

Cohesive Chemistry

Newsletter #2 - 27/08/23

It was the first week with students back in school for me. It's easy to forget the intensity of a busy school day after a bit of downtime over the [northern hemisphere] summer. Safe to say I haven't made much progress with Reactivity 2.2 but I'm planning to get into it once I remember how to teach next week.

Updates on Cohesive Chemistry resources

- **In progress:** Reactivity 2.2 - How fast? The rate of chemical change.
- **Shared from the CoChem community:**
 - Mike Scamell kindly shared with me [320 MCQs](#) with [answers and explanations](#). *Note:* These cover all topics in the old course but the majority are still applicable to the new course (although students will now be able to use a calculator for the MCQs in paper 1). Still great for practice.
- **A request:** If anyone would like to share any 'homemade' resources (i.e. no copyright infringement) then please send it over and I will share it with the Cohesive Chemistry community. Anything clear, consistent, and concise will be welcome for future newsletters.

Two thoughts on teaching and learning

1. **Mini-whiteboards (MWBs):** MWBs have become central to my practice in the classroom and play a particularly helpful role in checking for student understanding. Three of the significant benefits I see:
 - a. **Engagement:** They increase the [ratio](#) of students thinking to students quietly hoping they won't be asked a question. In contrast to verbal questioning, they allow a greater degree of class-wide participation.
 - b. **Visibility:** Work done on a MWB is much easier to see than on notebooks or laptops and so provides an immediate snapshot of understanding in the class. Students can either hold up their MWBs on a teacher's cue or the teacher can circulate around the classroom.
 - c. **Simplicity:** MWBs cannot be forgotten at home (because they live in the classroom) and do not rely on the internet.

If you don't use them already, I highly recommend getting some and using them with retrieval practice, starter activities, and quick check questions during a lesson.

2. **Measurements as ranges:** In [Teaching Introductory Chemistry](#) (mentioned in last week's newsletter), Scott Milam discusses the crucial difference between a number (a single mathematical value) and a measurement (a range of values due to limitations in the precision of equipment). I think this is a really important idea to emphasise with students. It provides a better conceptual basis for understanding uncertainties in measurements and their treatment when carrying out calculations. It might also be worth mentioning [for new teachers] that as a general rule in IB Chemistry, we can estimate a measurement on analog equipment (with lines on it) to the nearest

half of a gap between graduations. This is why the uncertainty will always be \pm half of the smallest gap between the lines.

Something to check out

If you have an interest in educational research, Peps McCrea (teacher educator, course designer, and author) has a short weekly newsletter called [Evidence Snacks](#). In it, Peps breaks down education-related research into short, digestible bites that can be utilised by classroom teachers. I rarely read research papers first hand so it is great when someone else does the leg work for me.

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