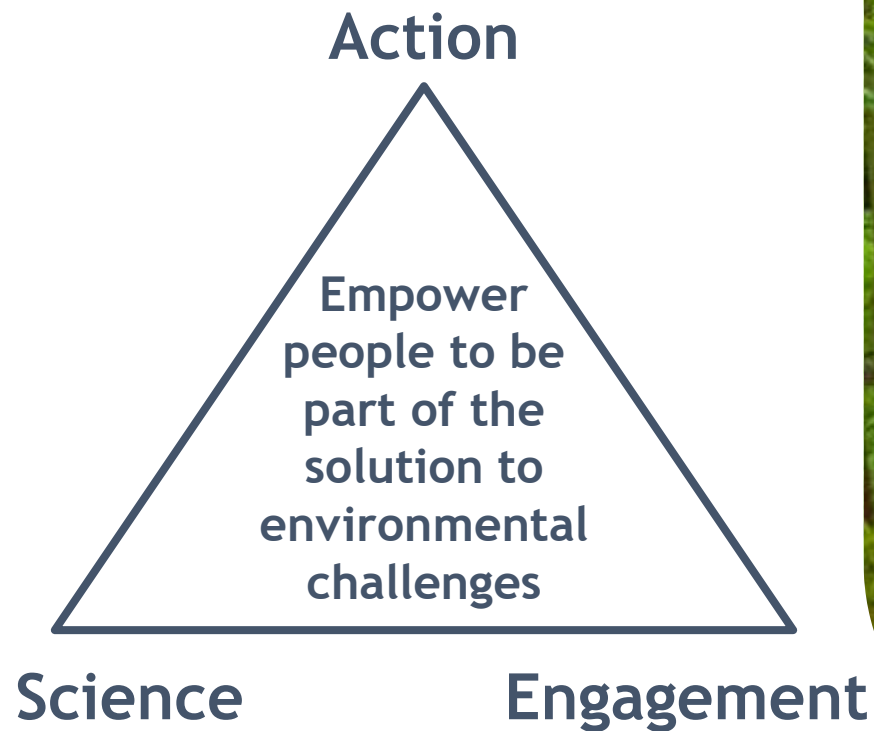


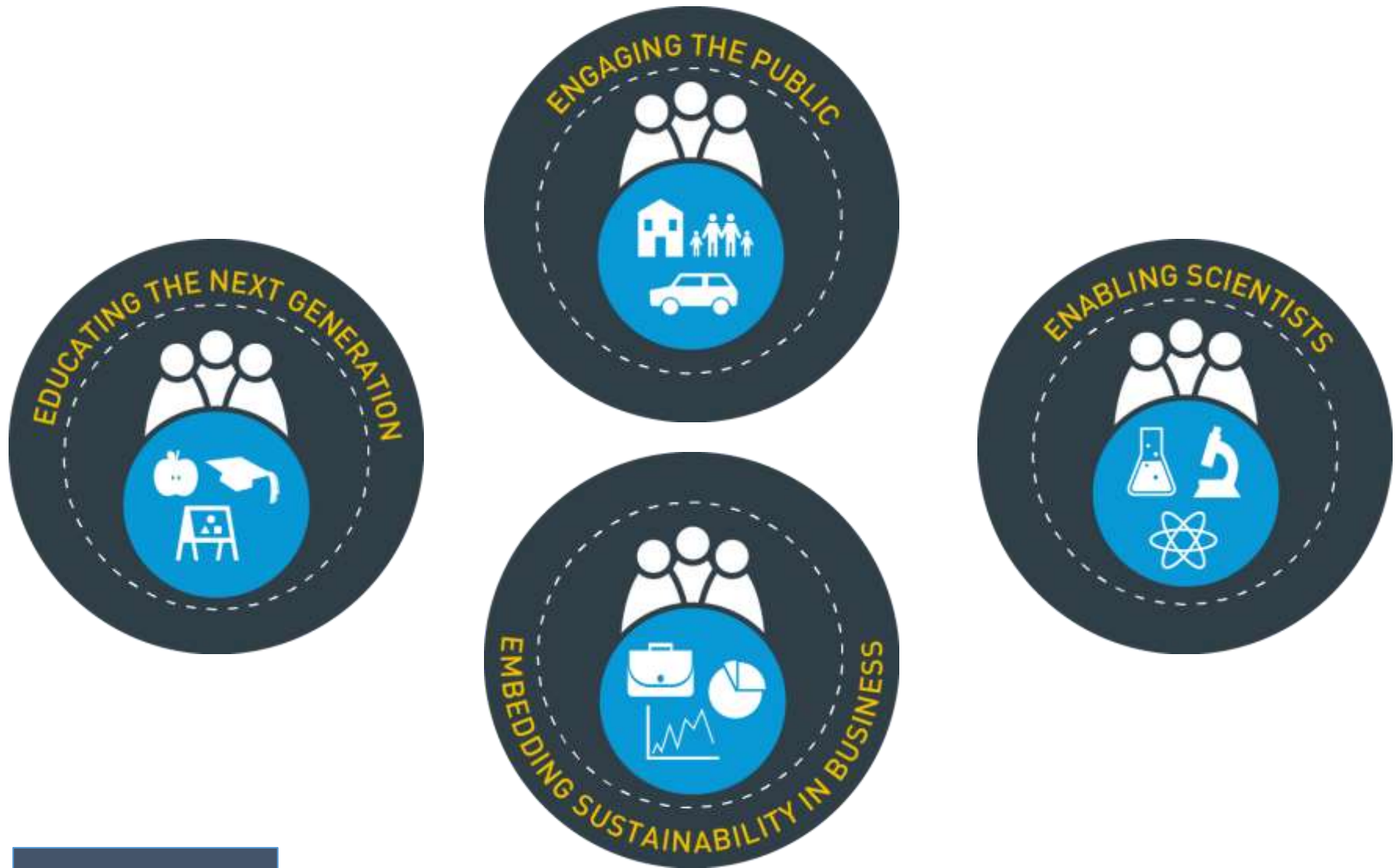


Engaging and empowering different types of participants in Citizen Science

Gitte Kragh
Earthwatch Europe

Helen Spiers
University of Oxford
/Zooniverse



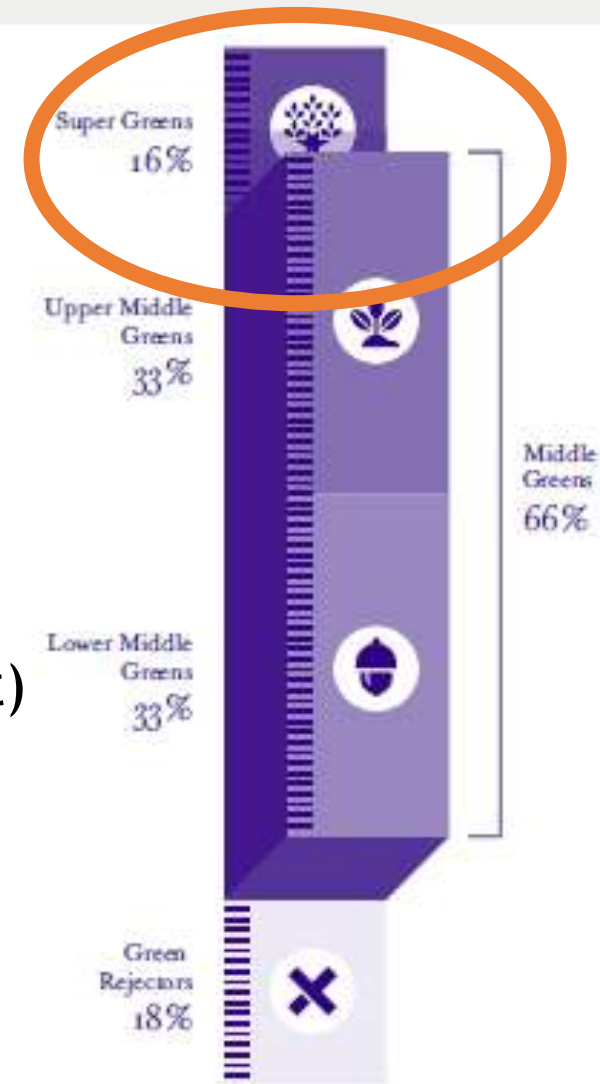


'THE PUBLIC' AS AN AUDIENCE - WHO ARE THEY?



Green beliefs vs. green behaviour

- Make it personal (emphasise personal benefit)
- Make it fun
