

Fractional **Influence**

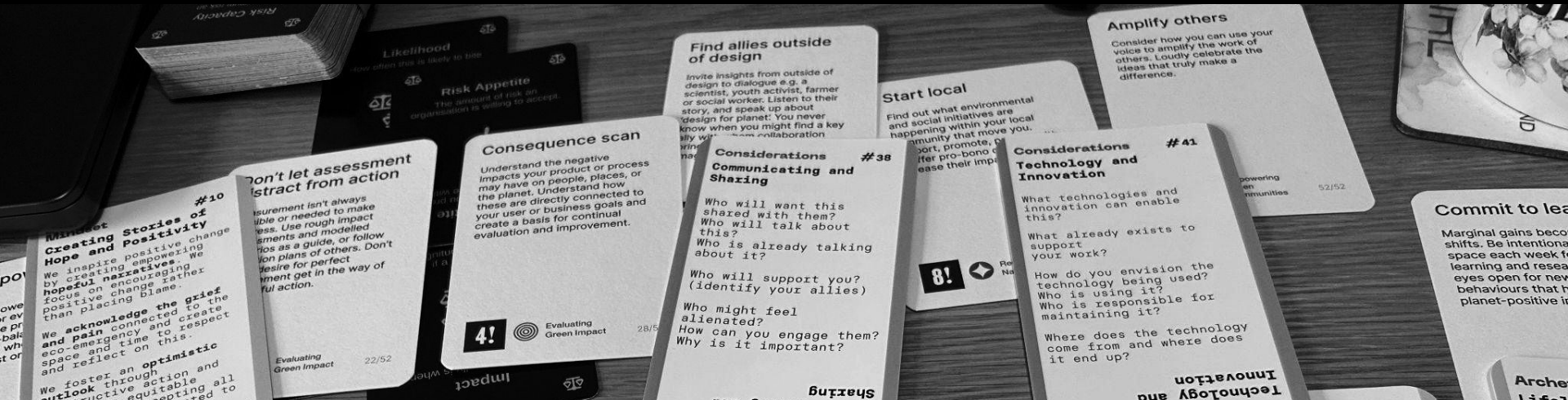
everyday 'greening' as a contractor in tech

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Macknowlogist



Acknowledgements: Show the work (Data Feminist Principles)

Michael Kibedi, Sandrine Herbert Razafinjato (Design Declares), Dr Rob Phillips (Ecological Citizenship Network), James Bore (Security & Risk), Torrey Podmajersky, Maya Elise Joseph-Goteiner, Kim Mats Mats, Oliver Winks, Adam Newman, Mark Buss, Alexander Dawson, Heidi Swigon & my fractional teams 🌟



After Green IO last year, I found myself thinking...

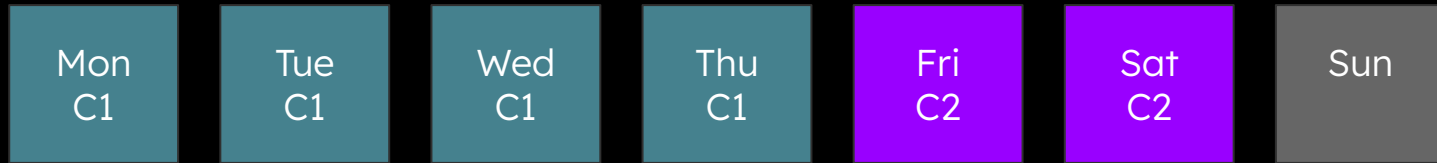
Can a contractor (like me) make a difference to energy-use in tech through my work?



5 real-world scenarios...
Tips / Levers / Strategies

What is fractional?

Strategic Product Partner = Fractional Product Manager and UXer



C ~ Client

Fractional cons...



and pros



Time constrained (1-6 months)

Advise | fix | decide | product vision

No budgetary control

You are there for efficiency

Limited access to admin tooling

Trends, network

Not a line manager

Trust, relationships, influence

1. Warm-up: Story

Product

An educational IDE for teaching 11-22 year olds how to code

As a teacher, I need to write instructional materials (e.g. text and images) in an exercise, so that students have everything they need without leaving the page.

