

# Eco Drama's Magic Van Tour



## Final Report 2012-15



## Climate Challenge Fund



PART OF THE  
Keep Scotland Beautiful  
CHARITY



natural  
scotland  
SCOTTISH GOVERNMENT



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## Who We Are...

Eco Drama engage, entertain & inspire people of all ages to value and care for our natural world. Through inventive theatre, music, storytelling and creative learning workshops, the company are passionate about making work which encourages greater awareness of nature and reminds us we are part of an amazing living planet.

## What We Do...

We deliver theatre productions and workshops to schools, festivals, theatres and community venues across Scotland, touring in a vehicle run on renewable bio diesel. The company also create Resource Packs & CPD Teacher Training linking to the Curriculum to ensure a legacy of learning and practical action.



## Where The Project Grew From...

Our idea for the Climate Challenge Fund Project 2012-15 was a creative response to nursery, primary and secondary schools in Glasgow who were looking to develop their Sustainable Development Education curriculum through creative learning experiences. As theatre-makers and creative learning practitioners, we set out to explore fresh ways in which nature connection work is designed and delivered, using our skills to create imaginative learning experiences that engage both hearts and minds, and inspire practical action.

## Our Journey...

We have been telling hopeful stories, stories that offer possibilities for new ways of living, stories that magnify the natural world in all its greatness and wonder. We have been questioning the culture and particular set of behaviours and values that define us.

We have been inspiring minds with technologies of the future, passing on lore of Scotland's forgotten apple heritage, exciting 3-7 year olds about the wonderful world of worms. We have been training up a new generation of recycling heroes, debating 21st century oil use with S1 students through role play, planting orchards in schools and communities across Glasgow and composting food waste. We have been collaborating, learning, celebrating and reflecting on the significance of environmental education and learning.

We have been trying to tell stories that contain the seed of a better future. Striving, always with trust and hope, to inspire children, young people and wider communities that what they do as an individual, and as a community, does matter. That every small change or action counts.

This Final Report encapsulates our 3 year journey with the collaborating schools and communities across Glasgow. It seems fitting to highlight one participant's words at the end of taking part in The Oil of Life programme: - *"Every small change will count in the long run and I hope I can inspire others to do the same."*

We hope you enjoy, and gain inspiration, from reading this Final Report.

Eco Drama, March 2015



## PROJECT HIGHLIGHTS

In 3 project years our Magic Van Tour reached:



**25,353**  
**participants!**



We toured 4  
Productions and  
3 Workshops

Carried out 214  
Primary School  
Visits

Visited 15  
secondary  
schools

Supplied 44  
wormeries to  
schools

Worked with 70  
volunteers

Planted 147 trees

Carried out 9  
teacher CPD  
sessions working  
with 56 teachers

Employed one  
full time Creative  
Director

Employed 1 Schools  
Coordinator & 1  
General Manager  
(part time)

Worked with 18  
Collaborating  
Artists and 5 Board  
of Directors

Delivered a  
Community  
Planting Day at  
Townhead Village  
Hall

Created an  
afterschool Eco  
Drama Group

In 2011 we estimated we could reduce 1,548.4 tonnes CO<sub>2</sub>e

Data collected throughout the project confirms we reduced 1,063.95 tonnes CO<sub>2</sub>e

However this was with a very low return rate of 31% on our Carbon Calculator Quiz

With a 100% return rate on the carbon calculator we can estimate that it would be closer to 1,585.25 tonnes CO<sub>2</sub>e

*Please note - these calculations are gathered from a mixture of primary data and non primary data. Further details are contained in the report body and accompanying appendices.*

**Watch our promotional video on link below:**

**<https://vimeo.com/93598311>**





## WHAT WE SET OUT TO DO...

Our programme of educational shows & workshops are tailored to engage with young people at each stage in their development, thus increasing the chance of real, long-term behaviour change at school & home.

### CO2 OUTPUTS

Outcome	Outputs	Output achieved
<p><b><u>CO<sub>2</sub>e Outcome 1</u></b></p> <p>Of <b>5,400</b> pupils, increase the number actively partaking in the principles of <b>Reduce, Reuse, Recycle, at school and at home by 10%</b></p>	<p>Deliver 60 days of <b>Recycling Heroes Workshops</b>, reaching approx. 5400 pupils in Glasgow City Primary Schools over 3 years.</p>	<p>We actually reached <b>6630</b> pupils with <b>Recycling Heroes Workshops</b> over 3 years. We used a “Carbon Calculator” to calculate carbon reductions by doing a before and after quiz with participants online.</p> <p>Of the total project respondents (33% Respondent Rate) we saw a <b>decrease in carbon emissions by 23%</b></p> <p>Of total respondents there was <b>21%</b> increase in the number actively partaking in the principles of <b>Reduce, Reuse and Recycle, at school and at home.</b></p>
<p><b><u>CO<sub>2</sub>e Outcome 2</u></b></p> <p>Of <b>5250</b> pupils, increase the number reducing energy at school &amp; at home by <b>5%</b></p>	<p>Deliver 30 days of <b>Eco Gadgets Workshops</b>, reaching approx. 1500 pupils; 20 days of <b>The Isle of Egg</b>, reaching approx. 2800 pupils; 24 days of <b>The Oil of Life Workshops</b>, reaching approx. 960 S1 pupils, over 3 years. (5250 pupils in total)</p>	<p>We reached <b>3091</b> pupils in total with <b>Eco Gadgets, The Isle of Egg and The Oil of Life.</b> (<b>The Isle of Egg</b> was cut back due to actor availability.)</p> <p>Of the total respondents on The Carbon Calculator (14% Respondent Rate) there was an increase in the number reducing energy at school &amp; at home by <b>17%</b> From the sample of respondents Carbon Emissions were shown to be reduced by <b>14%</b></p>

### CO<sub>2</sub>e Outcome 3

**Of 5250 pupils, reduce the number travelling to school by car by 2%, and so increase the number walking or cycling by 2%**

Deliver 30 days of **Eco Gadgets Workshops**, reaching approx. 1500 pupils; 20 days of **The Isle of Egg**, reaching approx. 2800 pupils; 24 days of **The Oil of Life Workshops**, reaching approx. 960 S1 pupils, over 3 years. (5250 pupils)

We reached **3091** pupils in total (as above outcome 2).

Of the total respondents on The Carbon Calculator (16% Respondent Rate) the number walking or cycling to school more than once per week increased by **8%**. From the sample of respondents Carbon Emissions were shown to be reduced by **8%**. *\*See Appendix 1 for further info on carbon calculator calculations for CO<sub>2</sub> Outcomes 1-3.*

### CO<sub>2</sub>e Outcome 4

**Cut food waste in 10 schools by 20% by helping schools to reduce, reuse & recycle edible food waste**

Create & deliver 50 days of a new **Food & Compost Workshop** for approx 3000 pupils in 10 Glasgow City Primary Schools over 2 years. Each school receives a week of workshops to cover the majority of their pupils, and a free compost bin. Teachers receive an activity pack, educational poster & compost leaflet; pupils receive 'Dinner Monitor' Badges.

**The Worm-An Underground Adventure** and its sister production **The Worm Inspectors**, reached **7,659** pupils throughout 2014 working with 50 schools.