- Make it tangible & give immediate feedback
- Bribe shamelessly (recognition, gamification)
- Niche -> normal



Ogilvy&Mather, 2011

WHY DO PARTICIPANTS DO CITIZEN SCIENCE?

Onsite environmental projects

- Value-based motivations:
 - Helping nature¹
 - Helping wildlife²
- Learning something new¹
- Contribute to science²
- Recreational experiences¹

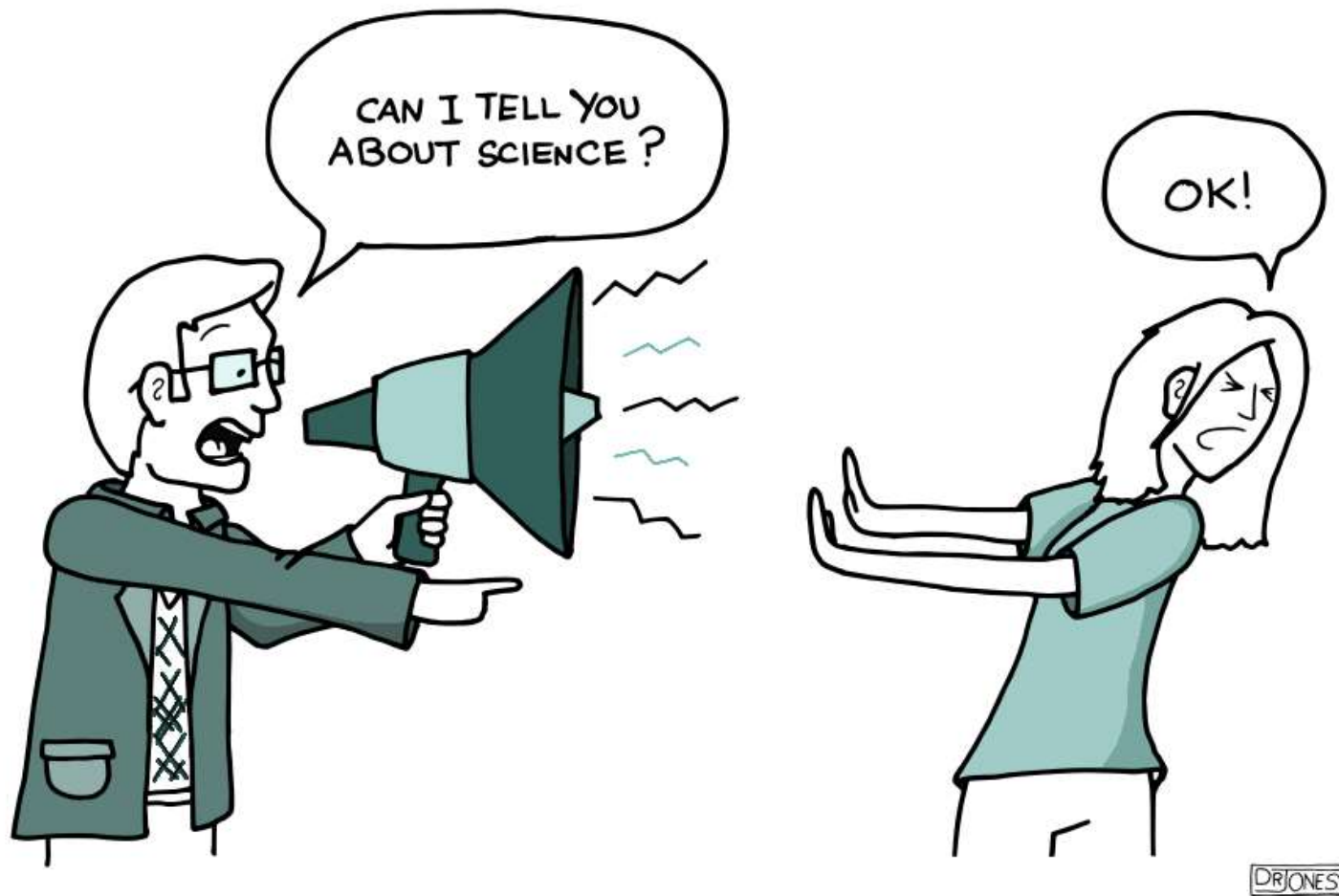
Online (Galaxy Zoo³)

