Day 2 of 27-28 August 2024, The Carpentries Instructor Training

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Welcome to Day Two (Wednesday 28 August)

:::info
This document is synchronized as you type, so that everyone viewing this page sees the same text. This allows you to collaborate seamlessly on documents.

Users are expected to follow our **Code of Conduct (https://docs.carpentries.org/topic_folders/policies/code-of-conduct.html)**.

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General questions or feedback? Contact team@carpentries.org (mailto:team@carpentries.org).

Collaborative documents

This is the Document for today: https://codimd.carpentries.org/2024-08-28-ttt-escience#

Collaborative Document day 1: https://codimd.carpentries.org/2024-08-27-ttt-escience#

Collaborative Document day 2: https://codimd.carpentries.org/2024-08-28-ttt-escience#

Code of Conduct

Participants are expected to follow those guidelines:

- Use welcoming and inclusive language
- Be respectful of different viewpoints and experiences
- Gracefully accept constructive criticism
- Focus on what is best for the community
- Show courtesy and respect towards other community members

For more details, see here (https://docs.carpentries.org/topic_folders/policies/code-of-conduct.html).

Want to report a Code of Conduct incident and you prefer to do it anonymously? You can do it here (https://goo.gl/forms/KoUfO53Za3apOuOK2).

Getting help

To ask a question, raise your hand.

To get help, put a pink post it on the lid of your laptop.

Workshop website

https://researchsoftwaretrainingNL.github.io/2024-08-27-ttt-escience/ (https://researchsoftwaretrainingNL.github.io/2024-08-27-ttt-escience/)

Trainers

- Lieke de Boer (Community Manager, the Netherlands eScience Center)
- Mateusz Kuzak (Team Lead Training Programme, the Netherlands eScience Center)

Helper

- Fenne Riemslagh (Coordinator Training Programme, the Netherlands eScience Center)

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Name/ pronouns (optional) / job, role / social media (twitter, github, ...) / background or interests (optional) / city

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□ Agenda day 2

time	topic	questions
9:30	□□♂□□♀ Welcome back	What have we learned so far? What will we focus on today?
09:40	Getting Started on Instructor Certification	What do I need to do to finish certifying as a Carpentries Instructor?
10:05	The Carpentries: How We Operate	How is The Carpentries organised and run? What is the difference between SWC, DC, and LC workshops? How do you run a Carpentries workshop?
10:45	☕ Morning Beak	
11:00	Live Coding is a Skill	Why do we teach programming using participatory live coding?
12:00	Preparing to Teach	How should I prepare to teach?
12:45	Lunch Break	
13:45	More Practice Live Coding	How did you change your teaching in response to feedback?
	Working With	What are the challenges of managing a heterogeneous classroom? What should we do if there is a Code of Conduct violation? What does it mean to

14:50	Your Team	be a co-Instructor? How does an instructional team prepare for a workshop?
15:30	Afternoon Break	
15:45	Launches and Landings	How do you actually start a workshop?
16:20	Putting It Together	How are the teaching practices we have learned used in our workshops?
16:40	Wrapping Up	What can we improve in this training?
16:50	Post-training survey	Please ask your Trainer for a custom link to your post-training survey at the end of the course.
17:00	End of learning part and drinks	

Collaborative Notes & Exercises

Overview of concepts:

Novice > Competent practicioner > Expert
Expert awareness gap
Mental models
Analogies
Motivation
Growth mindset +1
Cognitive load
Short term memory
Lesson study
Think-pair-share
Formative assessment
Feedback
Feedback is a skill (gets better with practice)
Chunking as a memory management strategy
Keeping learners motivated
Multiple choice questions (plausible distractors with diagnostic power)
Concept map / mapping mental models
Formative assessment
Any questions vs What questions do you have?
Ice breaker question
Usefulness once mastered vs time to master
Handling a heterogeneous classroom (pairing advanced with novice)
Equity, inclusion, accessibility

Exercise: Questions (5 min)

At the end of part 2, we asked you to read some resources about the logistics of teaching and running Carpentries workshops. Please add your questions about logistics and preparation to the Collaborative Document. We will answer these questions in the Collaborative Document

during your work time and will return to this list later in the training. We may draw on the Workshop FAQ (https://carpentries.org/workshop_faq/), which you can also refer to later if you have additional questions.