**44 wormeries**, kitchen caddy's and support materials were provided. We calculated an annual saving from food waste related of **370 tonnes of CO<sub>2</sub>e**. We cut food waste in **50 schools** by **12%**

*\*See Appendix 2 for further info on primary data calculations for Food Waste.*





## COMMUNITY OUTPUTS

We also included Community Outcomes in our application:

Outcome	Outputs	Output achieved
<b><u>Community Outcome 5</u></b>		
<p><b>Working with approximately 9000 pupils, we aim to: -</b></p> <ul style="list-style-type: none"> <li><b>-Re-connect young people with where their food comes from</b></li> <li><b>-Increase awareness &amp; understanding about food production and its effect on the environment</b></li> <li><b>-Increase understanding of seasonality, local distinctiveness, and food miles</b></li> <li><b>-Inspire other growing initiatives within the 31 schools who were given apple trees to plant</b></li> </ul>	<p>Deliver 75 days of our new play, based on the topic '<b>Food &amp; the Environment</b>' (working title '<b>The Apple Show</b>'), reaching approx. 9000 pupils.</p> <p>Follow-up pack, educational classroom poster, 'Scottish variety' apple badges for pupils</p> <p>Enable 31 schools to plant a <b>Miniature Apple Orchard</b> in their school. With the help of a specialist hold cluster training sessions, providing schools with 3 free trees to get them started.</p>	<p>The Forgotten Orchard reached <b>7,858</b> pupils over 3 years, visiting <b>66 Primary Schools</b>.</p> <p>The Forgotten Orchard production aimed to reconnect young people with where food comes from, increase awareness and understanding about food production and local produce.</p> <p>We inspired growing initiatives within <b>32 schools</b> giving away <b>117 Scottish Heritage Apple trees</b> and proving training for them to plant and maintain a school orchard. We provided <b>6 CPD Sessions</b> led by <i>The Appletreeman</i> Andrew Lear, an experienced horticulturist, orchard enthusiast and trainer, working with <b>46 teachers</b>.</p>



Outcome	Outputs	Output achieved
<p><b><u>Community Outcome 6</u></b></p> <p><b>Working with interested local residents of Townhead, increase engagement in community spaces, and enhance the local green area by planting an apple orchard of 30 trees.</b></p> <ul style="list-style-type: none"> <li>-Improved bio diversity &amp; community green spaces</li> <li>-Increased community engagement in a low carbon future</li> <li>-Increased respect &amp; preservation of the environment</li> <li>-More volunteers, improved participation in community organisations</li> </ul>	<p>Organise, promote and deliver an <b>Apple Day Event</b> in 2013 for Townhead primary &amp; local community, performing our play &amp; planting a community orchard of 30 trees with the help of a specialist/ local volunteers.</p> <p>Council approval sought prior &amp; a suitable green space identified amongst many unused spaces in the area.</p>	<p>Over two days, on Friday the 29<sup>th</sup> and Saturday the 30<sup>th</sup> of November, <b><u>30 Scottish heritage fruit trees</u></b> were planted in an underused space at the back of the recently built Townhead Village Hall, Glasgow. With expert guidance from the 'Appletreeman' Andrew Lear, <b>over 70 volunteers</b> aged from 3 to 70 helped to dig holes, plant trees and protect them with the necessary stakes and guards. Some volunteers took part in training on fruit tree after-care and pruning.</p> <p>The community was then invited to enjoy entertainment that included a display of over 80 apple varieties, live folk music, face-painting, apple pressing and a performance of Eco Drama's production '<b><u>The Forgotten Orchard</u></b>'.</p>



## QUALITATIVE MONITORING AND EVALUATION PROCESS

To assess our qualitative feedback we used The 'Inspiring Learning' initiative from the Museums, Libraries and Archives Council. This is a suggested framework for classifying qualitative data into learning outcomes. We attempted to apply this to both pupil and teacher qualitative feedback for each workshop or production to identify the key **learning aspects** which have occurred as a result of Eco Drama's work.

### INSPIRING LEARNING FRAMEWORK (2008 – Museums, Libraries and Archives Council)

The framework identifies **five general learning outcomes (GLOs)** and recommends that these be used as a way of measuring outcomes and demonstrating the impact that a project has had on the participants.

Figure 1 -  
General  
Learning  
Outcomes

(Museums,  
Libraries and  
Archives Council,  
2008, retrieved  
from  
<http://www.inspiringlearningforall.gov.uk/learning/>)



From the qualitative feedback gathered throughout our projects 2012-2015 we were able to see a clear progression through each of the learning outcomes and the interconnectivity of each outcome was positively mirrored in the Eco Drama experience.



# How We Did It...





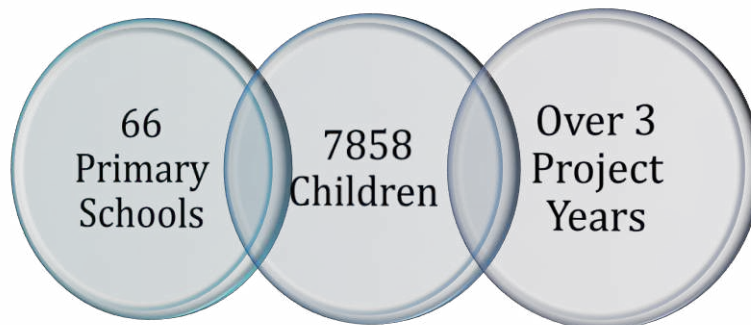


## THE FORGOTTEN ORCHARD

★★★★ The Scotsman *“Informative but entertaining...it succeeds by putting its story and characters first...a superb piece of storytelling.”*

*The Forgotten Orchard* is a funny and emotional tale that follows the relationship between Katy & her Grandad and his beloved orchard full of Scottish apple trees. It's a story of kinship, local food and legacy and re-welcomes to our plate the charismatic Scottish apples of our heritage; Tam Montgomery, Scotch Dumpling, The Bloody Ploughman (and all its gore) and the local Glaswegian apple Clydeside, bringing with it a local food message that is pertinent to our current times.

Throughout 2012 - 2014 Eco Drama delivered *The Forgotten Orchard* theatre show to schools, theatre venues and festivals across the central belt of Scotland reaching:



Festivals included [Apple Day at Edinburgh Botanic Gardens](#), [Edinburgh Science Festival](#), [Edinburgh Eco Schools Celebration at Napier University](#), [Family Learning Week 2012 Event](#), [East Ayrshire Harvest Festival](#), [Go Fruit and Nuts at Callendar House](#), [Townhead Orchard Planting Day](#) and the [2014 Orchard Gathering in Dunblane](#). It also visited venues such as [Whale Arts Centre](#), [Eastwood Park Theatre](#), [The Catstrand](#), [Harbour Arts Centre](#), [Dean Castle Country Park](#) and [Paisley Arts Centre](#).

### ADDITIONAL RESOURCES

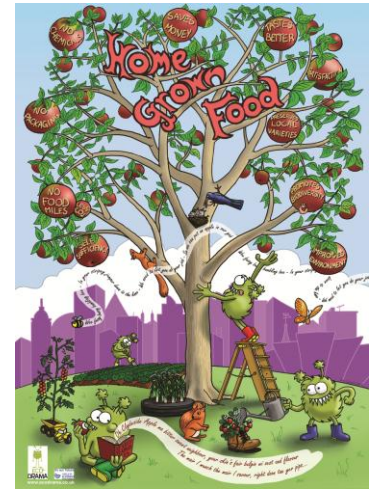
After each performance audiences got to taste a heritage apple from the UK and watch an apple corer demonstration, along with a Q&A. Teachers were also





provided with a **Classroom Activity Pack** full of useful pre and post show activities for the whole class.

Schools were also given some **Variety Packs of Seeds** for planting in class, an **Orchard Classroom Poster** and a **National Apple Day Starter Pack**. In addition to this all teachers were invited to attend a **CPD session** on Orchard Planting and received **3 Scottish Heritage Apple Trees** free of charge to plant in their school grounds.