- Contribute to science
- Astronomy
- Discovery
- Beauty

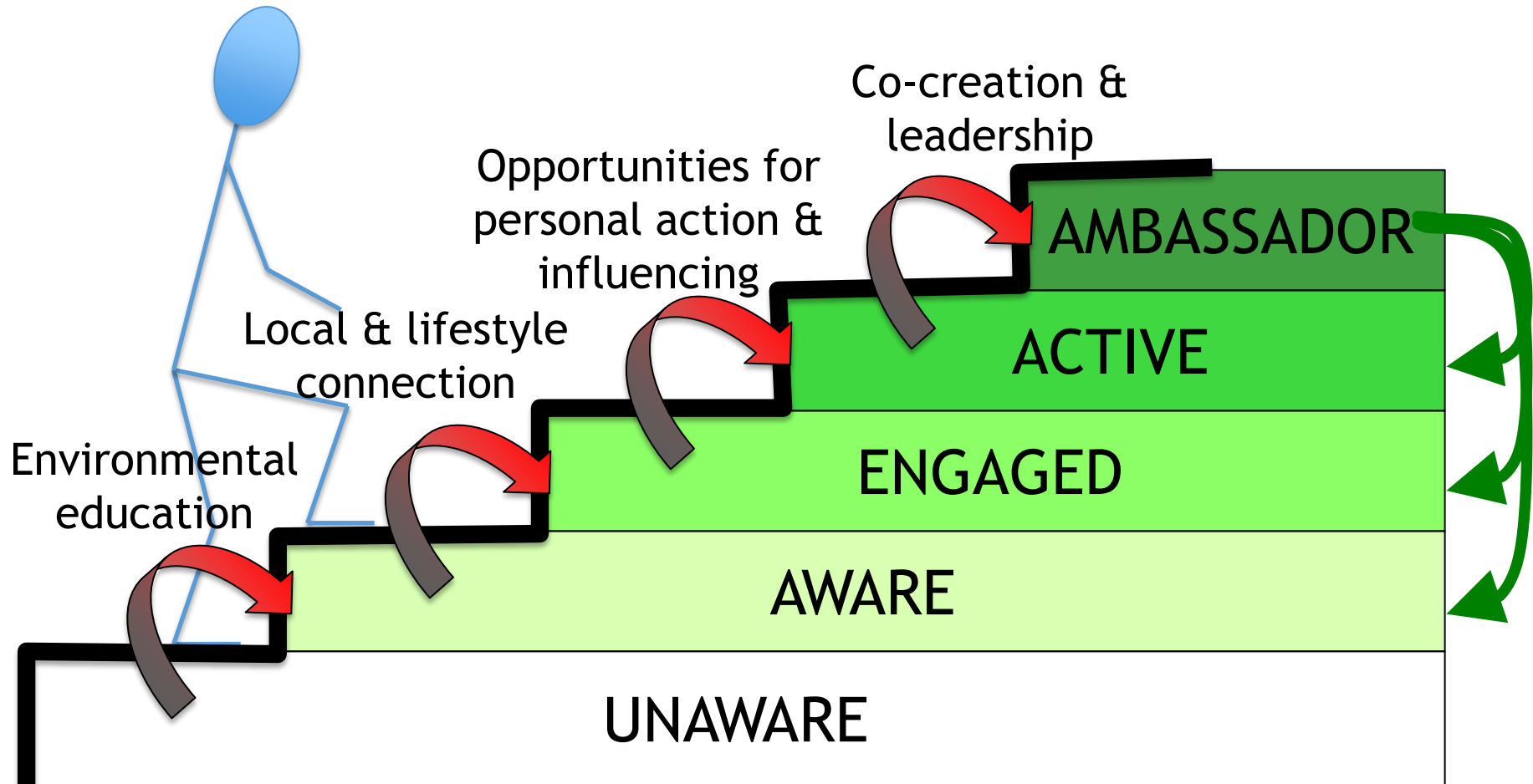
¹Kragh, 2017, ²Geoghegan et al., 2016

³Raddick et al., 2013

MOTIVATIONS...