- Are self-organised workshops public by default?
    - Many of the workshops restrict registration to learners from the hosting institution and that is completely fine. If your workshop will be open to registrants outside of your institution that is also fine, please let the carpentries know via this form: https://amy.carpentries.org/forms/self-organised/
- If you organize a workshop internal to your organisation, do you still need to announce it to the Carpentries?
    - yes please, use the same form as above.
- Is it recommended to organise workshops during two consecutive days or is it also possible or recommended to schedule some time in between?
    - You can also do 4 mornings (online). Usually we would recommend doing it all in the same week because that makes it easier for people who do this next to their work to free up time for it. But if there is a format that works great for your audience you can also do that (modules taught over a period of time (several weeks, one semester, etc.)) is also an option in the form above.
- Can we think of new workshops, that are not already in the list, to cater for a specific audience?
    - Yes please check the carpentries incubator first if someone is already working on a similar topic. https://github.com/carpentries-incubator/proposals/ Feel free to use the template of the carpentries lessons https://carpentries.github.io/instructor-training/template-md. You can always mix and match parts of the carpentries curriculum to adjust it for your specific audience. But also report this type of mixed workshop using the form above.
- How large should such audience be to justify the existence of a brand new workshop?
    - We think this is more of a question to discuss with your work collegues or an estimation to see how much time you can spend of your current work hours to invest into developing a new lesson. It could also be an idea to first get an estimation of the amount of interest for a specific topic via the different channels of the carpentries. For example via the topic box or via https://carpentries.org/connect/
- Has there ever been a carpentry workshop that awarded credits (ECs) for a degree in a Dutch University?
    - The Carpentries is not entitled to give out ECs for a degree in a Dutch University. We as eScience Center give out certificates that people attend a workshop but only indicate the number of hours that someone spend. We hope to get endorsement from dutch universities that they transfer the hours into ECs for people to use. We know that some graduate schools for example in Delft aknowledge our certificates and give EC credits for our workshps.

- Is it allowed to charge any price for the workshop so that the money is used from the host organization for other purposes?
    - Note that you are free to charge what you choose for a workshop; this is a perennial topic of discussion among the Carpentries community and there's a good summary of points here: https://carpentries.org/blog/2019/06/carpentries-workshops-fees/
- What is the procedure/timeline for having a workshop published?
    - For your first workshop, we recommend giving yourself at least three months before when you want to hold the workshop to sort out the logistics and planning. In both cases (self- or Centrally-Organised), you can start the workshop process by completing the Carpentries workshop request form https://amy.carpentries.org/forms/workshop/ and then proceeding through the relevant checklists and list of tips here:
    - https://docs.carpentries.org/topic_folders/hosts_instructors/index.html
    - https://carpentries.org/blog/2019/10/organising-workshops/
- How further can we differ from the core Carpentries material when we are giving self-organized workshops? e.g. can we teach Git based solely on GitHub instead of Unix Shell?
    - You can make small adjustements, you can reorder or cut if necessary. If you skip whole part like Git on the command line, then you cannot call it Software Carpentry workshop.

Exercise: Schedule a checkout step (10 min)

Take a moment to review your calendar and sign up for one or more sessions to get your checkout process rolling!

Visit the Welcome Session Etherpad: https://pad.carpentries.org/welcome-sessions-2024

Visit the Teaching Demonstrations Etherpad: https://pad.carpentries.org/teaching-demos

If you would like to attend another community session for your 'Get Involved' step, visit the Community Sessions Etherpad: https://pad.carpentries.org/community-sessions-2024

Exercise: Anticipate the Impact (5 min)

List some advantages and challenges of participatory live coding from both a learner's and an instructor's point of view in the Collaborative Doc.