Observed behaviour

Teachers seem to upload large images...

1. Warm-up: What



Pre-session



Add instructional
content



Behaviour



Classroom



Homework



E.g., 8.9 MB
> 2000 px w

Support
.webp

Only render larger
version if needed

Convert the image to
webp upon upload

Improve image
delivery

Reuse images

Optimise dimensions

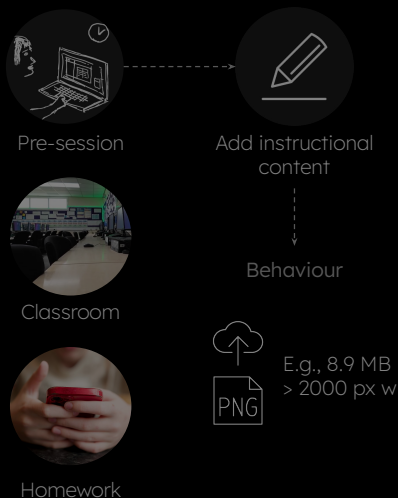
Minimise download size

!D “Question everything”

1. Warm-up: How

Seeds planted at 4 months 

“Use the least amount of energy possible”



Support
.webp

Only render larger
version if needed

Convert the image to
webp upon upload

Improve image
delivery

Reuse images

Optimise dimensions

Minimise download size

Improved accessibility

Chunk content
(text & images)

Self-serve content catalogue
(request before copy)

Shared library for all learning
content in a school

“Use the least amount of embodied carbon possible”



Make the case

/ < Storage and cost

Average png = 150 KB vs webp = 10 KB

150 png images per year * 200 teachers = 4.5 MB

150 webp images per year * 200 teachers = 0.3 MB

4.2 MB per year
saving

/ > Performance

- + CPU intensive - JS implementation of Python
- + Scale (200 teachers * 60 students) = 12,000 students

58

61

/ > Customer experience



Classroom



Homework

12% of parents

said their child relied on a smartphone to complete schoolwork

Levers and Impacts

/ Technology Levers

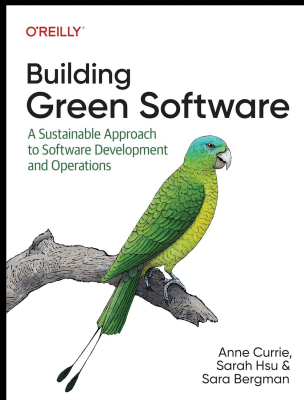
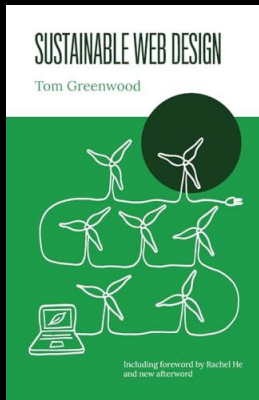
Who?

CTO

Dev team

Product team

Best practices, trends,
constraints



/ Customer Levers

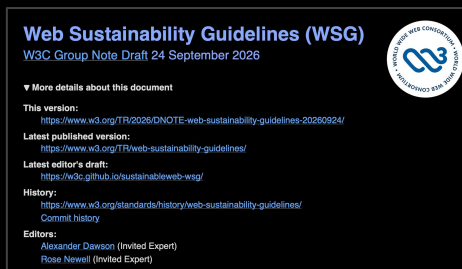
Who?

Founder

Sales

Product team

From clients' customers



/ Business Impacts

Who?

Founder

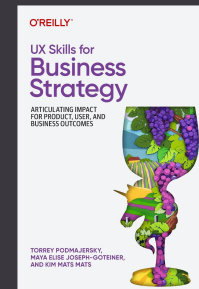
Sales

Funders

Indirect / combined

Improve user outcomes

Reduce risk
(regulatory/legal)



Find the levers,
make the change

2. Clicky joints: Story

As a teacher, I want to enrol a group of students onto a course in a single action, so that I can set up an entire class without repeating steps for each student.

Observed experience

This is taking way too long...