DIFFERENT LEVELS OF ENGAGEMENT

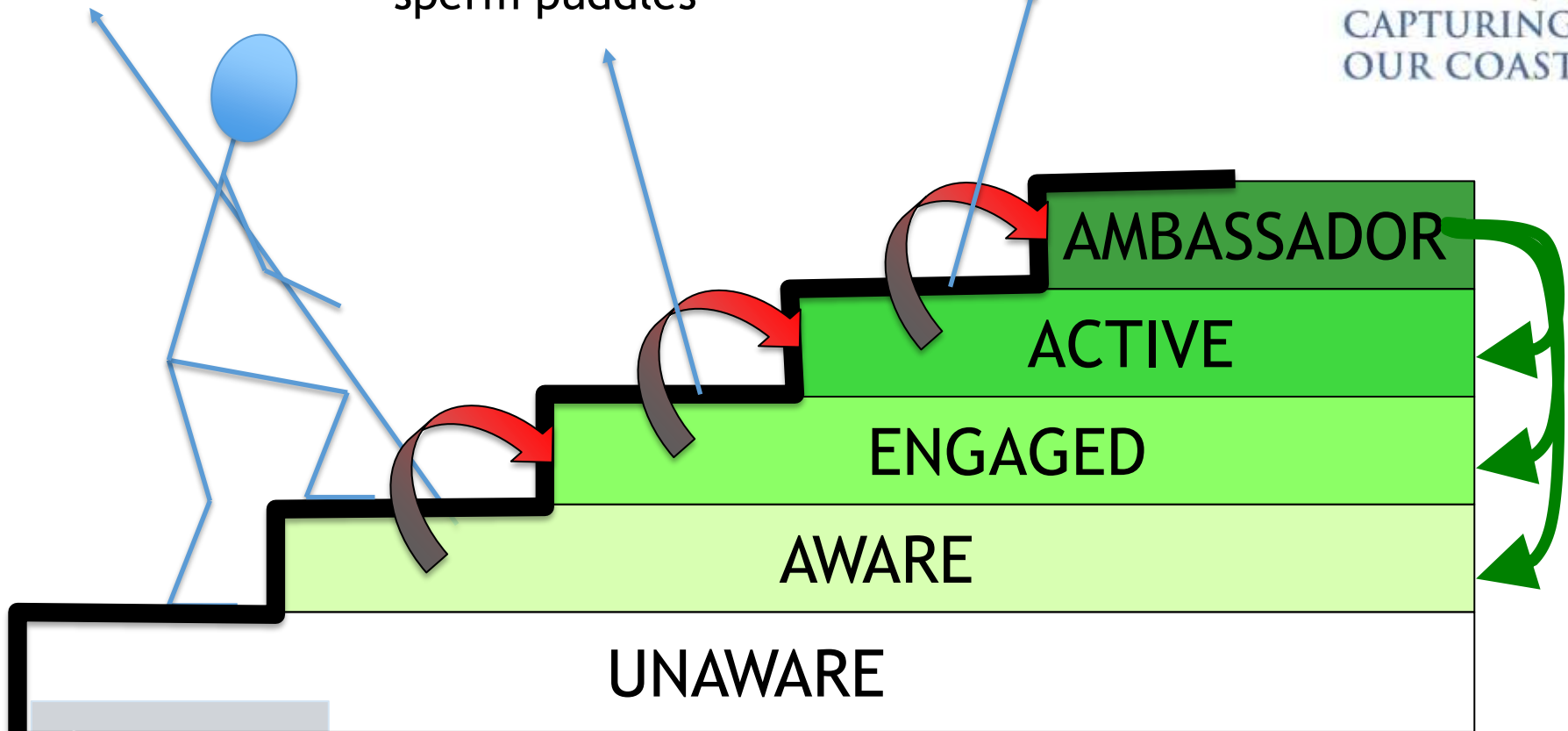


DIFFERENT LEVELS OF ENGAGEMENT

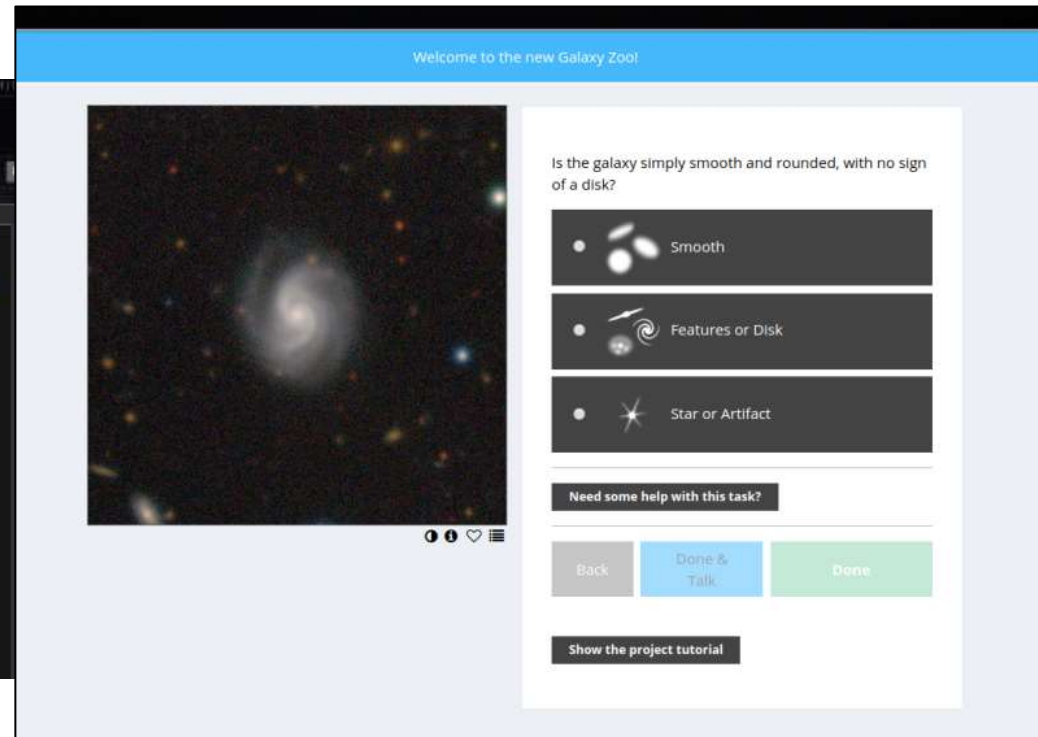
‘Wine & science’
nights

‘Spermwatch’ -
observing lugworm
sperm puddles

Repeated surveys
‘species pack’



Citizen science approach
Galaxy Zoo launched 2007





Expansion of the Zooniverse



www.zooniverse.org



@the_zooniverse

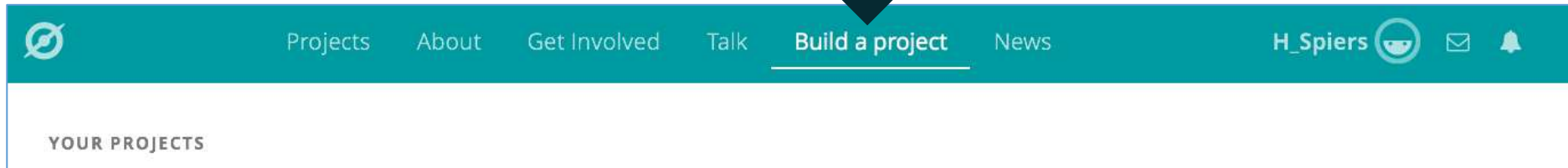


daily.zooniverse.org



Citizen Science via the Zooniverse

www.zooniverse.org/lab



PROJECT #3779

Project details

About

Collaborators

Field guide

Tutorial

Media

Visibility

Talk

Data Exports

Input the basic information about your project, and set up its home page.