Advantages

- Show how to debug at live pace
- Help keeping the right pace (say what you are going to code, say it while writing and afterwards say what the command is you used)
- It is more engaging and interactive (especially for debugging)
- Teachers as learners
- Allow people to practice immediately after/during learning. i.e. no delay between learning and practicing & you can immediately ask questions (compared with follow online training by yourself)

- Immediate feedback for the student to see if their code works - very pragmatic
- Opportunity for feedback if questions/doubts/problems come up during putting learned material into practice
- Clearly shows exactly what learners need to write

Disadvantages

- You depend on the students having the right set-up (make sure to check this and make time for this in the beginning of your workshop before you begin)
- It requires a very skilled instructor to handle all the questions and also know a lot of code (when teaching please follow the lesson content, the further you get away from this you enter a danger zone).
- For the teacher, unless you have another tablet or notes, you have no reference material (yes we usually use a second screen/laptop/tablet that contains the lesson material that is only visible for you)
- For the teacher, can be a bit chaotic / intimidating to do things live (true! practice!)
- For the learners, if you move on too fast the student may miss important lines of code (please use a collaborative document for people to look-up previous commands or have enough helpers to quickly ask something)
- You miss some of the feedback that you may otherwise naturally get while teaching, because you're looking at your screen for some of the time (use your helpers to bring important questions to your attention or to let you know to slow down or speed up).
- Especially in an online workshop you're very dependent on the right setup, secure wifi etc. (yes, maybe you can test everything with your co-instructor beforehand).

Exercise: Compare and Contrast (15 min)

Watch this first participatory live coding demo video: https://youtu.be/bXxBeNkKmJE and this second demo video: https://youtu.be/SkPmwe_WjeY and then summarize your feedback on both in the Collaborative Doc. Use the 2x2 rubric for feedback we discussed earlier.

In the videos, the bash shell for loop is taught, and it is assumed learners are familiar with how to use a variable, the head command and the content of the basilisk.dat and unicorn.dat files.

Difference between the videos:

- standing instead of sitting (more active, easier for students to see you and you can see the classroom better, easier to speak loud)
- about the terminal: the fond is bigger, white background with black letters, mirror your learners terminal, the window of the terminal is up (new code that you are typing is at the bottom of the terminal and might not be readable from the back)
- less distractions: no browser, no notifications, no phone call
- he is saying his code
- eye contact with the audience
- asks about the red sticky note
- he gave a recap of the previous lesson
- he pointed out alternative ways to write the same code
- the pace of the second video was better, but still a bit fast (ask your audience if they got the same result after a few lines)
- use the typo to explain more instead of ignoring it

Exercise: Imagine a Learner (5 min)

Take a moment to silently imagine a learner who might attend your workshop. What is their background? What problem do they face? What will they gain from attending your workshop?