## QUALITATIVE FEEDBACK

### Of Responding Pupils...

Over 95% liked the show

82 % used  to describe their experience of the show

Over 73% learned new things

Over 87% found it lots of fun

Over 85% found the show very good

Over 73% feel it made them think about where food comes from and how far it travels

Over 64% understand that growing food relies on seasons and pollinators

Over 90% know that some foods can be grown locally in Scotland

Over 48% understand what food miles are

Over 81% are interested in growing their own food

Over 85% understand that doing this helps care for the environment

### Of Responding Teachers...

94% found the production suitable to the classes' level with **54% EXCELLENT** and **40% GOOD!**

96% found the theme worked well with the curriculum and their own Eco School program. **52% found it EXCELLENT** whilst **44% found it GOOD.**

Finding the Classroom Activity Pack useful - **66% YES** and **31% not used yet**

**“You done a great show I loved it so so much. You could maybe come and do another show about apples.”** Pupil, Whitecrook Primary

**“We now have a much greater desire to eat apples.”** Pupils, Barmulloch Primary

**“It made me think why? Why do they use all the petrol to bring apples to Scotland when we can plant our own?”** Pupil, Hyndland

**“It got me thinking differently, that maybe I could grow my own veg.”** Pupil, Hyndland Primary



**“Don’t judge an apple by its looks.”** Pupil, Merrylee

**“I learned how to plant food and different types of apples.”** Pupil, St Angela’s Primary

**“I also learned that we need bees to keep growing”** Pupil, John Paul II Primary

**“It's a lovely show and I learnt a lot. I am considering working a patch of our garden with my toddler and now am truly inspired. Great to see a performance with a proper balance of learning and entertaining.”** Alison Reeves, Creative Director of Whale Arts

**“The show was beautifully presented. The set was lovely and the play was very interesting... It was terrific. Covered so many points in an interesting way.”** Teacher, St George Primary



**“Adults & pupils all thoroughly enjoyed this show, it was a perfect mix of acting, singing, humour and delivering the key messages in a fun way. My class are still talking about this.”** N Morrison, Kelvindale PS

**“The children could make clear links between the show and what our school already does to help the environment. They were particularly enthusiastic because we have our own apple tree in the school grounds already.”** Mrs Reid, Mount Vernon Primary

**“It complements very well our study of Scotland and learning about environmental issues linked to the benefits of homegrown apples”** Teacher, Broomhill Primary





## ORCHARD TRAINING AND PLANTING

During the 3 year project 2012-2015, teachers and volunteers from 32 primary schools in Glasgow participated in **Orchard Training Sessions** led by *The Appletreeman* Andrew Lear, an experienced horticulturist, orchard enthusiast and trainer.

Andrew equipped participants with the knowledge and basic skills necessary to plant and maintain a school orchard.

By the project end, **6 Orchard Training sessions** were held, with **117 Scottish Heritage Apple Trees** given out free of charge to **32 participating schools** to start their very own school orchard.



**“We have had the children watering the trees during the warmer months and I am taking outdoor learning for the infants so will be able to access the garden and orchard more easily.”** D Kenny St. Maria Goretti



**“We got a couple of very red Bloody Ploughman apples this year.”** L McCann Anderston Primary

## TOWNHEAD ORCHARD PLANTING DAY

Over two days, on Friday the 29<sup>th</sup> and Saturday the 30<sup>th</sup> of November, **30 Scottish heritage fruit trees** were planted in an underused space at the back of the recently built Townhead Village Hall, Glasgow. With expert guidance from the 'Appletreeman' Andrew Lear, **over 70 volunteers aged from 3 to 70** helped to dig holes, plant trees and protect them with the necessary stakes and guards.

Many of these volunteers also undertook training in fruit tree after-care and pruning. The orchard was unveiled to the sounds of Scottish pipes and the Townhead community were then invited to enjoy entertainment that included live folk music, face-painting, apple pressing and a performance of Eco Drama's 'The Forgotten Orchard'. Hungry stomachs were filled with home-made apple cakes, and Parsnip and Apple soup. The hall had a fantastic atmosphere and a great day was had by all.





## Trees planted included:

**Apples:** Katy, Annie Elizabeth, Clydeside, Galloway Pippin, Grenadier, Howgate Wonder, Keswick Codling, Lord \Derby, Monarch, Maggie Sinclair, Tam Montgomery, Ashmead's Kernel, Bloody Ploughman, Epicure, George Cave, Discovery, Lass o Gowrie, Lady Lambourne, Red Sleeves, Tydemans Early Worcester, Bramley, Dumelow's Seedling.

**Plums:** Czar x 2, Victoria x 2, Damson x 2

**Pears:** Conference, Beth, Onward

**"I can't wait to go and tell all of my friends what I've been doing!"**

**"I didn't know there were so many kinds of apples. I thought there were just Granny Smiths and the other one."**

**"I had an amazing time and I am going to eat my way through the last few pink lady apples I bought from the shops last week, and then look for a new source of Scottish apples! It's hard to believe there are so many different types, and the supermarkets stock none of them!"** Caroline, Volunteer





★★★★★ BROADWAY BABY “...manages to keep its audience of tinies enthralled simply through some excellent storytelling...a sweet little piece which will give younger children a gentle introduction to ecology but, more importantly, keep them engaged and amused for the whole 60 minutes...”

# the WORM

An underground adventure!

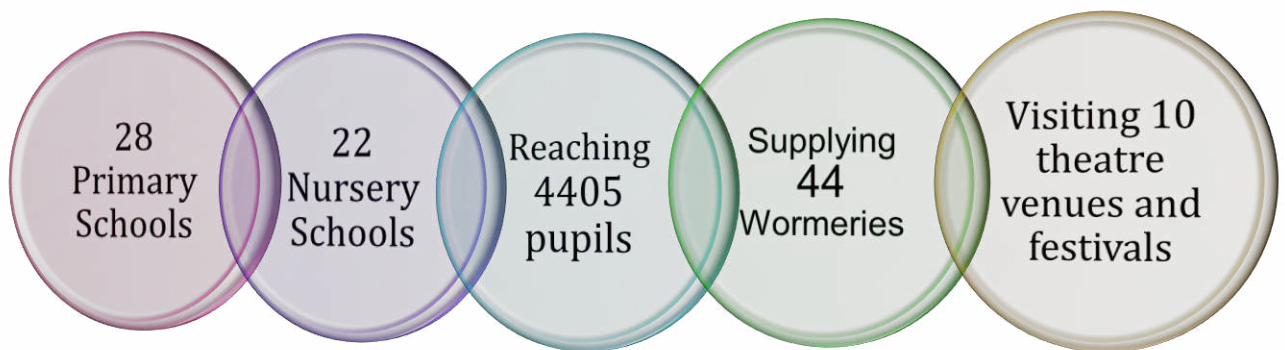


*The Worm-An Underground Adventure* is an enchanting, musical tale celebrating the wonder of life beneath our feet, specially devised for 3-7 year olds. After the performance, the audiences are invited to see some real worms in a specially designed wormery. For more information and trailer see below link:

<http://www.ecodrama.co.uk/productions/the-worm-an-underground-adventure/>

Throughout 2013 & 2014 Eco Drama delivered *The Worm* theatre show to schools, nurseries and theatre venues across the central belt of Scotland.

From **January to September 2014** *The Worm* reached:

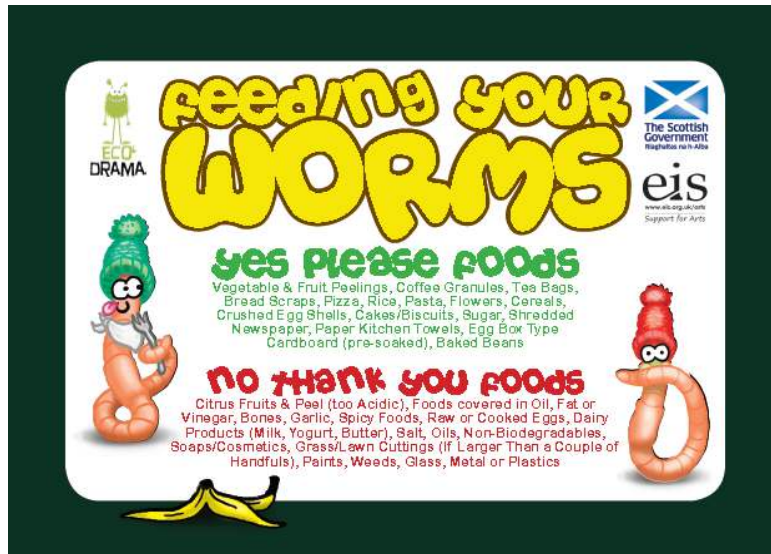


## ADDITIONAL RESOURCES

Each school that booked *The Worm* was provided with a **Classroom Activity Pack** full of useful pre and post show activities for the whole class.

