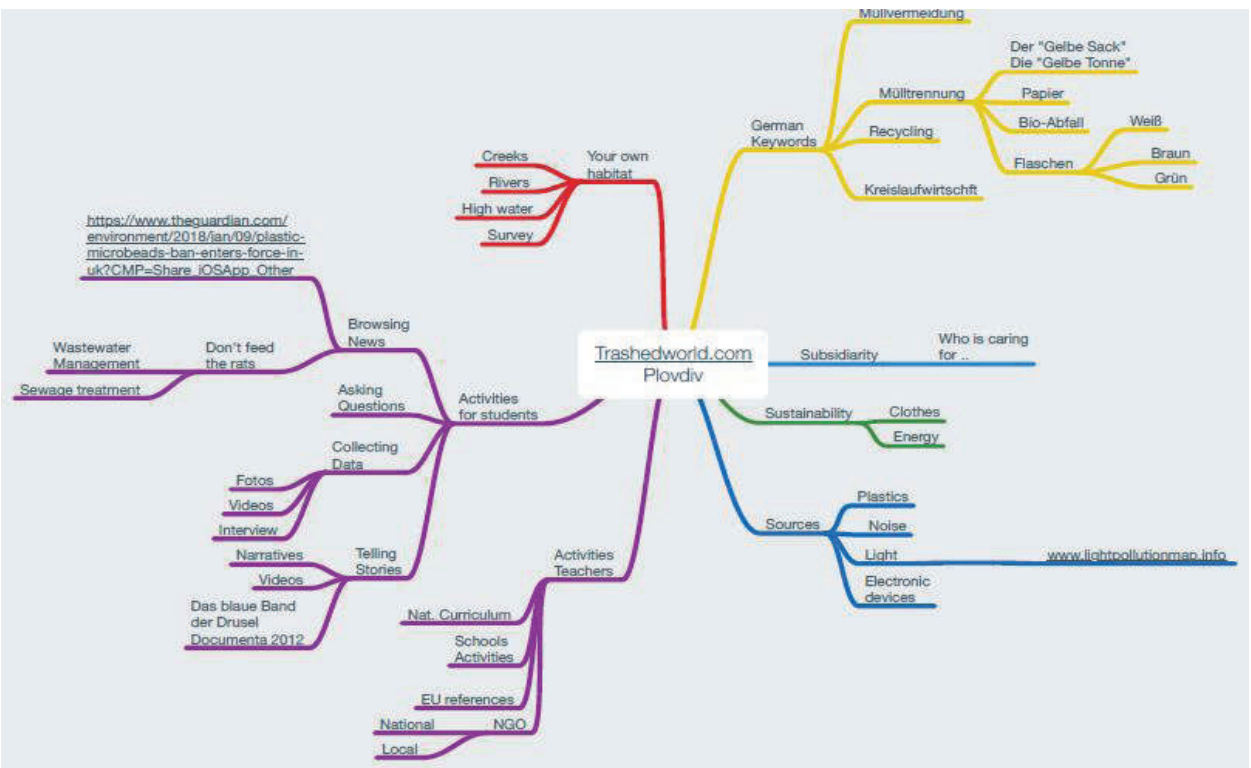
The workshop looked at techniques for examining microbeads.
Waste in the Curriculum - State of Hesse, Germany, E. Weisheit 2019

The Topic „Waste“ is not compulsory in our various curricula! School Departements and you as a teacher may decide to teach about „waste“ in the context of our curricula (see table).



- The Education System in Germany is build on the regulations in each of the 16 states of our country.
- We only see a „weak“ national framework!
- We see different curricula in each of the states and their education system!
- We do not have national exams at the end of grade 10 (Middle School) or 12/13 (Abitur Baccalaureate).

Participants were presented with the approach to lab work in Germany, namely in the city of Kassel.



Mind Map brainstorm of ideas

Participants were asked about their understanding of the terms ‘micro’ and ‘plastic’ and ‘beads’

Slide explaining ‘plastic’

There was a discussion around the term ‘Peeling’ which is used in Germany, and also in Bulgaria for the term ‘Scrub’ or ‘Exfoliant’ in the UK.

The workshop offered English teachers practice and examples of samples containing microbeads, how to look at them under a microscope, how to take photographs of them with a smartphone, and how to talk about size, measurements at a microscopic level.