- Anne-Marie: I will be teaching and supporting absolute beginners in the R for Reproducible Scientific Analysis workshop. The people who will be there are librarians, beginning data stewards and other research support staff who want to get a better understanding of R to better support their researchers. The problem they face is that they're usually complete novices to programming in any form. On the other hand, that is also a good thing because they will all start out at the same level, installation. From my workshop they will gain a basic insight into what coding is, what R can do, and how they can read a researcher's R script.
- Ewan: the learner is probably an academic researcher who wants to improve their research by following a workshop. They will probably not have an inherent interest in programming. They might want to automate some of the tasks they have or deal on a large scale with data. They will learn about the tools out there and about some programming principles. They won't learn enough to fully solve therir problems at once, but will know what's out there and what to search for.
- Sam: Researchers from my faculty will attend (background in life sciences and health) who have little to no experience with R. They want to be able to more effectively organize and manipulate their data and will learn to do so by attending the training.
- Daniele: I will be teaching mostly Geospatial Data Carpentries, so to researchers interested in spatial analysis. They usually don't have advanced technical / coding skills, nor extensive knowledge on GIS (just the basics). From my workshop they will learn how to work with spatial data in R and perform basic geoprocessing analysis and statistics.
- Thijs: this learner has almost no background in the programming language that's being taught. Problem faced is how to setup the necessary tools and software to get going, and to run a first script succesfully. So, working with an appropriate IDE is also part of what needs to be learned. The learner will be able to run a script, and do some first steps in the programming language, e.g., exploring data.
- Jelle: Learners are starting Master and PhD students. They need to structure their research project and choose a directory structure to work with. The workshop will give them a starting point where to store their data, software and other documents.
- Laurent: Learner is probably a starting PhD student with little experience in programming. They want to learn git to be able to collaborate with other researchers.
- PhD students that want to learn python to use it in their research. They have no background in programming. During the workshop we will explain basic concepts and provide practical examples on how they are actually used.
- The learner is probably a researcher with different research background, who may have coded for research but has not had formal courses.
- I will be teaching an introductory course on R. My audience includes researchers needing to do data analysis in R.
- Tiernan: A PhD candidate with a humanities background. They have not had to learn programming as part of their previous studies but they believe that it will be necessary to develop some skills in order to work with the data they collect during their studies. By attending the workshop, the learner will get their first experience in Python/R and can identify what resources are available to continue to learn.
- Néstor: A PhD student/ lack of knowledge on gitbash, and requires automation of tasks/ have the skill to automate repetitive tasks and make reproducible proccesing tasks.
- Parvin: MSc PhD students who want to learn about a specific topic. they already know a lot and they are after new advances or sharing their work with their peers for feedback and collaboration.

- Daniele: BSc students with no previous experience of Git. They have some experience in coding, but their usecase is mostly about using Git for authoring scientific papers. They face the problem of version controlling their paper, and I would like to help them developing a skill that they can use proficiently when writing their thesis, and reuse for other types of coding
- Efe: Learners are young researchers who are starting their project and using GIT for the first time. Being at the beginning of their project, they need to organize their steps, track changes automatically, do proper version control, prepare documentation and eventually publish. Therefore they need GIT from the start. They will learn what is GIT, why is it useful, how to set it up and how to use it.

Live Demo Rubric

what questions do you have about the Rubric?

- Is there a chance that we'd have to do the teaching DEMO again? E.g. if the people assessing think you're not suitable to teach? And how often does that happen.
    - Yes it sometimes happens that someone has to repeat the teaching DEMO again, but that is no problem at all. Sometimes people can blank out. See it as an extra possiblity to practice and get more feedback on your teaching!
- re "Jumps into the content without context" as a negative assessment criterium: in the demo it was just said that we should assume that the demo-learners were present for the build-up to it, so it's weird to negatively evaluate this in the context of the demo.
    - Yes you are right this is a bit unclear. I think they mean that it will be good if you introduce the lesson & content with a few sentences. Something like "we just finished the section about..., lets now start with this new part about..." and then start live coding.
- How far can we deviate from the core Carpentries material when we are giving a Carpentry lesson / workshop? e.g. can we teach Git based solely on GitHub online instead of Unix Shell?
    - You can make small adjustements, you can reorder or cut if necessary. If you skip whole part like Git on the command line, then you cannot call it Software Carpentry workshop.
- How do we recieve feedback after a demo? in case we need to redo a demo, do we know what to improve?
    - You will give eachother feedback (there are max 5 new instructors in the zoom meeting) based on the same schematic as we used during the instructor training workshop (what went well/ what to improve on content and on presentation). You can keep notes for yourself so you can keep track of what to improve for next time. If you are asked to redo a demo you will receive an email which explain why and will include what you need to improve.

Exercise: Know your resources (10 minutes)

1. Take 5 minutes to read through the Code of Conduct Incident Response Guidelines: https://docs.carpentries.org/topic_folders/policies/incident-response.html

2. Discuss what you have read with your neighbour. As questions arise, you may wish to refer to our complete Code of Conduct section in The Carpentries Handbook: https://docs.carpentries.org/topic_folders/policies/index_coc.html or to the Transparency Reports released by The Carpentries Code of Conduct Committee: https://github.com/carpentries/executive-council-info/tree/master/code-of-conduct-transparency-reports

What kinds of things could your instructional team agree upon in advance of your workshop?
What questions do you have about CoC enforcement?