Avatar

Drop an avatar image here

Pick a logo to represent your project. To add an

NAME

Project demo

The project name is the first thing people will see about the project, and it will show up in the project URL. Try to keep it short and sweet. Your project's URL is [/projects/h-spiers/project-demo](http://projects/h-spiers/project-demo)

DESCRIPTION

A demonstration of how to make a project

This should be a one-line call to action for your project that displays on your landing page. Some volunteers will decide whether to try your project based on reading this, so try to write short text that will make people actively want to join your



www.zooniverse.org



[@the_zooniverse](https://twitter.com/the_zooniverse)



daily.zooniverse.org



PROJECT BUILDER

- Project built - What next?
 - Apply for launch on the Zooniverse website
 - Internal review process
 - Beta review
 - Address feedback
 - Full launch
 - Researcher can share URL with own community



www.zooniverse.org



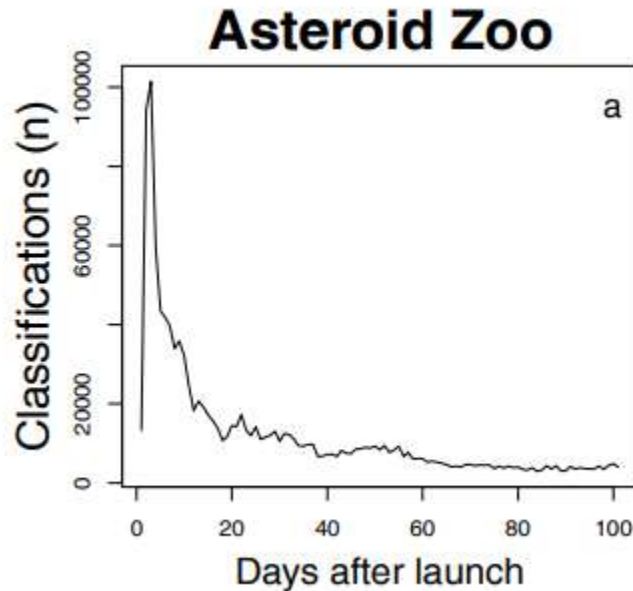
[@the_zooniverse](https://twitter.com/the_zooniverse)



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Volunteer classification curves



Typical classification curve after launch

Spiers et al., 2018



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Volunteer classification curves

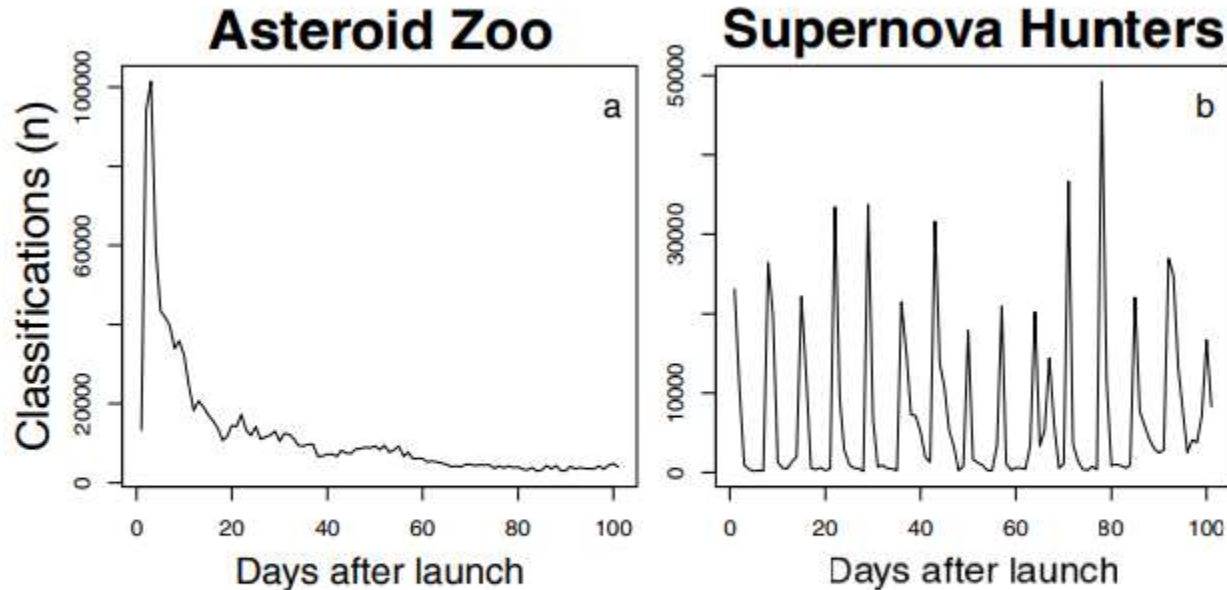


Figure 1: Supernova Hunters has a distinctive classification curve.