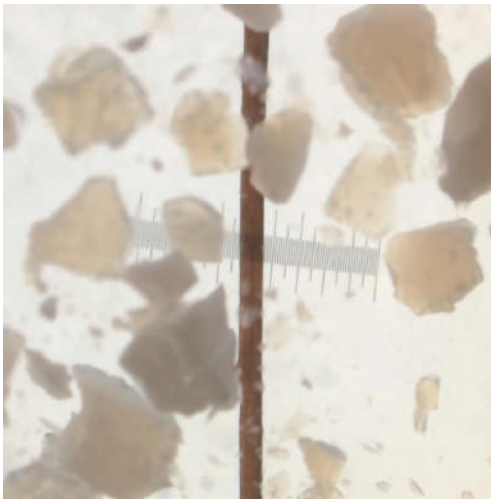
The presentation gave a ‘pollen’ example of a microbead and compared it to a 1 eurocent coin for size

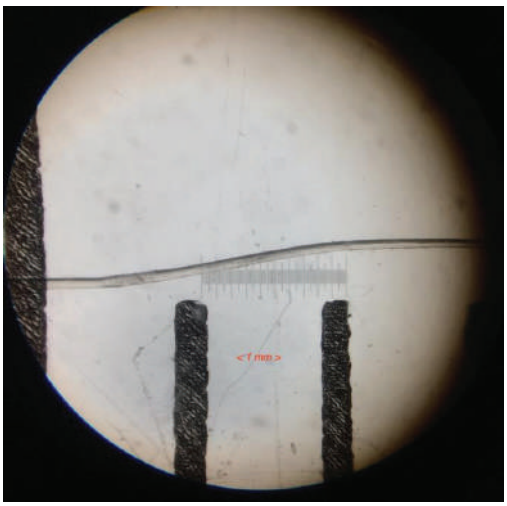
The aim of the workshop was to draw the interest of the language teachers to get their students examining microbeads around them whether it is in cosmetics (banned in the EU), in waters around us. Microbeads under a microscope (Smartphone !) compared to the scale of a object micrometer)

The participants were given a toothpaste (produced in Bulgaria), a shower skin scrub (made in France), and a skin scrub gel (made in Turkey) and they were taken through the procedure of diluting the samples, producing a sediment (discussing sediment floating, sinking), and finally taking sediment to look at it under a microscope.

Using a smartphone camera to take a picture of microbeads under a microscope

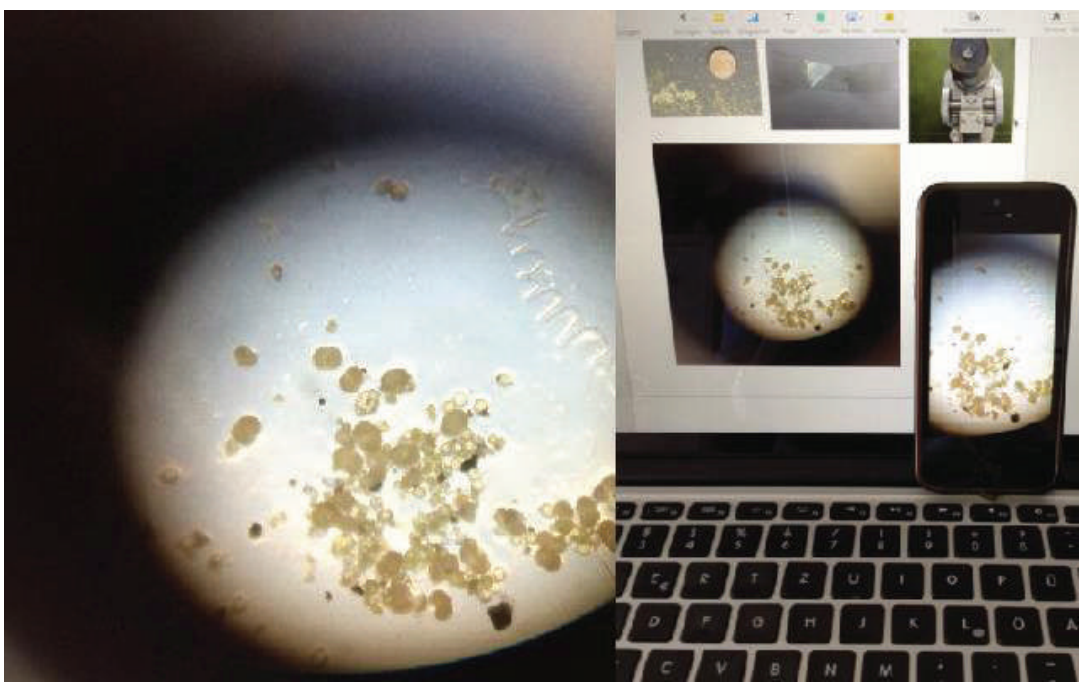
Participants also looked at the characteristics of synthetic (smooth) and natural, e.g., mineral (sharp, jagged) microbeads





