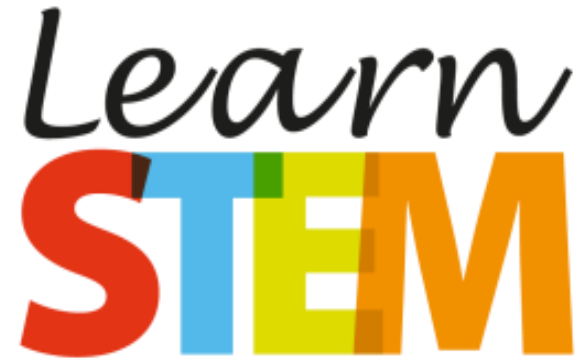
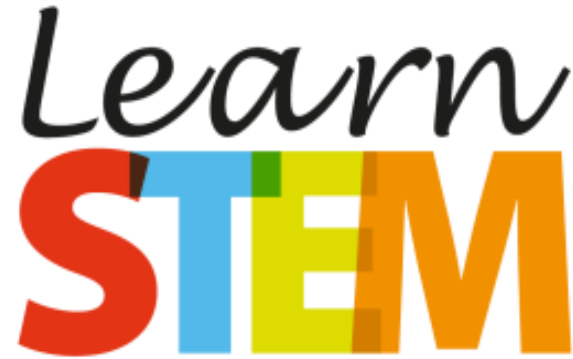


Learn STEM Online Course



Week 3: Teacher-centred STEM Education

Learn STEM Online Course



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Week 3: Teacher-centred STEM Education

1. Analysing the four phases for teachers
2. Discussing projects of teacher-centred STEM education
3. Testing innovative instruments and tools



1. Analysing the four phases for teachers

Overall structure for Learn STEM phases

Overall structure:

Phases for the teachers

- Iterative cycles:
- Design - Experiment - Analyse - Rethink and then improve (going back)



Discussion of the Learn STEM phases

What do
you think?





2. Discussing projects of teacher-centred STEM education

Go-Lab for Inquiry-Based STEM Learning

GO-LAB

Labs

Apps

Spaces

Authoring

Support

Premium

About

News



EN



Sharing and Authoring Platform

Find the largest collection of online labs, try-out interactive inquiry apps, combine labs and apps into Inquiry Learning Spaces, and share these with your students and colleagues.



Thousands of schools all over the world remain closed for the next weeks or even months due to the SARS-CoV-2 (COVID-19) pandemic. In order to support them in delivering online education, we invite all schools and teachers to use the Go-Lab Ecosystem for online STEM teaching. The platform and all tools (including premium labs) are available free of charge. Find more information [here](#).

LAB



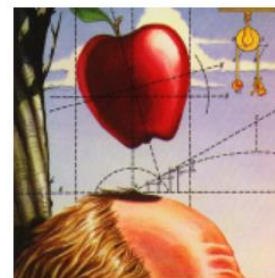
Electrical Circuit Lab

APP



Hypothesis Scratchpad

LAB



Gravity Force Labs

LAB



Acid-Base Solutions



Scientix - science education community

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36 LESSON PLANS CREATED BY TEACHERS AVAILABLE NOW!

Scientix offers 36 unique lesson plans from the “STEM Is Everywhere!” MOOC

SOMR available to any teacher, Ministry of Education, STEM expert during the current COVID-19 lock-down period:

[READ THE INSTRUCTIONS!](#)

In your country

Observatory

Discussing teacher-centred projects

Think about your own teacher-centred projects developed or used in your STEM education: What are good examples from your lesson plans and learning tasks for your pupils?

Please select & upload good teacher-centred projects with interesting samples of learning activities and tasks from your teacher-centred STEM education.

Or describe them using our Case template from week 1.



3. Testing innovative instruments and tools

Testing innovative instruments & tools

1. Our tools for beginners and experts in online learning
2. Complex environments
3. Creating websites
4. Collection of other tools

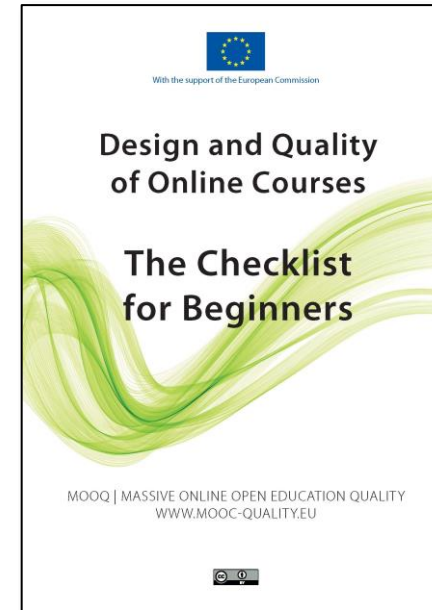
Please note our important warning for you as teacher!