All participants were invited to see a **real live wormery** after the show. **44** schools and nurseries were provided with their own school wormeries, Kitchen Caddy's, Stickers and Classroom Seeds. Finger puppet bobble hats were also made available to participating schools to be played with in class.





## FEEDBACK - QUALITATIVE AND QUANTITATIVE

### Of Total Responding Pupils...

Over 94% found it lots of fun

Over 90% found it exciting

Over 87% learned new things

Over 93% found the show very good

Over 87% understand why worms are good

Over 86% understand they can reuse their food scraps

Over 77% understand what composting is

Over 82% understand that doing this helps care for the environment

### Of Total Responding Teachers...

100% of responding teachers found the production suitable to the classes' level **with 100% stating EXCELLENT!**

100% found the theme worked well with the curriculum and their own Eco School program. **93% found it EXCELLENT whilst 7% found it GOOD.**

Finding the Classroom Activity Pack useful - **76% YES** and **24% NOT USED YET**



**"We've set the wormery up in an open area of the infant department and we've really enjoyed the whole experience. We regularly go outside and collect worm food to keep it topped up."**  
Teacher, Chirnsyde Primary

**"Primary 1 gave an assembly on all the learning we've done around the worms - we used them in measure and art and have embraced our responsibility to our wiggly friends."** Teacher, Chirnsyde Primary

**"I was a little scared about worms at first but now I love them!"**  
Pupil, Corpus Christie




**"It was a really funny show. It was like magic!"**  
Pupil, Rosshall Nursery


**"I learned that worms can help make carrots and tomatoes."** Pupil, Aultmore Park Primary

**"All the children gained something positive from this experience and have continued to recall back at nursery - eg through drawings, stories talking and putting left-over snacks in the compost bin. They have each made a comment in The Wee Wilma book as a *thank you*."** Teacher, Levenhall Nursery


**"I thought worms were icky, but now I love them"...** Pupil, Corpus Christi




**Amazing! A must see...**




**"...a smashing wee show that just maybe planted the seeds from which a new generation of eco-warriors will grow." Edinburgh Guide**



**It is days like today that makes me glad to be a teacher...**



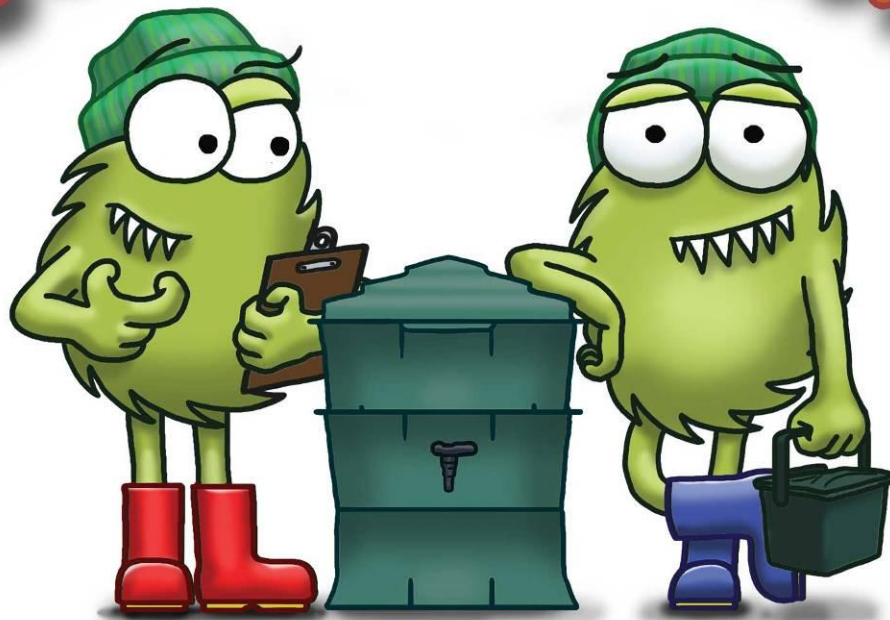
**"Worms are very good because they help protect the future..."**



**One of the best shows I have ever seen in a school...**



# The Worm Inspectors





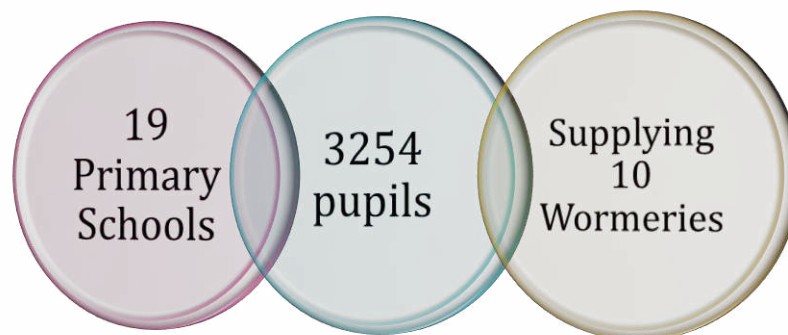
## THE WORM INSPECTORS

Visiting your school from the special '**Sector W**', The Worm Inspectors will help learners to understand the life of a worm, the value of food waste and how to create a worm's ideal menu. Through interaction, humour and a game of '**Feed the Giant Worm**', the Worm Inspectors will encourage learners to dispose of food waste in their wormery so that the worms will be well fed!

The Worm Inspectors consists of one or two assembly performances and a lunchtime interaction in the school canteen. Full details and trailer are available through the link below:

<http://www.ecodrama.co.uk/productions/the-worm-inspectors/>

From August - September 2014 Eco Drama delivered *The Worm Inspectors* to primary schools across the central belt of Scotland reaching:

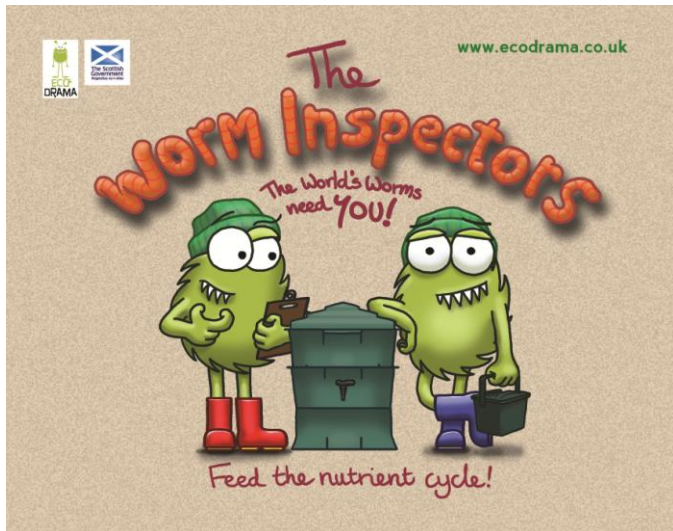


## ADDITIONAL RESOURCES

Each school that booked *The Worm Inspectors* was provided with a **Classroom Activity Pack** full of useful pre and post show activities for the whole class Classroom Seeds and a Worm Inspectors Poster.

*The Worm Inspectors* (the sister production to *The Worm – An Underground Adventure*) was part of the tour that supplied 44 Wormeries, Kitchen Caddies and Wormery Food Stickers throughout 2014.