A dropbox link was provided for participants to access materials from the workshop with an QR code

QR code link to workshop resources



Adopt the Adata – interactive environmental education on Maritsa river and Adata River Island

by Stanimir Navushtanov, Ventzislav Vassilev and Keith Kelly

"Adopt Adata" initiative start-up – approaching local schools and establishing student stewardship on Adata island and constructing a light recreational infrastructure. The initiative will build on the successful "Adopt The River" project, promoted by REC-Bulgaria.
Construction of light recreational infrastructure at the Maritsa River and close to Adata island, will use contemporary and traditional techniques for "green building", using only natural materials. The construction process will be described in flyers and promoted in the form of a 5-day workshop. Interactive outdoor educational workshop – demonstration of methodologies for environmental monitoring, adapted to the age and knowledge of the target group, rubber boat rafting demonstration and water sampling. The workshop will be performed back-to-back with the 'Green Construction' workshop, multimedia exhibition of Maritza Ecological research rafting experiences and a presentation of the 2012 Documentary movie "Trashed" with the exclusive narration of Jeremy Irons at "Anglia Cafe".

Maritsa river ecological research with inflatable boat trips are taking place since 90's in 20 century

Starting the initiative "Adopt Adata" – approaching local schools and establishment of student's stewardship on the Adata and the constructed light recreational infrastructure. The initiative will build on the successful "Adopt The River" project, promoted by REC-Bulgaria

The Project supports the sustainable development of the city of Plovdiv and contributes to the following objectives of Plovdiv 2019: The project aims at transformating forgotten urban spaces along the Maritsa River in line with the contemporary concepts of "green urban areas". The public focus on the Maritsa River and the Adata island will improve the attractiveness of the area and will provoke the community's curiosity about the construction with natural materials. The educational and promotional activities will raise public awareness, including the use of young people as "green messengers" in their families.

The constructed recreational infrastructure will open a new Interactive outdoor area adapted to the age and target groups in a variety of activities. The River boat trips will add fun new options to connecting river spaces so the town turns towards the river Maritza, which is a kind of forgotten space in the rural area, unlike a lots of other European river cities like Paris, Prague, Budapest where the river is a natural part of city life.

Attracting the Biological and Envi-

Construction of light recreational infrastructure at Adata island, using contemporary and traditional techniques for "green building", using only natural materials.
The construction process will be described in flyers and promoted in a form of 3-day workshop.

ronmental Faculties of the local Universities to the Project would be a great way to turn their attention to the opportunities offered by the Maritsa River and the great potential it has for becoming an urban oasis using sustainable design, innovative architectural strategies and alternative tourism. This is the main reason why the river, which has long since become an almost invisible part of the urban landscape, and the neglected island compound, are one of the key projects of Plovdiv European Capital of Culture program.

Our Goal is to attract the attention of young people, students and teachers of the nearby High schools, Universities and other local schools to the Maritsa River. This project invites the school authorities to embrace these opportunities of educational environmental studies for a future generation of biologist and natural science researchers.

We welcome partnerships to attract the teachers and their students from local High Schools and Faculties of the city universities to some of the activities as volunteers.

The main target group and audience would be the current generation of youg people in Bulgaria. Presenting the new art sites and culture practices to these young people would effectively contribute to the reintegration of the island Adata in the natural life of the city. The forgotten urban Park spaces will be revived with the contemporary concepts of “green urban areas”, used as a natural outdoor culture area for future initiatives. The educational and promotion activities will raise public awareness, making the young people “green messengers”, promoting sustainable development.

The main goal of the project is to develop a responsible attitude towards the environment among the the new generation of young people. Workshops, studies and research can be carried out along the city side of the river as future initiatives of Schools, Universities and educational organizations. The River island Adata is a perfect gathering spot for such type of open lessons and workshops and can be used for outdoor open air sessions. That’s why starting with a promotional way of making such kind of an educational work would turn the attention to the Foundation strategy targeted city area.