- Dashboard
- Courses
- Projects
- Students**
- History

16

Manage Group Members

Add members for 'Quality test class'

Current Members Add Members **Teachers**

Search for members	
Teachers	Details
2 teachers selected	
Charlotte	☐
Fiona	☒
Heather	☒
Richard Jones	☐
Robert Smith/Teacher	☐

Create Group

Add group details, students and teachers to this group

Create Group Add Students Teachers Current Members

Students

Search for existing groupby name...

Teachers

Search for existing groupby name...

0 Selected (0/0)

Select to Add

Students (0)

0 Existing Selected

Mr. Lant



Ms. Pong



Cancel

Create group

2. Clicky joints: How

EC “Spark change”

EC “Creating stories of hope and positivity”

Seeds planted at 7 months 

Design cycle origin: Deliver | Iterate

Technology levers 

Reduce redundancy (-4 clicks)

Business impacts 

(Podmajersky, Joseph-Goteiner & Mats Mats, 2026)

- Improve user outcomes 
- Save user time
- Increase employee satisfaction

Methods

Normalise conversations • rituals • habits

!D “Amplify others”, celebrate work

10 completed tickets (24.5 story points)
since March. 2 x 5 point tickets.

FM

Fiona MacNeill
4 July 2026 at 22:57

Great job @rohan - this was a nice digital sustainability and efficiency ticket as you reduced clicks for users and reduce journey complexity. Thank you!