## FEEDBACK QUALITATIVE AND QUANTITATIVE

70% of pupils chose 😊 to convey what they thought of *The Worm Inspectors*

66% of pupils said that they would like to help collect food scraps for the school wormery

**“Worms are more important than I thought.”** Jonathon  
P7a

### Of the total responding teachers...


100% of responding teachers found the production suitable to the classes' level **with 90% stating EXCELLENT and 10% GOOD**

100% found the theme worked well with the curriculum and their own Eco School program. **80% found it EXCELLENT whilst 20% found it GOOD.**

Finding the Classroom Activity Pack useful - **80% USEFUL and 20% not used yet**

**“I thought the relaxed, informal approach at lunch time worked very well. Moving between pupil groups and modeling food waste habits was particularly good. Thanks for all of your hard work and commitment with this project.”** Tommy Hynes, Corpus Christie Primary





**"I enjoyed that it was active and not just a boring talk. I also enjoyed that they taught you lots about worms."** Pupil, Bridge of Weir Primary

**"Great interactive play, explaining the importance of recycling food and helping the environment."**

Deborah Green, P5 Teacher, Aultmore Park Primary

**"I enjoyed having our own wormery."** Pupil, Pirie Park Primary

**"I learned that worms are good for the earth and are a very important part of nature."** P6 pupils, Bridge of Weir Primary.

**"I personally thought it was very entertaining. I felt like I wanted to watch it again."** Drew McCartney, P6, Corpus Christie

**"The Worm Inspectors was so good I could go again. I found it interesting and informative about worms."** Pupil, Antonine Primary





## MEASURING FOOD WASTE REDUCTIONS

We measured the carbon reductions made over **12 months** from February 2014 - February 2015, which equates to 200 school days of the partner schools composting food waste in their Kitchen Caddies. All schools previously did not do this.

Further details on our methodology can be found in Appendix 2.

Annual Saving from Food Waste Related Work

**370 tonnes CO<sub>2</sub>e**

**“I was a little scared about worms at first but now I love them!”** Zoe



**“We liked the wee worms. They made us happy”** Kayla, Bellrock Nursery School

**Eco Drama will continue to support these schools with their food waste reduction journeys and ensure the wormery’s ongoing use and lasting legacy.**



# RECYCLING HEROES

# Eco Gadgets



# The Isle of Egg





## RECYCLING HEROES

Recycling Heroes is an interactive workshop designed around the principles of **'Reduce, Reuse, and Recycle'**. Through a fun and informative drama workshop led by the fearless 'Bag Girl', pupils are encouraged to find their own inner recycling hero and rid the town of the menacing Rubbish Monsters!

During January - March 2013, May - June 2013 and April - June 2014, Eco Drama delivered *Recycling Heroes* workshop to Nurseries and Primary schools within Glasgow, reaching:



## ADDITIONAL RESOURCES

**Teachers** received a **Classroom Activity Pack** full of ideas for classroom activities as well as outlining useful resources for teachers.

All **pupils** received one *Recycling Heroes* **Cotton Bag, a Badge and a Booklet** supporting their learning from the workshop.

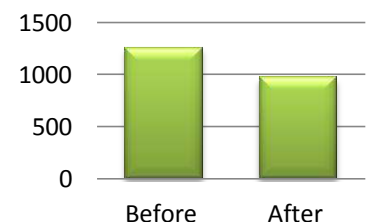


## FEEDBACK - QUALITATIVE AND QUANTITATIVE

Using the online Carbon Calculator we were able to see a reduction in carbon emissions by the workshop's respondents by

**289.34 TONNES of CO<sub>2</sub>**

### TONNES of CO<sub>2</sub> Emitted



**Over 87%** of pupils found the workshop **FUN, EXCITING** and **VERY GOOD**

**Over 79%** learned new things

**Over 91%** understand **RECYCLE**

**Over 88%** understand **REUSE**

**Over 76%** understand **REDUCE**

**Over 88%** will try to use these at home and in school

**Over 89%** (P3-5) understanding how this helps care for the environment

**100%** of teachers found the workshop complimented the pupils learning.

**85%** found it an **EXCELLENT** whilst **15%** found it **GOOD**

**100%** found the theme worked well with the curriculum and their own Eco School program. **83%** found it **EXCELLENT** whilst **17%** found it **GOOD**


I loved it. It was like nothing I had ever seen before!!

“Landfills are increasing, rubbish destroys nature and people in the future must cope with what we have done.”



“I have started using different bags, not just plastic ones...”





**"I feel I could stay a Recycling Hero forever."** Pupil, St Mirin's Primary, Glasgow

**"It was brilliant! Children are still using their canvas bags!"** Teacher, Hyndland Primary

**"As an Eco School, promoting the ethos of the theme fitted perfectly into our ambition to achieve Green Flag status".** Teacher, St Benedict's

**"I thought the workshop was excellent! Thanks for the workshop we really enjoyed it. It makes my job as Eco Coordinator a bit easier to involve others and pass on the message!"** Teacher, Chirnsyde Primary



## ISLE OF EGG AND ECO GADGETS

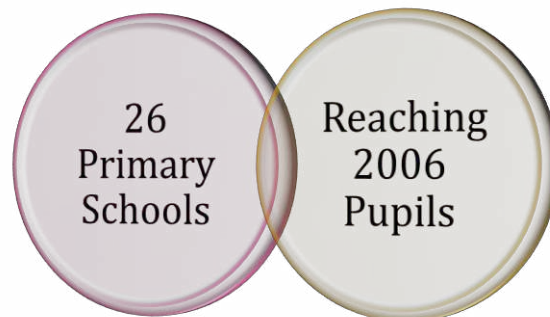
As part of the energy and transport outcomes we also completed a small tour of our production *The Isle of Egg* and workshop *Eco Gadgets* in 2012/13.

*Eco Gadgets*: This workshop explores themes of sustainability, specifically relating to transport and energy.

Pupils meet Hope, a Green Agent who will show them the latest eco gadgets, all of which could help solve our global warming problem... a solar powered windmill, hydrogen powered car, a boat run on nothing but candle wax, plus a very special mystery gadget!

Using drama, role play and undertaking special training tasks, pupils work with Hope to become top class Green Agents for the environment!


*Isle of Egg*: Egg is a magical place, a place where change knows no boundaries, a place where dreams come true... An ecological fable inspired by the true story of Eigg, a beautiful, self-sustainable island off the west coast of Scotland. Through interactive storytelling, live music, eco gadgets and humorous characters, Eco Drama brings to life an uplifting story about climate change, positive thinking and the power of community spirit. In 2012/13 Eco Gadgets and Isle of Egg reached:



## ADDITIONAL RESOURCES

Classroom Activity Pack, Green Agent Badge & Training Notes.





**“... The play had the kids in the audience shouting for more and the adults in gales of laughter . . . It should be taken on a national tour of primary schools” Rob Gibson, MSP, John O Groat Journal”**

**“It was very relevant...The message that they can change things themselves was great” Teacher, Glasgow**

**“I liked learning about the eco gadgets, it made me think twice”  
Pupil, St Mungo's**

**I learned that the Earth needs our support in surviving, also that working as a team will be better” Pupil, St Mungo's Primary**



## THE OIL OF LIFE

During October to November 2012, January to March 2013 and January-March 2014, Eco Drama delivered *The Oil of Life* interactive drama workshops to secondary schools within Glasgow. Designed for S1 pupils, *The Oil of Life* is a programme of two workshops in which learners aged 11-13 are challenged to recognize the implications of oil usage in the 21<sup>st</sup> Century, and to re-think a sustainable future through drama, debate and role-play.

Groups of 20-25 pupils take part in 2 drama workshops over 2 consecutive weeks, working with Eco Drama workshop leaders to explore our relationship with oil, how our actions affect the natural environment, and discovering how we can all lead more sustainable lifestyles.