All Artists, attracted and inspired by the Nature are welcome to use the outdoor exhibition area for their projects in the coming summer and autumn of Plovdiv 2019 Cultural Capital of Europe.

Picker Pals - www.pickerpalsworld.org

"We have Picker Power!"

By Patrick Jackson - patjack67@gmail.com

Introduction

Picker Pals is an environmental action programme designed for primary school children, their families, schools, and communities. *Picker Pals* motivates children through immersion in a *Picker Pals* song and story world, equipping every classroom with a Picker Pack and inspiring children on local litter-picking adventures. Uniquely, *Picker Pals* connects literacy, music, storytelling, environmental learning, and action to give children the opportunity to play their parts in making the world a better place.

It was an honour to be invited to the 28th BETA-IATEFL Annual International Conference at the University of Plovdiv for the international launch of *Picker Pals*. The conference theme of *Changing the World One Class at a Time: Getting Through to Students* encompassed the goals of *Picker Pals,* as did the pre-conference CLIL day focusing on waste in the curriculum.

The Challenge

We are facing a global crisis of waste in the environment. Every part of the natural world is affected. We urgently need to find real, practical solutions to this crisis. Raising awareness in young people is an essential part of the solution. However, awareness without action is not enough. We need replicable systems and programmes that directly meet these huge socio-behavioural problems head on and give communities the motivation, education, tools, and structures to be part of the solution.

For most children, litter is the easiest to understand manifestation of the ecological crises we face. They see it on the streets they live in, the parks they play in, and the beaches they swim at. Simultaneously, they are being repeatedly told, at home, at school, and through the media, of enormous and destructive environmental changes that they themselves can have little impact on. *Picker Pals* allows children to actually do something to participate in and lead change in their own families and local areas. Families also become engaged by seeing their own part in the cycle of consumption, waste, and waste management. Becoming active in this way, children are joining a community of environmentally aware people, leading to a lifetime of positive participation.

Programme Methodology

Step 1: The teacher reads a fun *Picker Pals* eco storybook to the class. These books tell the story of the *Picker Pals* characters who battle against litter and other environmental hazards.

Step 2: Students discuss the content of the story and how it is relevant to their own lives and locality.

Step 3: Students do an environmental educational activity on a worksheet or interactive white-board.

Step 4: All the students sing the *Picker Pals* song.

Step 5: The teacher introduces students to the *Picker Pack*, containing an adult and child picker-upper, bags, gloves, high-vis vests, and safety information. One student each week takes home the *Picker Pack*.

Step 6: Motivated by the *Picker Pals*, kids do a litter-pick in their local area, working with an adult at all times to ensure they are safe and properly supervised.

Step 7: Students complete a report and presentation, telling their classmates the story of their litter picking adventures.

Step 8: Via the *Picker Pals World* website and social media, children learn what other *Picker Pals* around the world are doing to clean up their neighbourhoods. They also have opportunities to communicate with participating families and schools.

Results

Communities care about litter and see it as an area where real action has real effects. *Picker Pals* gives schools and communities a starting point, engaging children at a younger age than other programmes. *Picker Pals* is led by the children of the family, giving them a sense of ownership of their action and responsibility for their environmental impact. Children know that litter and lit-

tering is wrong and really feel this issue deeply. They naturally want to be part of the solution.

Picker Pals has made a promising start in a year-long pilot in County Dublin, Ireland. It has been universally well received by students, teachers, and school principals, and is now ready to be rolled out in other regions of the world. The organisers are seeking key NGO partners, schools, and sponsors to support and implement this roll-out.

In Ireland, *Picker Pals* has partnered with VOICE Ireland, an NGO with extensive experience within communities bringing about behavioural change that affects the quality of our natural environment. *Picker Pals* is looking to replicate this model and seeks similar organisations to work with around the world. These could be organisations involved in education, environmental activism, or positive social change. *Picker Pals* is also keen to find governmental, corporate, and philanthropic funding sources.