Spiers et al., 2018



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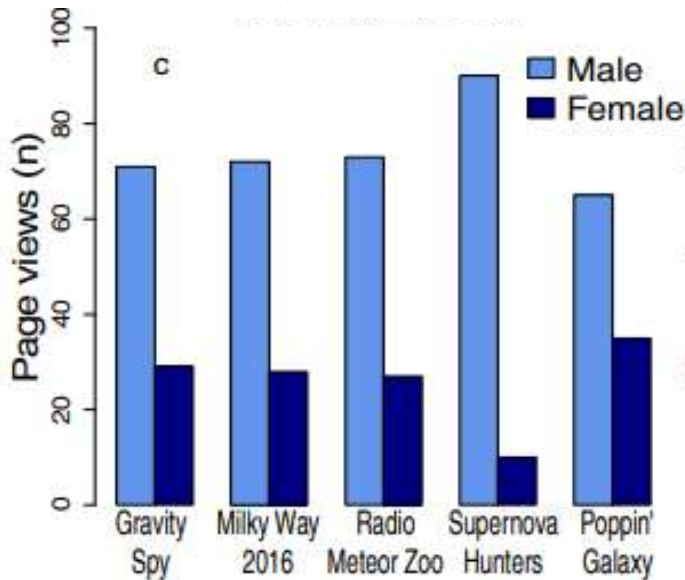


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Demography - gender

Astronomy-related projects



Ecology-related projects

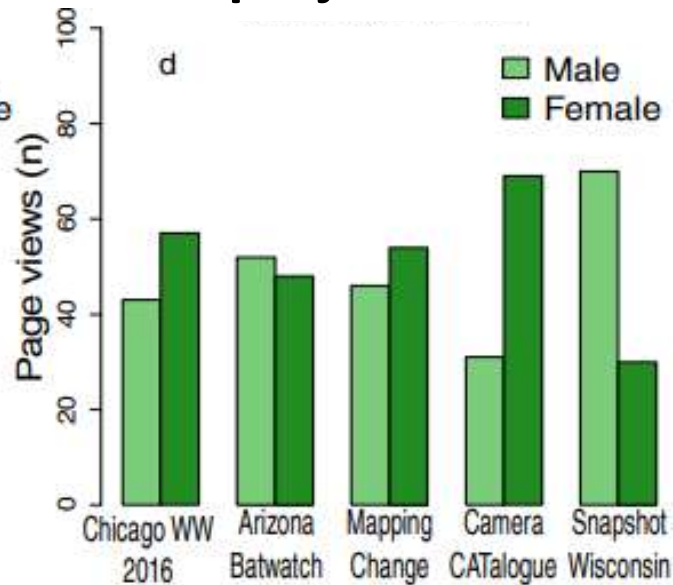


Figure 3: Domain-specific demographic features are observed for Zooniverse projects.

2018



www.zooniverse.org

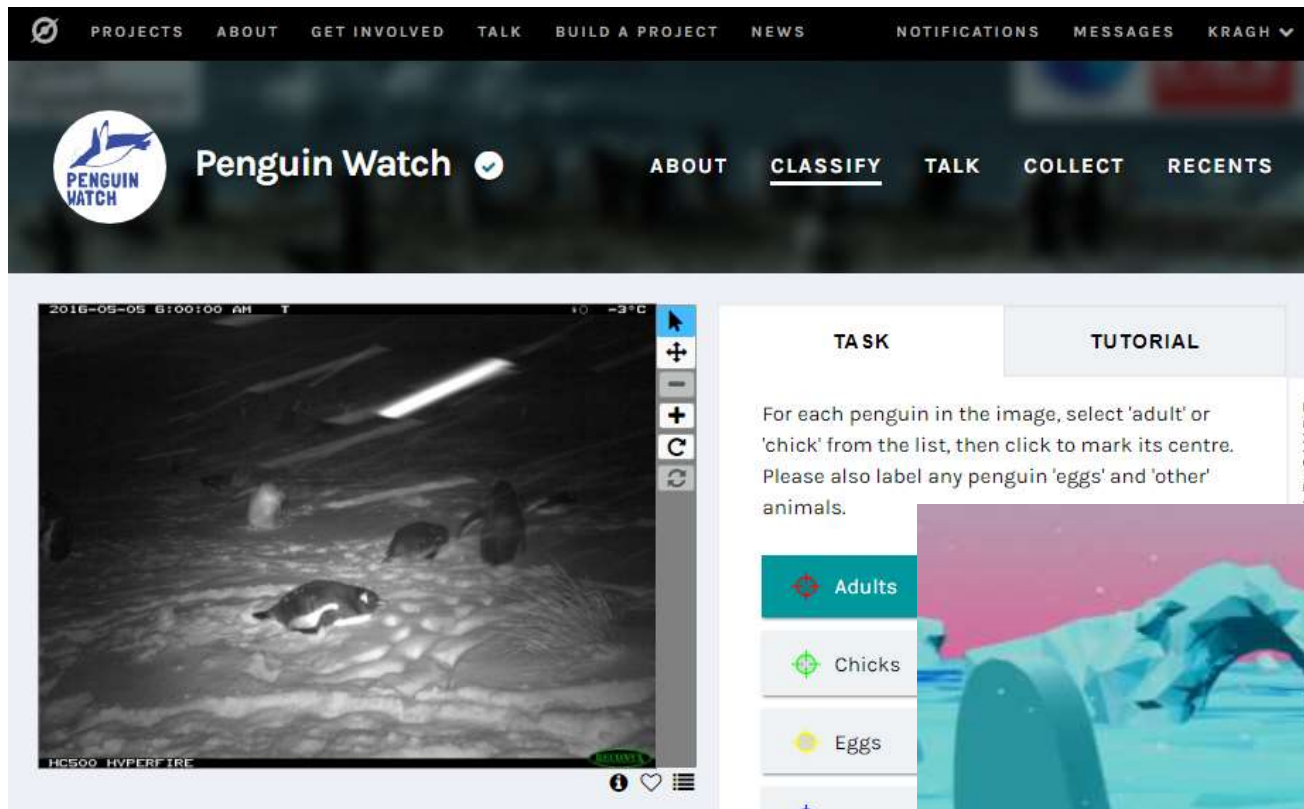


[@the_zooniverse](https://twitter.com/the_zooniverse)



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DIFFERENT ONLINE CITIZEN SCIENCE APPROACHES



The screenshot shows the Penguin Watch web interface. At the top is a dark navigation bar with links: PROJECTS, ABOUT, GET INVOLVED, TALK, BUILD A PROJECT, NEWS, NOTIFICATIONS, MESSAGES, and KRAGH. Below this is a header section with the Penguin Watch logo and a navigation menu: ABOUT, CLASSIFY (underlined), TALK, COLLECT, and RECENTS. The main content area is split into two panels. The left panel displays a night-vision camera feed of a penguin colony on ice, with a timestamp '2016-05-05 6:00:00 AM' and a temperature '-3°C'. The right panel contains a 'TASK' section with instructions: 'For each penguin in the image, select 'adult' or 'chick' from the list, then click to mark its centre. Please also label any penguin 'eggs' and 'other' animals.' Below the instructions is a 'TUTORIAL' tab and a 'LD GUIDE' link. A list of labels is provided: 'Adults' (with a red dot icon), 'Chicks' (with a green dot icon), and 'Eggs' (with a yellow dot icon).