Story point estimate

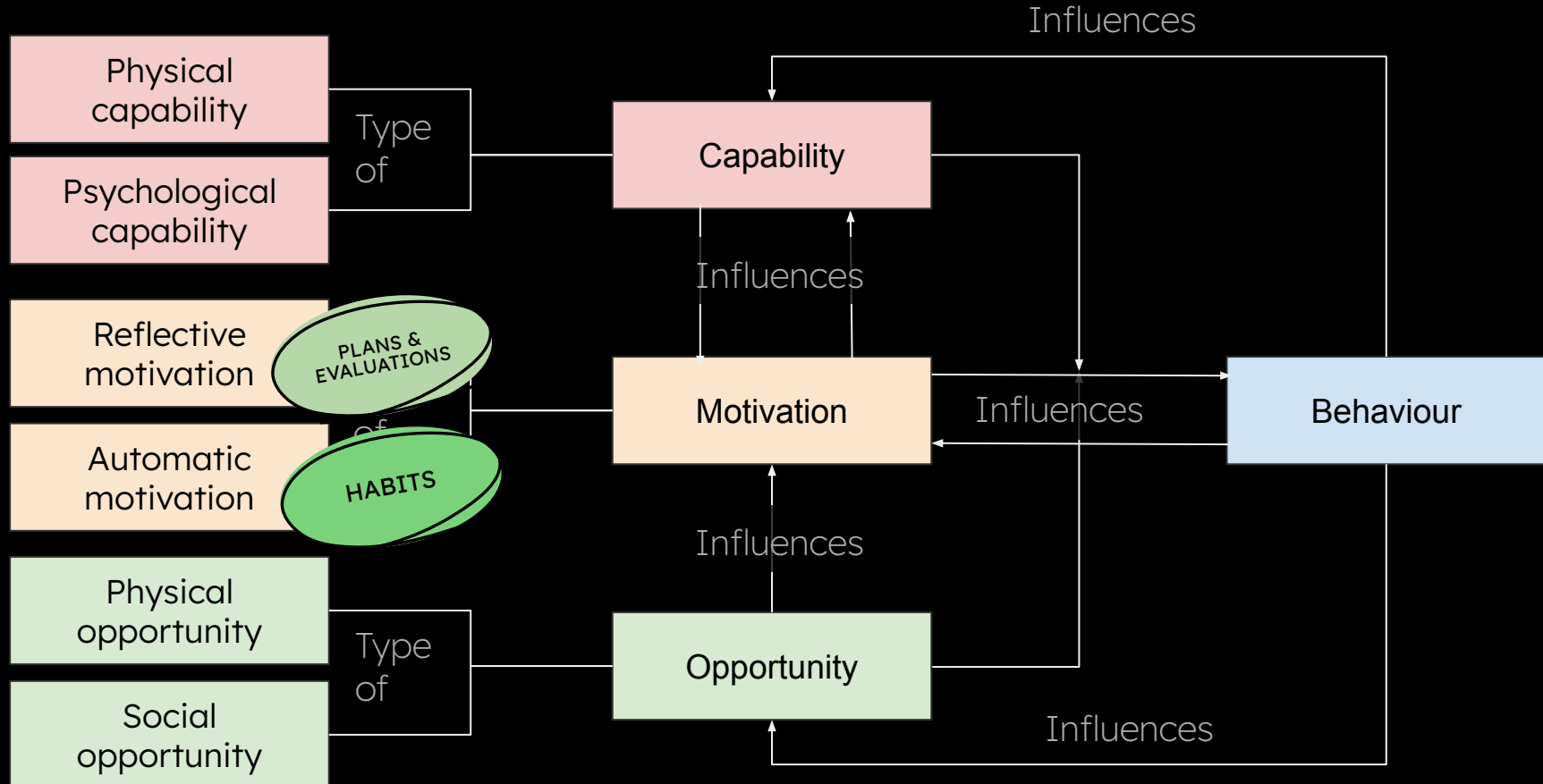
2

Labels

DigitalSustainability

ReducingComplexity

COM-B (West & Michie, 2020, p. 2, after Michie, Stralen, & West, 2011)



Tweak the culture,
change the outcomes

3 and 4 Less is more & more is less

Product 1

Teachers want to see all the students' submitted work in one place and mark it together.

My goal: Minimise tokens and reduce latency

Product 2

New customers are not always setting up reports successfully.

My goal: Reduce API calls through better design

Product 1

!D “Design with intentional friction”

Marking | Time2Code: Python Level 2 | Lesson 2 - Largest number

Spendable / Overall

👤 5 / 24

Needs Marking

🔍 5

Average Score

📊 —

Submission list

Order submissions

⌵ All statuses
+
⌵

🗖️
🔍

☐	Student	Current Lesson	Score	Status	Submissions	Q/D tests	Test runs	All help	Activity
☒	rehanabucient	Lesson 2 - Largest number	—	On time Needs marking	Submitted (6 Aug, 7:58 PM)	0/3 passed	1	No	
☒	Gillian MacDonald	Lesson 2 - Largest number	—	On time Needs marking	Submitted (2 Aug, 6:35 PM)	0/3 passed	2	No	
☒	Aoife McDonald	Lesson 2 - Largest number	—	At risk On time Needs marking	Submitted (9 Jul, 4:41 PM)	3/3 passed	5	No	✕ 16 runs
☒	Mary Connolly	Lesson 2 - Largest number	—	At risk On time Needs marking	Submitted (9 Jul, 11:34 AM)	3/3 passed	2	No	✕ 16 runs
☒	Jess Salthayn	Lesson 2 - Largest number	—	At risk On time Needs marking	Submitted (13 Jun, 8:12 PM)	0/3 passed	0	No	
☒	[Redacted]	Lesson 2 - Largest number	—	Not submitted	Not submitted	0/3 passed	0	No	
☒	[Redacted]	Lesson 2 - Largest number	—	Not submitted	Not submitted	0/3 passed	0	No	✕ 16 runs
☒	[Redacted]	Lesson 2 - Largest number	—	Not submitted	Not submitted	0/3 passed	0	No	
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☒	[Redacted]	Lesson 2 - Largest number	—	Not submitted	Not submitted	0/3 passed	0	No	

Rows per page:
10 ▾
1-20 of 24 < >

Submission list

Date submissions

Student	Current Lesson	Score	Status	Submissions	UO tests	Test runs	Help	Activity
rohanstudent	Lesson 2 - Largest number	—	Online Needs marking	Submitted (4 Aug 7:38 PM)	0/3 passed	1	No	

rohanstudent
Lesson 2 - Largest number - Submitted 4 Aug 2026, 7:38 PM

Unsubmit Go to IDE Run

Cheatsheet UO Tests (0 passed) Status: Online Test 1 of 1

```

1 #Largest number program - write your program here
2
3 # Imports
4
5 # Main program
6 def largest(number1, number2, number3):
7     if (number1 <= number2) and (number1 <= number3):
8         return number1
9     elif (number1 > number2) and (number1 > number3):
10        return number1
11    elif (number2 > number1) and (number2 > number3):
12        return number2
13    else:
14        return number3
15
16 # Main program
17
18 #
19
20 number1 = int(input("Enter the first number: "))
21 number2 = int(input("Enter the second number: "))
22 number3 = int(input("Enter the third number: "))
23 print("The largest number is:", largest(number1, number2, number3))
24