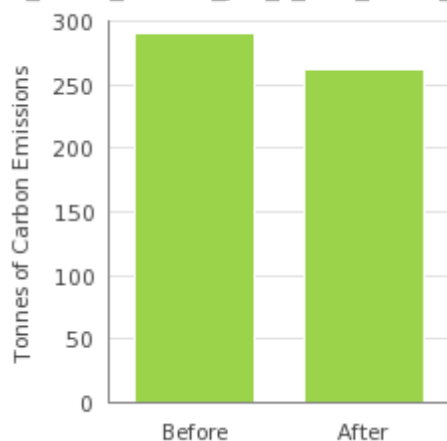


## FEEDBACK - QUALITATIVE AND QUANTITATIVE

Results from the Carbon Calculator show a reduction in carbon emissions for *The Oil of Life* project. We had a 62% class respondent rate for the carbon Calculator Quiz.

### Energy and Transport results:

ar\_Class\_4 2013\_Jan\_-\_Mar\_Class\_5 20

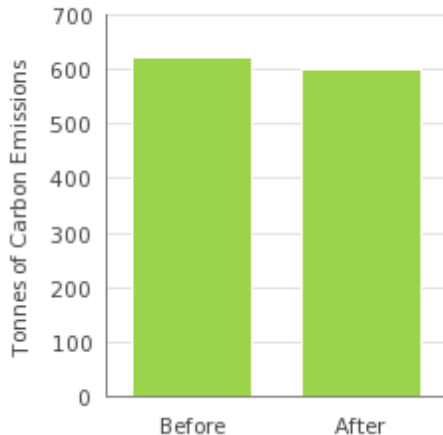


**BEFORE**, you emitted **289.8 TONNES** of CO<sub>2</sub> **AFTER**, you now emit **262.01 TONNES** of CO<sub>2</sub>, which is an **EXCELLENT REDUCTION!!!**



## Waste results:

- Waste 2013\_Class\_5\_-\_Waste 201



"BEFORE, you emitted **623.4 TONNES of CO2**

AFTER, you now emit **602.07 TONNES of CO2**, which is an **EXCELLENT REDUCTION!!!**

Well done - keep up the good work!



## Quantitative Data concluded:

- ❖ **92%** of pupils rated *The Oil of Life* workshops as being excellent or good
- ❖ **91%** rated the Eco Drama workshop leaders in the same categories
- ❖ **97%** of the pupils who took part in the project found it relevant to their pupils' own lives

From approx **541** pupils who participated in the **two rounds of Carbon Footprint Questionnaires**, we were able to ascertain:

- ❖ Energy and Transport emissions decreased from **289.8 TONNES of CO2** to **262.01**
- ❖ Waste emissions decreased from **623.4 TONNES of CO2** to **602.07**
- ❖ **70%** of the 20 carbon footprint questions (evaluated 3 months after the workshop) show a rise in positive behavioural change over the areas of Energy, Transport, Recycling and Food and Waste.



**"It doesn't just help me it helps the world" S1 Pupil, Smithycroft Secondary**



**"It is down to us, not some people, it is down to everyone." S1 Pupil, Hillpark**

**"We need to preserve the world and help the future generations, or else the world will become more extreme through global warming." S1 Pupil, Cleveden Secondary**

**"If I don't then in the future people are going to struggle and we shouldn't take today for granted." S1 Pupil, Cleveden Secondary**

**"You cannot just let the Earth, YOUR EARTH, waste away & you can't be the same you all your life." S1 Pupil, St Thomas Aquinas Secondary**



**"This project is going to change my life." Pupil, St Mungo's Academy**



**I have really enjoyed Eco Drama and I wish we had it every week! Pupil, St Mungo's Academy**

## CPD SESSION

In addition to the workshop programme for the S1 pupils, teachers from the 15 secondary schools who took part in the project were invited to attend a Continuing Professional Development (CPD) session. The session focused on the drama techniques used within *The Oil of Life* workshops, and explored how these could be integrated into the teachers' own specialist subject area.



The sessions were held in March 2013 and March 2014 and were facilitated by *The Oil of Life* workshop leaders, Kevin Wratten and Jodie Wilkinson in 2013 and Lauren Oakes and Peter Callahan in 2014.

Feedback from the session was very positive with all participants identifying the session as being 'very useful' to their own teaching practice.

**'Lots more teaching tips for active and visual learners – I'd like to try all of them and Teacher in Role I will definitely be exploring... Great – relevant, reflective, relaxing'** Pauline Bowie, Enterprise and Technology Teacher



**"The workshop made me really consider my part in taking care of the environment. I think these pupils will definitely be more considerate of it since they developed such knowledge of their roles as consumers"** Teacher, Whitehill Secondary



## THE CARBON CALCULATOR

At the beginning of the project, a Carbon Calculator was developed in order to record the behaviour patterns of our community and the CO<sub>2</sub> reductions made from positive behaviour changes. Because of the age group, and large number of participating children & young people, we realised that primary data such as exact energy monitor readings and kilometres travelled to school were going to be difficult to record, and thus the Carbon Calculator was developed as the most suitable method with which to measure behaviour changes and CO<sub>2</sub> reductions based on pupil's answers to **before and after questionnaires**.

The Carbon Calculator allowed teachers to record the behaviour patterns of pupils before and three months after the Eco Drama project, relating to specific areas: **Recycling, Travel & Energy**.

Please see [Appendix 3](#) to view these Questionnaires.

The Carbon Calculator was designed to make its CO<sub>2</sub> baseline and reduction calculations based on DEFRA Business Conversion Factors and figures from the Scottish Government Low Carbon Route Maps.

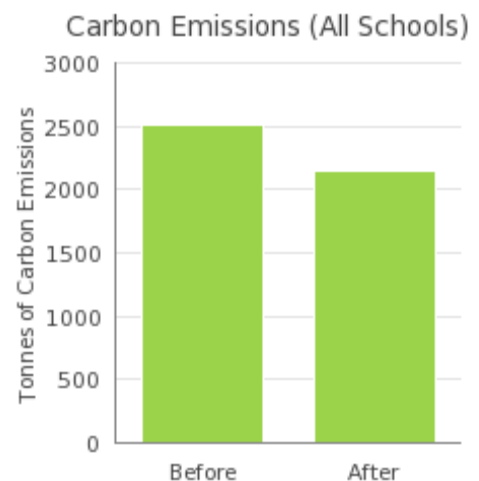
We measured by analysing specific questions from each questionnaire, both before and after the project: -