CHILDREN AND STUDENTS AS AN AUDIENCE

Why focus on children?

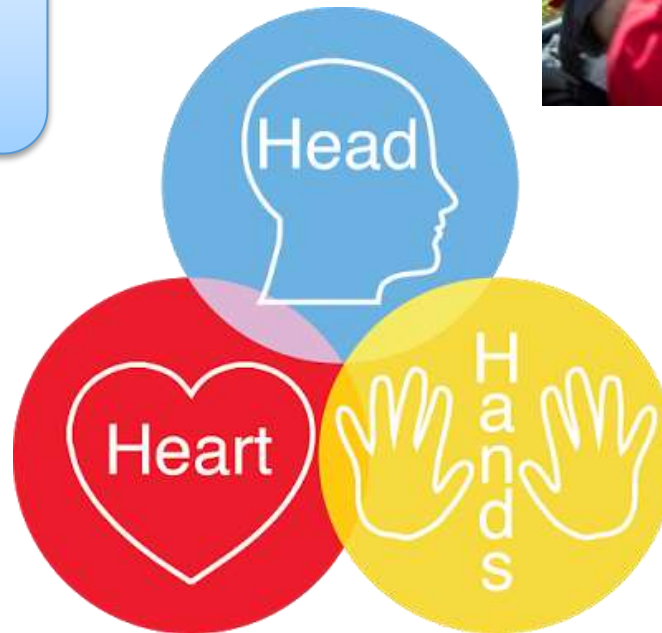
- Citizens, scientists and leaders of the future
- Understanding of scientific process
- Foundation for sustainable behaviour
- Encourage a love of the outdoors
- Increase personal, social and emotional development¹



¹OFSTED, 2008

HOW TO ENGAGE CHILDREN

Knowledge,
science &
data



Sense of
connection &
responsibility

Real field
science
experience



HOW TO REACH THE CHILDREN - EDUCATORS

TEACH EARTH

Let the forest be YOUR classroom

- *Empower educators to use citizen science*
- *Ensure curriculum relevance*
- *Simple projects*
- *Explain science ‘for children’*
- *Based on the SDGs*



LET THE
EARTH
BE YOUR CLASSROOM!

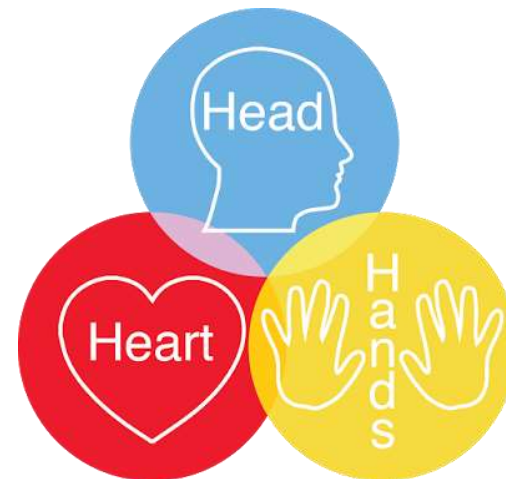


- Very simple
- Paired design earthworm & soil parameter sampling
- No training, just instructions
- Fun!



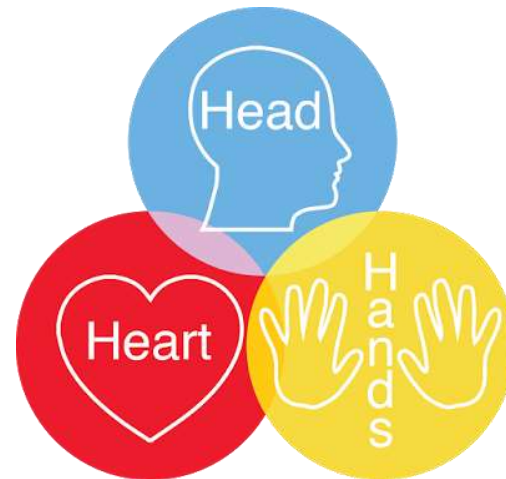
USING CITIZEN SCIENCE IN SCHOOLS

*“The children have really taken the key water saving message **to heart**.”*



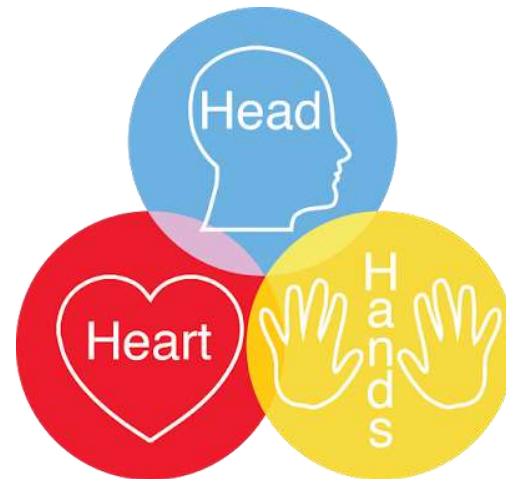
USING CITIZEN SCIENCE IN SCHOOLS

*“The children have really taken the key water saving message **to heart**. It has been lovely to see how enthusiastically **they thought of***



