



Catalysts and reaction conditions – teacher notes

Education in Chemistry

Sustainability in chemistry 2021

Goal 9: build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

rsc.li/2V7IC2r

Effective research and presentation are key skills. In this activity learners will develop those skills while learning more about catalysts and reaction conditions in the context of sustainable industry

Research and present

See the student sheet for an outline of the task. A table template is provided to guide their research and help collate information.

The presentation could take multiple forms, depending on what learning outcomes you want for the activity. Example approaches:

- Short verbal presentations will give your students the experience of talking concisely and clearly in front of a group of peers.
- Posters to be presented in a poster exhibition, providing opportunity to defend their work to others in an environment often found at scientific conferences.
- Online presentation using, for example, Microsoft Sway, to make a multimedia presentation that could be shared with younger students or parents.

Remind students to think about their audience. Encourage them to evaluate their presentation using the prompt questions and make any improvements before they deliver it.

Differentiation

This activity is well suited for all students regardless of prior attainment. Some students may require additional support, such as directing towards compounds with simpler chemistry or a more limited set of information to engage with. Alternatively, student could be paired with clear roles assigned within the team to support skills development. For example, less confident public speakers could be given the middle section of a verbal presentation, giving them some time in front of the audience before they have to speak.

To increase the challenge, you could remove the table template for research and ask learners to construct their own. You could also reduce the number of suggestions for products and processes to just give one example.

Peer assessment

Students should be encouraged to peer assess the presentations/posters. A simple set of objectives can help them focus their assessment and ensure constructive feedback is given. For example:

- Is the overall message of the presentation clear? Can you summarise this in a couple of sentences?
- Was the chemistry accurate and accessible?
- Was context used to enhance the chemistry or was it distracting?
- Were sources of information clearly cited?

Self-assessment

Students should also self-evaluate their work and presentation afterwards. For example, answering questions like:

- How efficient was I in my research? Did I stick to the task at hand, or did other work/non-work distract me?
- How well did my planning work when putting together my presentation? Did I have to go through multiple drafts?
- How did I feel during the presentation? Was I confident or apprehensive? Did I do sufficient preparation/practice beforehand? How did I regulate my emotions during the stress of presentation?
- What key target will I set myself to improve my work process next time I have a similar task?