**Transport:** if pupils walk or cycle to school more than once per week

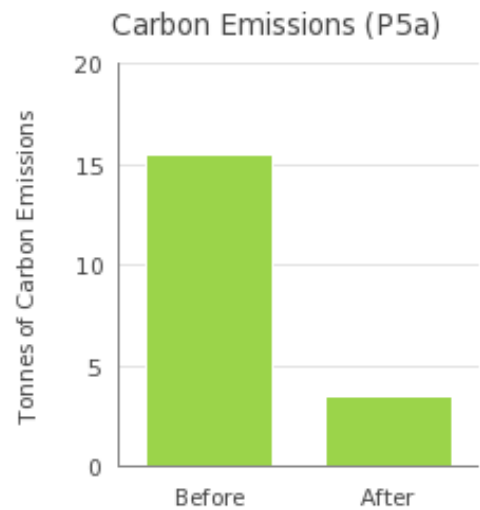
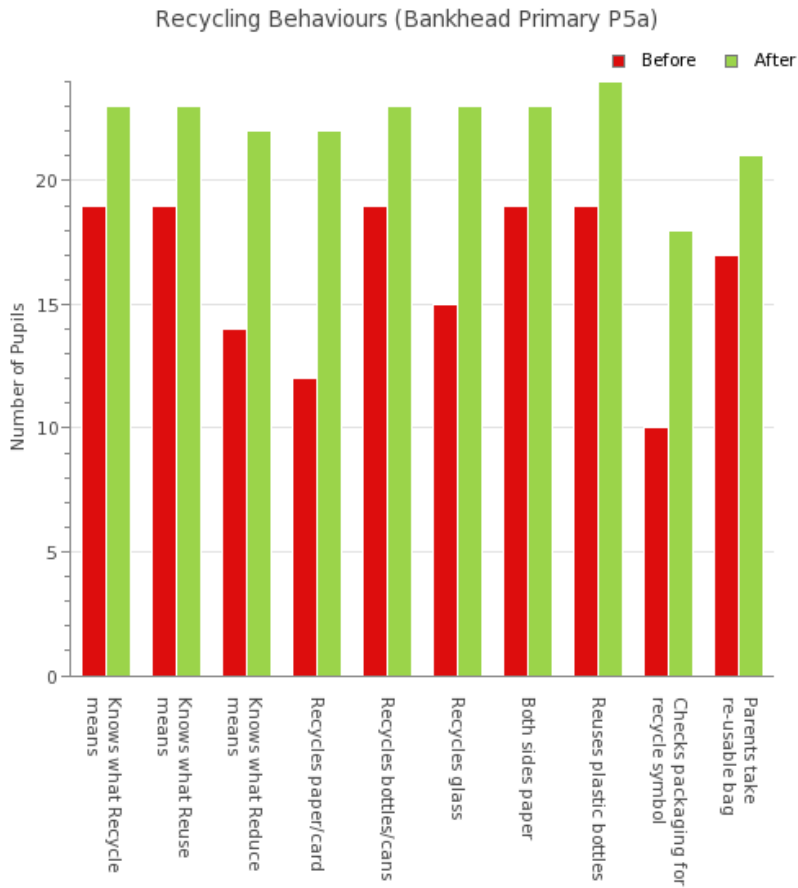
**Energy:** if pupils turn their Play station/Wii off from standby

**Recycling:** if pupils recycle paper/card, metals, glass, plastics & packaging

Once inputted online, pupils were able to view a **visual graph** showing their behaviours both before and after, seeing how these might have changed as a result of greater awareness and learning in the area.



Example:



Pupils could also see their carbon emissions in graph format, showing reductions made as a result of their actions.



"BEFORE, you emitted 15.48 TONNES of CO<sub>2</sub>

AFTER, you now emit 3.44 TONNES of CO<sub>2</sub>, which is an EXCELLENT REDUCTION!!! Well done - keep up the good work!"

Graphs were shown per class and also as a whole school, motivating pupils with their personal progress as well as a collective Eco School.



## CO2 FIGURES FROM USING RECLAIMED VEGETABLE OIL



According to the Renewable Fuels Agency in 2009, using bio diesel, specifically made from used cooking oil, has low carbon intensity & makes a carbon dioxide saving of **85%** in comparison to using regular fossil diesel.

By touring in a van run on bio diesel instead of conventional diesel fuel, we saved 317.2 tonnes of CO<sub>2</sub> during the lifespan of the 2012-15 tour.

**TOTAL Annual Saving from Touring with Bio Diesel 317.2 tonnes CO<sub>2</sub>e**

Eco Drama drove on average 8 miles per day for 259 days of local touring in Glasgow. Total Mileage of Tour = 2072 miles & approximate Miles per Gallon = 32. Amount of Bio Diesel used (in litres) = 804 litres

- Using DEFRA conversion factors (for Diesel Litres is x 2.630) using 804 litres of diesel burned a total of 2,114.52kg of CO<sub>2</sub> (2,114.52 tonnes)
- As Eco Drama used Bio Diesel from Apple Fuels, made from reclaimed vegetable oil, this omitted only 1,797.342 tonnes of CO<sub>2</sub> in comparison (85% less CO<sub>2</sub>) making a saving of 317.2 tonnes
- The Magic Van itself has been an educational feature in primary schools, engaging young people with alternative modes of fuelling transport and showing ourselves to positive green role models.

## OVERALL CARBON RESULTS

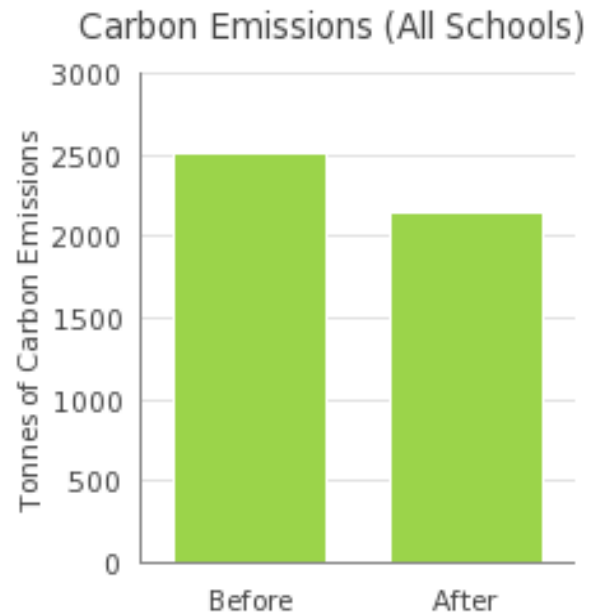
The response rate for **both rounds** of the Carbon Calculator Quiz was **31% of the participants** in the energy, transport and recycling projects (*Recycling Heroes, The Oil of Life* and *Eco Gadgets*). This graph shows the final total carbon emission reductions made through positive pupil behaviour changes relating to Energy, Transport & Recycling .

Carbon emissions before: 2516.45 tonnes

Carbon emissions after: 2139.7 tonnes

Total difference in carbon emissions:

**376.75 tonnes (For Energy, Transport and Recycling Projects)**



## OVERALL CARBON RESULTS

### TOTAL

Carbon Saving from Energy, Transport and Recycling related work  
**376.75 tonnes CO<sub>2</sub>e**

### TOTAL

Carbon Saving from Food Waste Related Work  
**370 tonnes CO<sub>2</sub>e (primary data)**

### GRAND TOTAL

Carbon Saving including Food Waste with Energy, Transport and Recycling plus annual Saving from Touring with Bio Diesel  
**1,063.95 tonnes CO<sub>2</sub>e**



But this would have been much higher with a 100% return rate!

## LEARNING AND REFLECTION

### ❖ Recruitment

One of the biggest barriers we came up against was to do with core staff recruitment. We perhaps hadn't built in enough time for this to happen before the project began. Next time, we know to build in time for every eventuality at the start of a project and not work on the assumption that staff members from previous projects will stay on.

**Advice to other groups: Build in enough time for every eventuality with staff. Plan roles to suit the project, not the person!**

### ❖ Getting Roles Right

The Education Officer role encompassed a broad range of duties, trying to meet the varying needs of different aspects of the project. We soon realised it was trying to do too much and that we needed to focus the role. Thus the Schools Coordinator role was created and we feel that the more administrative focus of this role was much better suited to the demands of the project.

**Advice to other groups: Fine tune job specifications and don't try to cram too many duties into one role!**

### ❖ Building in Enough Time

As the 3 year project progressed, things naturally grew and built up momentum and we were constantly very busy with much over-time worked. Going from 1 full-time staff member managing 3 freelance staff in 2010-11, to managing 2 core staff and 18 freelance staff members 2012-15 was a massive learning curve! While positive for the organisation in that we doubled our beneficiary numbers each year 2012-15 and met and exceeded our project aims, we feel that the 1 full-time and 2 part-time core staff roles were not sufficient, and extra time, or another role, could have been built in to alleviate pressure. We have learned from this to build in more staff time, as things inevitably take longer and don't always go exactly to plan.

**Advice to other groups: Plan for the unexpected!**



### ❖ Online Carbon Calculator

Our vision for the Carbon Calculator was that it would be a useful tool not only for recording and monitoring before/after behaviours and producing the required CO<sub>2</sub> reduction data, but also for involving pupils and teachers in the process. We asked teachers '*Is the Carbon Calculator a useful tool for you and your pupils to use as part of your ongoing class learning?*' to which 50% said 'Yes' and 50% said 'Don't Know'. So although the Carbon Calculator was designed to produce a paper free and interesting way for schools to connect with the topic, it was not utilised as well as we had hoped with many teachers not being aware of its existence despite being contacted about it. This has prompted us to review communication methods, and indeed if online tools are the best medium.