USING CITIZEN SCIENCE IN SCHOOLS

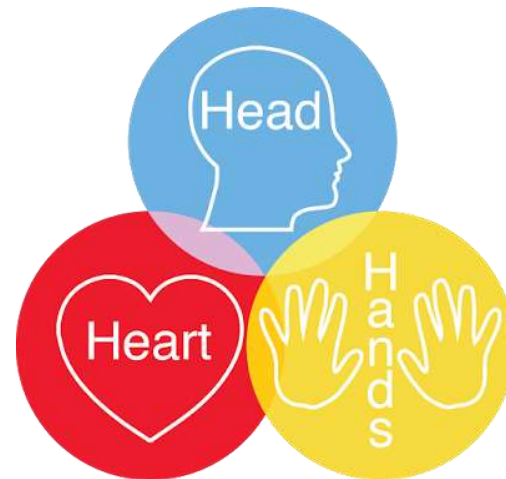
*“The children have really taken the key water saving message **to heart**. It has been lovely to see how enthusiastically **they thought of new ways to reduce their own water use**”*



USING CITIZEN SCIENCE IN SCHOOLS

*“The children have really taken the key water saving message **to heart**. It has been lovely to see how enthusiastically **they thought of new ways to reduce their own water use** and **spread the message throughout the community**”*

Tracy Guild, 2016 Teach Earth Participant



FEEDBACK FROM STUDENTS

"Citizen science is that we are making sure that we get to behave and think like scientists and make points, observe, evaluate theories and it is important because everyone must have the right to invent"

Kornelia, Bell Lane Primary School



"I learnt that we must take action and keep the world safe"

Leah, Nafferton Primary School

CORPORATE AUDIENCES

Do employees even volunteer?

- ✓ Yes, they do!
- ✓ 10% of employees in the UK volunteer at least once a year through work
- ✓ Where available, 99% of employees participate!



Community Life survey, 2014/ 15

CORPORATE AUDIENCES

What's in it for the corporate partner?

- ✓ Reduced turnover by committed employees
- ✓ Improved relationships
- ✓ Responsible corporate culture
- ✓ Meaningful volunteer work
- ✓ Better well-being



America's Charities, 2018

- Initially HSBC staff (now many spin-offs)
- Water quality monitoring tool
- Global & local methodologies
 - Simple protocol
- Easy & relevant participation
 - App & web
- Immediate feedback provided



HOW **FreshWaterWatch** AFFECTED PARTICIPANTS

95%

Inspired to reduce environmental impact

91%

Contributed to local/company sustainability programme

89%

Improved understanding of local & global water issues

77%

Motivated to continue with company



Earthwatch, 2016 (n=450)

FEEDBACK FROM CORPORATE PARTICIPANTS

“It is very reassuring to learn that my employer is supporting such important research.”

“...I don’t know about you, but I’m looking at my garden trees very differently after this event.”



EMERGING SCIENTISTS AS AN AUDIENCE

They are the future citizen science project leaders!

➤ *Helping them will help future projects...*

➤ *Earthwatch often includes training for emerging scientists in our projects and collaborations - such as the OPENER project*

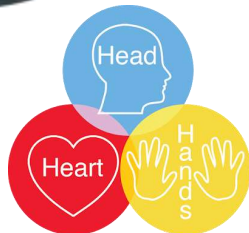
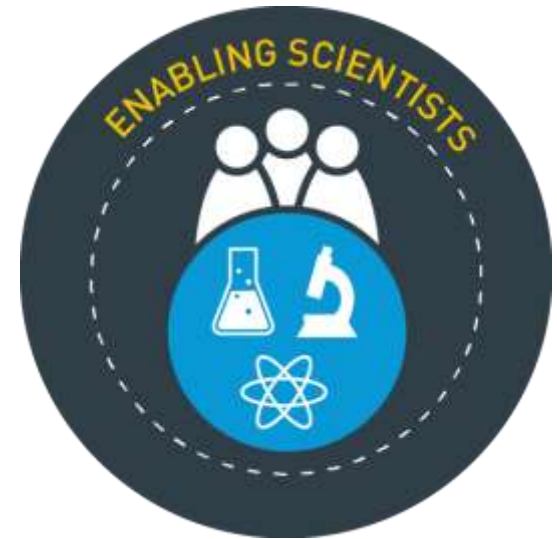


AUDIENCES

Motivation



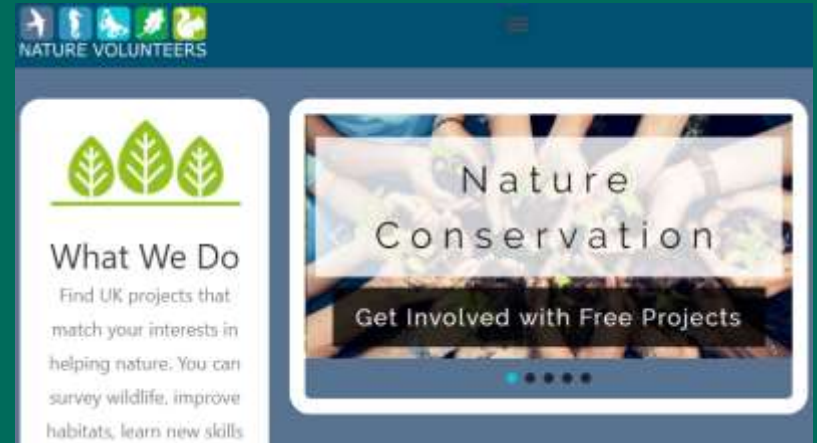
Levels of Engagement



Fun

DISCUSSION TIME

- Matchmaking between projects & volunteers?



- Should we try to engage the ‘lighter’ greens?
- How do we do that?

THANK YOU!

AND THANK YOU TO ALL THE AMAZING
VOLUNTEERS CONTRIBUTING TO OUR
PROJECTS



Gitte Kragh
Earthwatch Europe
gkragh@earthwatch.org.uk

Helen Spiers
University of Oxford /
Zooniverse
helen@zooniverse.org