Goals

The wider aim of the *Picker Pals* programme is to rapidly create a worldwide community of mobilized children and primary schools with a Picker Pack in every classroom being used every week. Affecting behavioural change, such as changing waste segregation, recycling, or adopting new habits such as litter-picking is challenging but we believe that Picker Pals has a winning formula, being easy to implement and replicate. Organisations interested in getting involved in in *Picker Pals*, individuals, educators, NGO partners, schools, and potential sponsors should make contact via the “Be a Pal” page at www.pickerpalsworld.org

Conclusion

The scale of this problem means that only widespread systematic change is going to have any sort of significant impact. The root causes of waste in the environment need to be aggressively addressed as one of humanity’s highest priorities. This needs to be combined with what will be centuries of cleaning up of all the unwanted plastic waste in the environment. It will take generations of Picker Pals to sort this out but, amongst other initiatives, this is a model of the kind of

system that needs to be implemented globally. By putting the means of tackling waste directly in the hands of primary school children and their teachers and families, we can have a considerable and real impact, expediating the changes we need to make as a society.

Programme Background

This project originates in the educational and environmental activity of primary ELT author, Patrick Jackson (*Oxford University Press*), who began litter-picking and visiting primary schools, showing children interesting finds and organising local community clean-ups. Telling stories about these found items suggested the idea of connecting storytelling with environmental education, and how it might be possible to combine these with real practical action.

TrashedWorld – New Draft Module

This is a Module in the writing and what you have here is the first unit which sets out the topic and the geography of waste and the world's waters. You can access the film clip referred to at www.trashed-world.com. Any colleagues who decide to use this material are welcome to get in touch with me keith@anglia-school.info as there will be three more units to follow this one and your feedback is more than welcome!

Keith (30.10.19)

'WASTE AND WORLD WATERS'

Unit 1 – Major polluting rivers of the world

Students' pages

The main aim with this section is to raise awareness of the world's main rivers and the pollution they suffer. The aim is also to enable students to locate the rivers and how they connect with the world's seas and oceans. Additionally, the aim is also to get students to consider local rivers where they live, pollution, and how they connect with a sea or ocean.

1 Where are the top 10 polluting rivers?

- Get into small groups of 3 or 4. Your teacher will give you the name of a river and a blank map of the world. The river you have is ranked in the world's top ten polluted rivers. When you get your river, in your groups use the internet to research basic information about your river (Go to iBanPlastic). Find the following information.
a) What position does your river occupy in the top ten most polluted rivers?
b) Locate it on a map, be able to show where it is to your class.
c) Find out what some of the main problems of pollution are for this river.

- Present your polluted river to the class in one minute. Show on the class screen where the river is.

- What were the most shocking and interesting bits of information you learned?

2 Where does pollution end up in the Oceans? ('Ocean Gyres')

- Now watch the clip on ocean gyres. Mark the 5 ocean gyres on your blank map of the world.
- Many people think that ocean plastic creates a huge island of waste in the ocean, but what do the scientists say is the problem with plastic in the oceans? (it's a thin plastic soup, not a large island that you can pick up)
- Talk in your group. Which gyre or gyres are closest to the river your researched?

3 Local waterways and waste

- In your groups, use the internet to research local waterways. Answer the questions and create a basic map so show the information you find.
- What are the local rivers, lakes or other bodies of water near where you live?
- Are there links between local waterways and nearby seas or oceans?
- Identify any sources of pollution of these waterways.
- Finish this task for homework.

Teacher's Notes

Introduction
Explain the aims of the Module and describe the idea of connecting with classes around the world to discuss waste in the local environment. Make a show of signing up to www.trashedworld.com and ask where students would like to create partnerships around the world to investigate waste.

1 Get the class into groups of 3 or 4 and hand them the name of a river from the top ten. Give groups a blank world map to draw their river roughly where it is located on the planet.
Give them 15 minutes to research the river. When the students are ready, go round the groups and get

each to 'show and tell' their river to the class. This should be a minute for each group. Put the blank map up on the screen, and allow students to draw on the image where their river is located so that at the end of the 'show and tell' activity you have a completed map of top ten polluted rivers. When each group has presented, ask the class as a whole what were the most shocking things they learned about pollution from these rivers. Annotate the map with a collection of these facts (e.g., Indus river dolphin now extinct).

2 After the 'show and tell', write up the phrase 'ocean gyres' on the board. Explain that an ocean gyre is a rotating ocean current where waste from all over the world eventually collects. Show the clip on ocean gyres (M5U1C1) and tell the students to mark the 5 ocean gyres on their world map.
Play the clip again and pause at the right spot to check their drawings of the gyres.