Exercise: Planning together (10 minutes)

With a partner, imagine that you are planning a workshop together. For this exercise, you may assume that your workshop has a separate, designated Host.

- How would you prepare to teach a workshop together?
- How would you coordinate with other members of your instructional team (e.g. Host, Helpers)?
- What kinds of things will you do to support each other during the workshop? What won't you do?

Record some notes, and share your thoughts with the group. This exercise should take about 10 minutes.

Exercise - What is an introduction? (5 minutes)!

With your neighbour, discuss:
What do you hope to accomplish in a workshop introduction?
What information do you need to include in an introduction to accomplish these goals?

Exercise – making the last moments count! (5 minutes)

What could you do at the end of a workshop? What would be the value? Discuss and write down suggestions in the CodiMD

Concepts/Theories

- Mental model mapping - making sure everyone is on the same page
- Formative assessment
- Chunking: we can only remember 5-7 things so grouping them into chunks can improve the amount we remember
- Formative vs summative assessment
- Expert awareness gap
- Growth mindset
- Multiple choice questions - how to get information on even why students gave a wrong answer
- Motivation to learn
- formative/summative assessment
- equality vs equity
- Laurent: Dismissive language, Load cognition.
- Keep the content simple
- growth mindset

- mental model
- *Growth mindset* in action: *Practice makes progress*.
- kind feedback

Tools/Practices

- green / red stickers
- "What questions do you have" - more inviting way to ask for questions
- Code of Conduct
- Turn off notifications!
- think-pair-share as a method to use for formative assessment
- live coding
- Live coding
- Laurent: Live coding
- Live coding: keep an appropriate pace, usually slower than you think
- Practice giving/receiving feedback
- Separating the responsibilities of the host and the instructors to reduce the distractors for the instructors
- collaborative document
- Lesson demos to other instructors to improve and share innovative teaching methods
- The carpentries incubators
- How often to run formative assessments/break up instruction with exercises (every ~ 10 minutes)
- co-instructing
- Using answers to determine what might be misunderstood (I forgot the name)

Resources

- Checkout instructions: https://carpentries.github.io/instructor-training/checkout
  For questions about the checkout process please email instructor.training@carpentries.org
- Workshop website template: https://github.com/carpentries/workshop-template
- Carpentries incubator: https://carpentries-incubator.org/
- Topicbox (messaging forum): https://carpentries.topicbox.com/groups/local-netherlands
- AMY profile login:
  https://amy.carpentries.org/account/login/?next=/dashboard/
  Make sure you have created a profile in The Carpentries database (AMY). If you have not yet, please visit https://amy.carpentries.org/forms/request_training/ and select “Profile Creation for Pre-approved Trainees”. In the Registration Code field, you can enter the code your local Carpentries coordinator gave you to sign up for the training.
- Get connected:
  https://carpentries.org/connect/
- Get into contact with the carpentries core team:
  https://carpentries.org/contact/
- Live coding rubric: https://carpentries.github.io/instructor-training/demos_rubric.html
- Complete Code of Conduct section in The Carpentries Handbook:
  https://docs.carpentries.org/topic_folders/policies/index_coc.html
- Transparency Reports released by The Carpentries Code of Conduct Committee:
  https://github.com/carpentries/executive-council-info/tree/master/code-of-conduct-transparency-reports
- Code of Conduct Incident Response Guidelines:

https://docs.carpentries.org/topic_folders/policies/incident-response.html

- Code of Conduct violations examples and responses (note: this is a lesson developed by the Carpentries CoC Committee that has been dormant for a while, so not everything is up to date. However, it can give an idea on how to respond to certain incidents):
  https://carpentries.github.io/community-facilitators-program/03-4-code-of-conduct-facilitation-scenarios/index.html

post workshop survey:
https://carpentries.typeform.com/to/cjJ9UP?typeform-source=researchsoftwaretrainingnl.github.io#slug=2024-08-27-ttt-escience