```

Feedback

Generate AI feedback

Add private notes here to remember during evaluation.

Review as Student

Skip Save & Post

Product 1: Outcomes

Seeds planted at 3 months 

Design cycle origin: Design | Develop

Technology levers 

Reduce latency, minimise page load

Green impacts

Fewer tokens by design

Relocate AI delivery to UK =
greater sustainable energy mix

!D “Design with intentional friction”

Business impacts 

(Podmajersky, Joseph-Goteiner & Mats Mats, 2026)

- Reduce regulatory & legal risk
- Reduce cost of production
- Improve user satisfaction
 - Teacher choice
- Save user time
- Increase sustainability

Product 2: Scenario + Outcomes

Seeds planted at <1 month 🌱

Design cycle origin: Iterate

Technology levers Reduce API calls 🔧

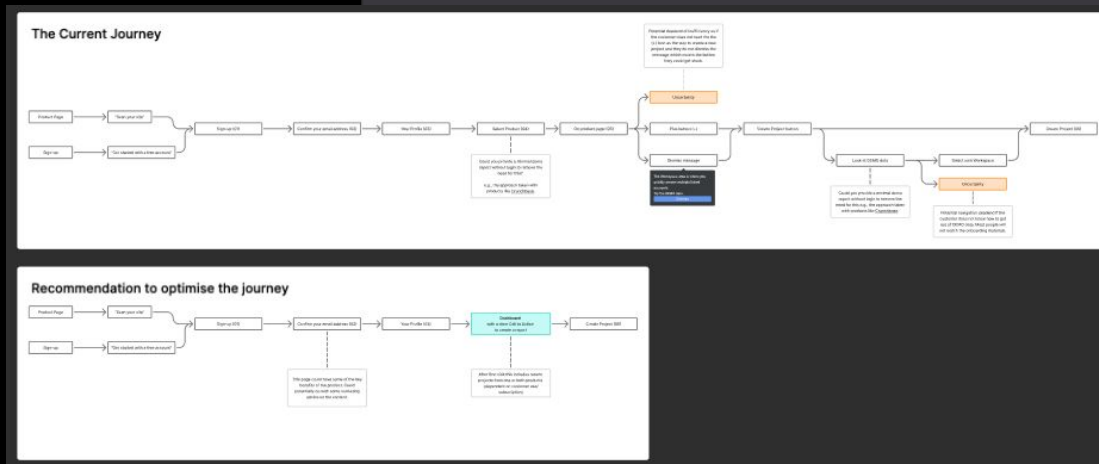
Green impacts Automated tooling, API requests (WSG)

!D “Leverage design’s potential”

Business impacts 🔧

(Podmajersky, Joseph-Goteiner & Mats Mats, 2026)

- Improve user satisfaction
- Leverage existing investments



Pay attention to journeys,
they take time and
energy

5. Moola parler

Story + Outcomes

Contribution to successful grants 🌱

Design cycle origin: Discover

Technology levers /

SCI, Gov design principles (11th),
measurement role modelling, budget for training

Customer levers:

Reporting, InnovateUK

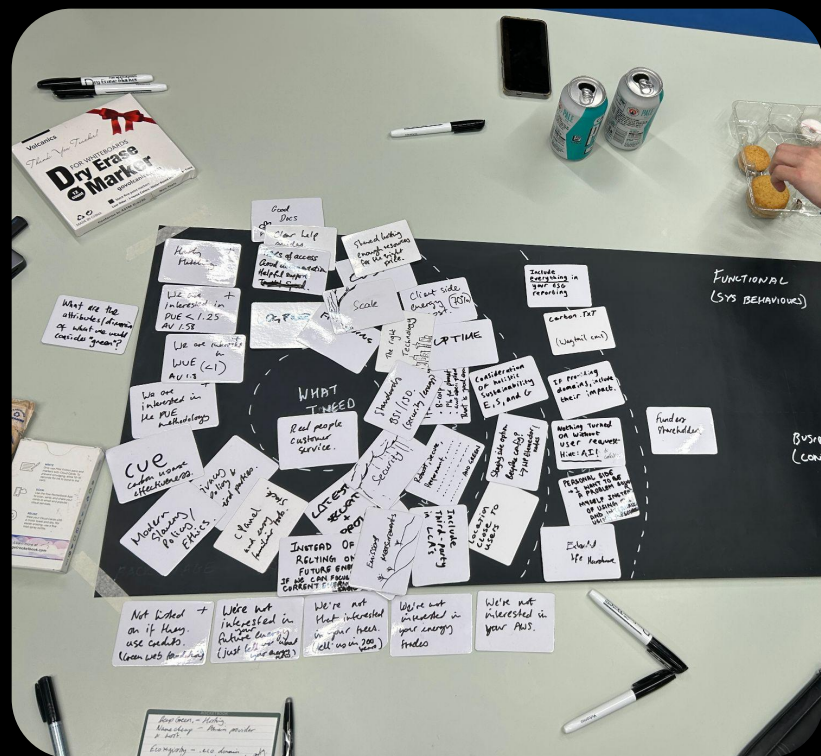
Business impacts

(Podmajersky, Joseph-Goteiner & Mats Mats, 2026)

- Reduce cost of production
- Expand market and potential audience
- Increase brand recognition

!D “Commit to learning”

!D “Bring in the experts”



Everywhere you go,
always take your values
with you

Heuristics aka rules to work by...

What *can* I measure? 

Seed change to avoid surprises. 1 month = 1 seed 

Tag for digital sustainability and reward positive behaviours 

Human factors support better experience and sustainability 

Find the levers, make the change

Tweak the culture, change the outcomes 

Pay attention to journeys, they take time and energy 

Everywhere you go, always take your values with you

So I return to my question...

Can a contractor (like me) make a difference to energy-use in tech through my work?

Yes and it can be hard to measure.

However, lots of small changes
will add up.

Continue your learning?

Code Green London Meetup (Green Software Practitioner in 2-parts)

- Tue, Nov 17 · 6:30 PM
- Tue, Dec 1 · 6:30 PM

Sign-up on meetup.com

Props to Rose Newell for
Susty Icons:

<https://sustyicons.com/>



References part 1

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<https://www.edtechinnovationhub.com/news/half-of-low-income-families-in-the-uk-say-children-will-face-digital-exclusion-over-the-summer-holidays>. Accessed: 27 Sep 2026.

References part 2 the squirrelling

Michie, S., van Stralen, M.M. & West, R. (2011) The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Sci* 6, 42. doi:[10.1186/1748-5908-6-42](https://doi.org/10.1186/1748-5908-6-42)

Podmajersky, T., Joseph-Goteiner, M., & Mats-Mats, K. (2026) *UX Skills for Business Strategy: Articulating impact for product, user, and business outcomes*. CA: O'Reilly Media Inc.

W3C (04 Sep 2026) Web Sustainability Guidelines. Available at: <https://www.w3.org/TR/web-sustainability-guidelines/>. Accessed: 27 Sep 2026.

West, R. & Michie, S. (2021) A brief introduction to the COM-B Model of behaviour and the PRIME Theory of motivation.
Qeios. doi:[10.32388/WW04E6.3](https://doi.org/10.32388/WW04E6.3)

Cards: [Design Declares Climate Action Cards](#), [Ecological Citizens Cards](#),
[James Bore's Security Risk Cards](#)

Images:

Slides 8-10: A boy focuses on his red cellphone by [Ivan Prokhorov](#) on [Unsplash](#)

Slide 11: Potatoes by [Hai Nguyen](#) on [Unsplash](#)