Have a class discussion about the links between the polluting rivers and the gyres, stress that a gyre may be a final destination for a piece of plastic waste. The aim here is to understand this link, namely that a piece of waste thrown away locally, could end up in an ocean gyre. However, you may wish to extend the discussion further with your students depending on your own knowledge, background and interest.

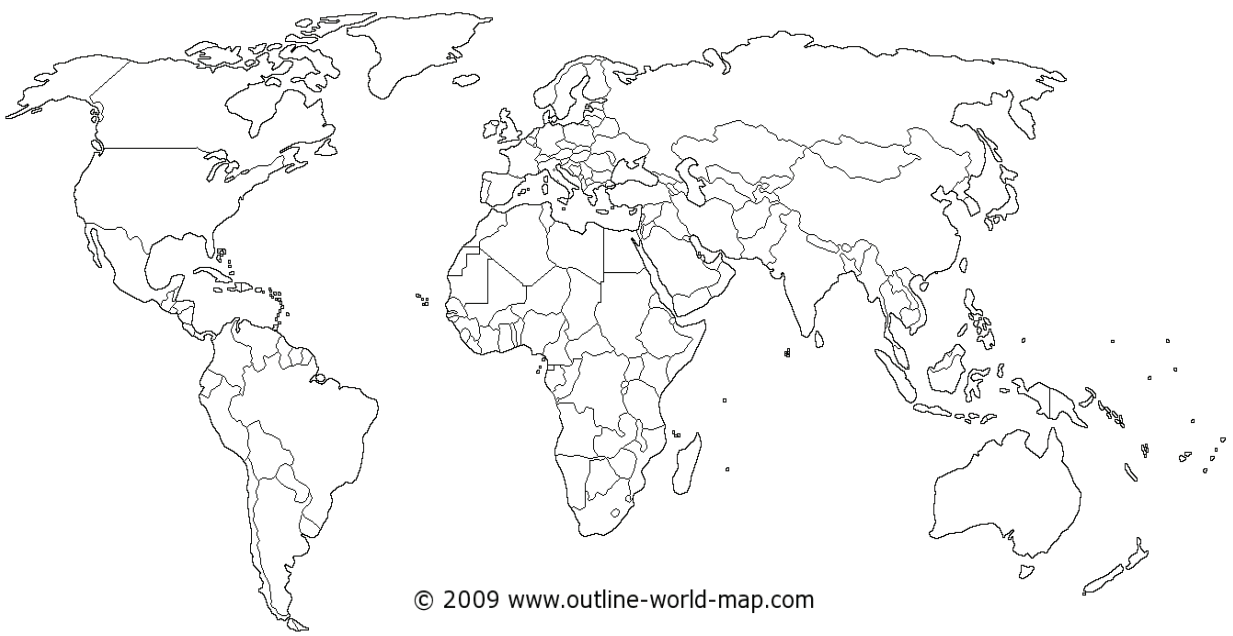
TW clip – Ocean Gyres (M5U1C1)

3 Get the students back in their groups to research local waterways and pollution. Direct them to the questions to guide their internet research. Again, create a map of the local area and show a) how local waterways connect with nearby seas and / or oceans, and b) identify possible sources of pollution of these waterways.
If needed, set this task to finish the map as homework and to report findings back in the next lesson.

<u>World Top Ten Polluted Rivers</u>

Mississipi	Buriganga	Ganges
Niger	Sarno	Marilao
Yellow	Indus	Yangtze
	Citarum	

Blank World Map



Future in the past – years went by

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Sometimes the future foreseen in films or books comes true. The year 2019 is presented in *Blade runner* (1982). The original version of the film is made on the base of the science fiction novel *Do androids dream of electric sheep*? (Phillip K. Dick, 1968). The next versions (1992, 2007) change some features in order to modernize it and in 2007 a computer game appears trying to create an atmosphere as close as possible to the original one. And in 2017 *Blade runner 2049* follows/continues the story of the first one, even starring some actors from the very first one.