**Advice to other groups: Online tools can work well, but check if all have access to a computer.**

### ❖ Primary Data

We measured carbon emissions by asking pupils to complete quizzes relating to Energy, Travel and Recycling behaviours before and after the learning experience which were then inputted into the Carbon Calculator. We found behaviour change quizzes the best way to record data for this age group. Obtaining primary carbon data however, such as data gathered from Energy Monitors, measuring kilometres travelled from home to school, or actually *weighing* recycling in each individual school, did not work with this age group, and also because we worked with so many schools. The food waste monitoring was easier however, due to each schools waste being collected in the same sized Kitchen Caddy and measured over a set period of time.

**Advice to other groups: Although the Carbon Calculator did not produce 'primary' carbon data, the results of these before and after questionnaires were fascinating and it was very much worthwhile pursuing the data throughout the 3 year project. Results showed a very clear trend with pro-environmental behaviours consistently improving after the creative learning experience.**

### ❖ Qualitative Data

We found that the qualitative data gathered was incredibly valuable in

monitoring the success of our project. For us, this displayed the quality of engagement with the learning experience to both head and heart, and to participant's intrinsic values. In engaging emotions as well as intellect through a creative learning experience, we found motivations for action and progression was stronger, and this was demonstrated in the feedback collated throughout the project.

**Advice to other groups:** Encourage the heart. During a carbon project, place equal importance on measuring *Knowledge & Understanding, Attitudes & Values, Enjoyment, Inspiration, Creativity & Activity, Behaviour & Progression*. This qualitative data will speak for itself, and by engaging with people's emotions and intrinsic values, perhaps the biggest impact will be made.

#### ❖ Evaluation as a Creative Process

Our monitoring and evaluation process evolved constantly throughout the project, adapting to the needs of our participants and to each unique learning experience. As things progressed we found that the more creative we made our evaluation processes, the better quality feedback we got.

**Advice to other groups:** Always challenge the process. Make evaluation as creative as possible for participants by including space for pictures and free thought on paper, or building evaluation and reflection into sessions in creative, practical ways; it is for them as well as you.

#### ❖ Environmental Policy & Staff Members

Our organisation's environmental policy is strong and we ensured both core and freelance staff members knew about this at the time of beginning work. For example, it encouraged staff to consider their behaviour by turning off lights, drinking from a reusable bottle or recycling waste - essentially demonstrating themselves to be positive green role models. We found that embedding the environmental policy in our practices, as well as the process of delivering the creative learning experiences, ensured staff members also underwent behaviour changes as a result of the project.

**Advice to other groups:** Make a good environmental policy and refer to it often. Inspire a shared vision and model the way.

## FINANCE AND ADMINISTRATION

The project was awarded £281,742.48 across 3 years. The final expenditure in each financial year was: -

2012-13: £85,654.53

2013-14: £106,813.68

2014-15: £89,274.27

All finances for the project were effectively administered and any budget changes were pre-approved with our Development Officer. We stuck to the budget in accordance with our project plans, and had no deficit at the end of the project. Changes that were made to the budget were mainly due to overspend accumulated through delayed recruitment, and this became a blessing as naturally as the 3 year project progressed, there were new expenses which we hadn't envisaged or planned for at the time of the application in 2011. For example, The Forgotten Orchard ended up becoming quite a heavy set and we soon realised that the show required a Stage Manager for touring. Thus overspend from delayed recruitment became a much needed contingency for unplanned expenses like this.

One particular project that came out of having underspend from delayed recruitment was the Eco Drama Group; a young person led creative process exploring environmental themes in a weekly drama group. It was agreed with our Development Officer that this was sound use of the funds, and we delivered this in Year 3 of the project.



## AWARDS

Eco Drama has been very grateful to receive the following awards throughout the project:

- Glasgow Community Champion – Public Service Award Winner 2012
- Greener Together Community Award 2013
- Scottish Green Awards – Best Community Initiative 2013
- Santander Social Enterprise Development Award 2014
- Edinburgh Fringe Sustainable Practice Award Finalist 2014



## LASTING LEGACY

Eco Drama's Magic Van Tour will have a lasting legacy in Glasgow schools and communities we worked with.

- ✓ Using theatre & drama in education has proven to be **memorable** as it appeals to different learning styles and multiple intelligences. Pupils have demonstrated through feedback forms several months after the experience, a **great memory of the show and workshops**, increasing the potential for positive long-term behaviour change.
- ✓ The interactive nature of Eco Drama's work means young people are **involved** and not just passive listeners. They are also involved in decision making within workshops and encouraged to use their voice, form opinions and become modern ambassadors for the environment.
- ✓ **With heart & mind involvement** and engaging with **intrinsic values** through the drama and theatre, there is an increased chance of positive behaviour change and a lifelong connection with the natural world.
- ✓ The reflective and follow-up work covered in the **Classroom Activity Packs** means the **message is enhanced further**. Schools will have the art work, stories & pictures displayed around their school for a long time after our visit as a reminder of the work done with Eco Drama and the key messages learned. [Please see Appendix 4 to view Resources.](#)
- ✓ Depending on the show or workshop, pupils received things such as **canvas bags, seeds, badges and miniature information booklets** to take home. These proved a huge success with pupils, and we encouraged them to show parents these mini booklets so that the message may reach them also.
- ✓ Schools will continue their **whole school environmental action** in future.
- ✓ Eco Drama will continue touring its current programme in future years, reaching **new audiences** in Scotland.

- ✓ The **orchards planted** throughout our project will leave a legacy; Townhead Community Orchard and the 35 School Orchards in Glasgow will continue to flourish in future years, providing heritage fruit for the community to eat & sell.
- ✓ Children and young people, inspired by our productions and workshops, will begin a lifelong interest in **growing their own food**. For example, the following feedback sent to us months after two of our projects, hints at the inspiration and practical action being taken. These are just two parents who got in touch to provide feedback, and we hope there will be many more young people out there like this:

**Feedback, 10 months on from the Community Planting Day:**

**Just a note to say thank you so much for your information on tree planting last November as this has inspired our son Mark to plant and grow his own fruit and veg. We planted 3 trees earlier this year (Apple, plum and pear) and although we didn't expect anything from them we got 2 apples from the apple tree. We also got nearly a full bag of potatoes from the potato pot and can't wait until next year to see what else we can grow. We thank you and your team for your information, help and inspiration and we wish you every success in your future projects. Karen & Paul McCluskey, local residents**



**Feedback, 4 months on from participating in the Eco Drama Group:**

**My daughter Katie thoroughly enjoyed the Eco Drama sessions at Jigsaw last term and has cared for her courgette seedling through the summer holidays. She wanted to show you how well that little courgette seed has grown... Christina McKittrick**





## **Feedback on School Wormeries:**

**“The children have really engaged with the whole idea. They have invented a ‘worm dance’ which we do when it’s raining and they count the worms. We’ve managed to develop their understanding of the importance of worms in the whole ‘eco’ idea and they no longer run away screaming when they see one on the ground. This is a huge step in the right direction” A Galbraith, Royston Primary**



**“We’ve set the wormery up in an open area of the infant department and we’ve really enjoyed the whole experience. We regularly go outside and collect worm food to keep it topped up. Primary 1 gave an assembly on all the learning we’ve done around the worms - we used them in measure and art and have embraced our responsibility to our wiggly friends.” Neil, Teacher Chirnsyde**



## Townhead Community Orchard in 2014:



In depth Evaluation Reports on each individual production, workshop and project are available upon request.



[www.ecodrama.co.uk](http://www.ecodrama.co.uk)