For beginners & experts in online learning

1. Free tools for beginners & experts on the design and quality in online learning:

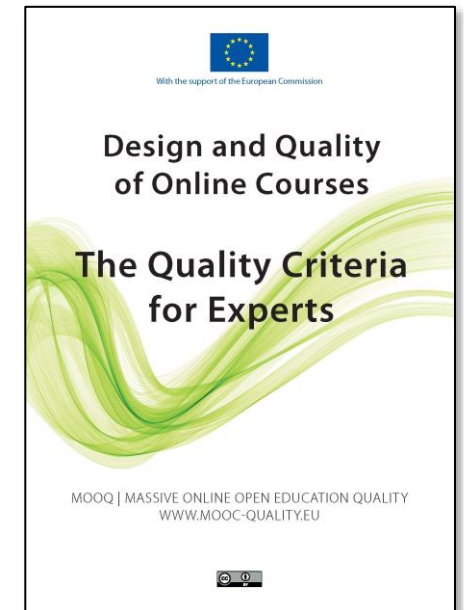
The Checklist for Beginners

www.mooc-quality.eu/online-courses-checklist-beginners



The Quality Criteria for Experts

www.mooc-quality.eu/online-courses-quality-criteria-experts



Complex environments

2. Free complex environments:

Microsoft Teams (recommended):

<https://www.microsoft.com/en-us/education/products/teams>

Microsoft Office 365 Education:

<https://www.microsoft.com/en-us/education/products/office>

Microsoft Remote learning:

<https://www.microsoft.com/en-us/education/remote-learning>

Google G Suite for Education:

<https://edu.google.com> (and Google Docs: <https://docs.google.com>)

Creating websites

3. Creating websites:

Wordpress is THE standard for websites but not easy to install:

<https://wordpress.org> (worth to consider a third-party website hosting)

A simple way to start with your own website:

<https://www.wix.com>

An alternative for the collection and aggregation of different sources on a topic selected by you:

<https://scoop.it>

Or alternatively, you can simply use one of the online boards from week 2:

<http://board.net> or: <http://padlet.com> or: <https://bitpaper.io>

Collection of other tools (1)

4. Collection of other tools:

Powerful for creating, combining and re-using of content, recommended:

<https://h5p.org>

For your (and your pupils') collaboration, communication and documentation:

<https://trello.com>

For creating your own recordings and live streamings, recommended:

<https://obsproject.com>

Collection of other tools (2)

4. Collection of other tools:

A platform with great and many license-free photos:

<https://pixabay.com>

Another platform with license-free photos, not that big:

<https://unsplash.com>

Voting with your pupils on any devices (online and offline):

<https://kahoot.com>

Collection of other tools (3)

4. Collection of other tools:

Other voting, testing and assessment tools:

<https://socrative.com> or: <https://www.sli.do>

Adding quizzes, voting and tests to your videos:

<https://vizia.co>

Convert any video into your own lesson:


<https://edpuzzle.com>

Testing innovative instruments & tools

Our task for you:

Think about your own good practice examples and cases and your instruments and tools that you use for teacher-centred STEM education.

Please share and upload them into the shared folder
"Week 3 - Good practice examples and cases"



Literature and materials

Literature

- Stracke, C. M., Tan, E., Texeira, A., Pinto, M., Vassiliadis, B., Kameas, A., Sgouropoulou, C., & Vidal, G. (2018). *Design and Quality of Online Courses. The Checklist for Beginners*. Online available at www.mooc-quality.eu/online-courses-checklist-beginners
- Stracke, C. M., Tan, E., Texeira, A., Pinto, M., Vassiliadis, B., Kameas, A., Sgouropoulou, C., & Vidal, G. (2018). *Design and Quality of Online Courses. The Quality Criteria for Experts*. Online available at www.mooc-quality.eu/online-courses-quality-criteria-experts
- Stracke, C. M., van Dijk, G., Fassen, J., Lisdat, F., & Simoens, W. (2020). A Holistic Pedagogical Model for STEM learning and education inside and outside the classroom. In *HCI International 2020 Conference Proceedings. Springer Lecture Notes in Computer Science (LNCS)*. (accepted, in print).

Literature

And some recommendations for further reading:

- De Jong, T., Linn, M. C., & Zacharia, Z. C. (2013). Physical and virtual laboratories in science and engineering education. *Science*, 340(6130), 305-308.
- De Jong, T. (2019). Moving towards engaged learning in STEM domains; there is no simple answer but clearly a road ahead. *Journal of Computer Assisted Learning*, 35, 153-167.
- Video (introductory): What is Inquiry-Based Science Education (by Ton de Jong): <https://support.golabz.eu/go-lab-inquiry-based-science-education>
- Video (advanced): How to include a live stream in an ILS (by Casper de Jong): <https://www.youtube.com/watch?v=sVtfajOaLEo>.

Materials

You can find all materials of week 3
in our shared online folder:

<https://surfdrive.surf.nl/files/index.php/s/rnMYuH1kh8gBiPv>

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