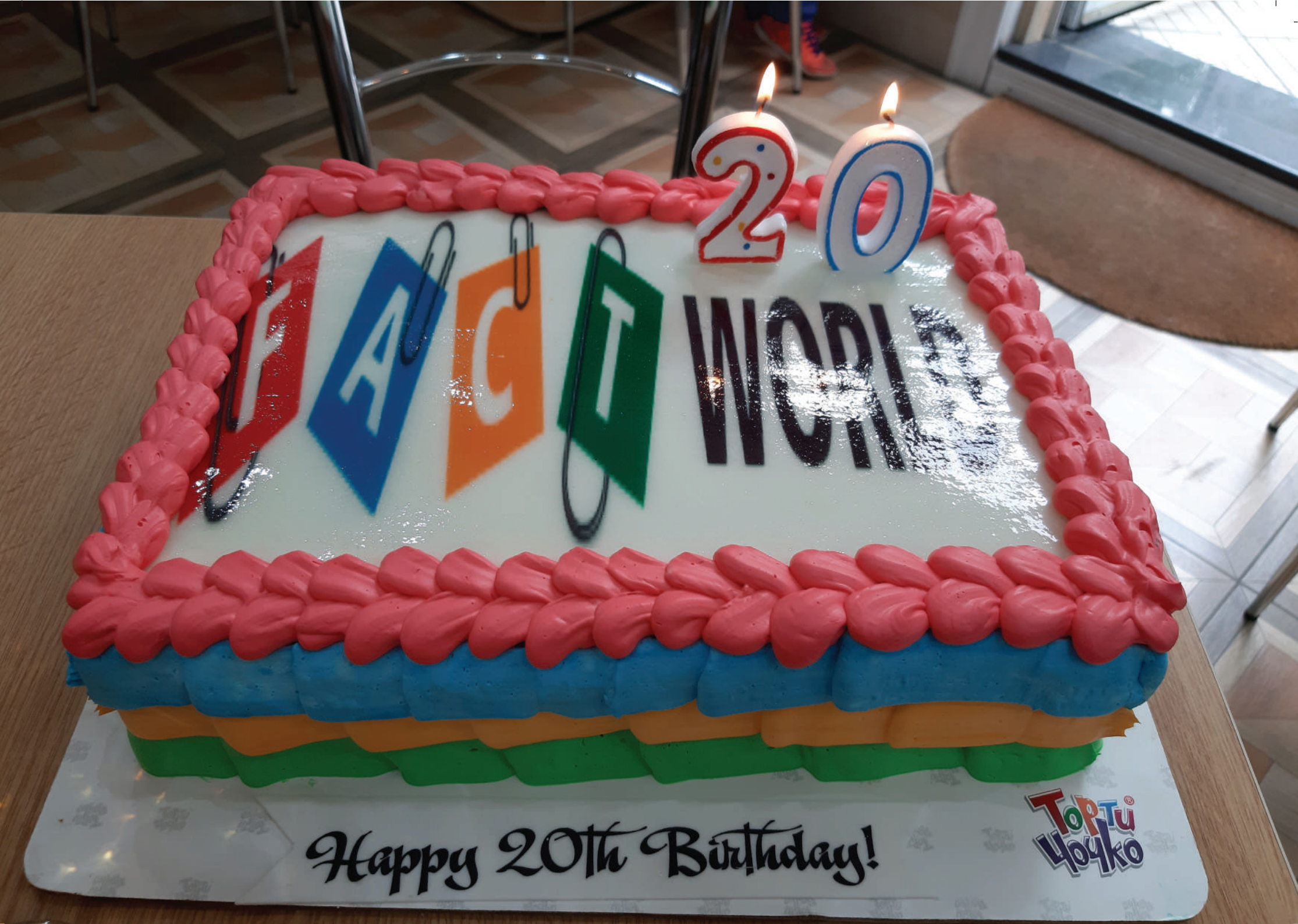
So, how did people see the future, are there any coincidences between the authors' thoughts and the reality today?

You can use the trailers and ask students to write in a table differences and similarities between authors' imaginations and contemporary situation, e.g. vehicles or means of transport, clothes, smoking, drinking, etc. Then, using language of comparison (where necessary support can be provided), students present their ideas. Comparison between groups of the same age could be done. Students might be asked to compare other countries they had visited (EU and beyond) with ideas from the films and Bulgarian reality.

Example for the table:

Version	Similarities	Differences	Notes
Novel 1968			
1982			
1992			
2007 (game)			
2017			
Blade runner 2049			

At the end students could be asked to develop their own version for the year 2049 and 2149, which can be done either as a speaking or writing activity.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LEGO WORLD
Happy 20th Birthday!
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