

Planning with the global learning lenses

Here are some examples of how you might use the global learning lenses.

They have been extracted from the Spanish 'Guia General', which is available from the FERECEDA Madrid website at www.ecmadrid.org/es/programas/global-cities-project.

We offer this document in both PDF and Word formats, as you may want to adapt the frameworks for your own planning.

EXAMPLE 1. The magnifying glass

Opening up curriculum content

Content can be worked with two ways: open or closed. Traditionally, we have worked in closed ways, taking themes such as "World War II."



When we open up a topic, we give it possibilities, strength and connections. For example: "The impact of wars on societies: the example of the Second World War."

One easy way to open up content is to turn it into questions, selecting ones that have some potential. That is not the case with "What was World War II?" - but it could be if we asked "What did World War II mean to secondary level students at the time?"

One way of testing the potential of a question or content is to build a mind map with it. If it generates many ideas, many branches, many connections, if it is unlimited ... it is a good option.

There are other important elements:

- 1) whether it is exciting for educators and learners;
- 2) whether we have resources to access the required information;
- 3) whether it is something that can be reasonably understood;
- 4) whether it has any relevance.

Lastly, in terms of practical curriculum organisation, it is always easier if we begin to plan from "evaluation criteria" or "measurable learning outcomes", rather than from the actual curriculum content.

Let's see a curriculum example from Spain. We have selected a part that appears to have closed content ...



Physics and Chemistry. Years 9-10. Block 3: physical changes (Royal Decree 1105/2014 of 26 December, page 260)

Contents	Evaluation criteria	Measurable learning standards
<p>Physical and chemical changes.</p> <p>Chemical reaction.</p> <p>Stoichiometric calculation.</p> <p>Law of conservation of mass.</p> <p><u>Chemistry in society and the environment.</u></p>	<ol style="list-style-type: none">1. Distinguishing between physical and chemical changes through simple experiments that show the formation of new substances.2. Labelling chemical reactions as changes from one substance to another.3. Describing the process through which chemical reactants turn into products according to the collision theory at a molecular level.4. Deducing the law of conservation of mass and recognising reactants products through simple lab and/or computer experiences.5. Checking the speed of chemical reactions being affected by certain factors in simple lab experiences.6. <u>Acknowledging the importance of chemistry for obtaining new substances and its importance in improving people's quality of life.</u>7. <u>Appreciating the importance of the chemical industry in society and its influence in environment.</u>	<ol style="list-style-type: none">1.1. Recognises differences between physical and chemical changes in everyday life situations, depending on whether or not they create new substances.1.2. Describes the procedure for simple experiments where the formation of new substances is shown, and recognises it as chemical changes.2.1. Identifies both the simple reactions of reactants and products, interpreting the schematic representation of a chemical reaction.3.1. Represents and interprets a chemical reaction from atomic and collision theories perspectives.4.1. Identifies reactants and products in a simple chemical reaction representation, and experimentally checks that it follows the rule of the law of conservation of mass.5.1. Proposes the development of a simple experiment that allows the experimental verification of the reactants' concentration in the product formation speed in a chemical reaction, according to collision theory.5.2. <u>Interprets everyday life situations where temperature plays a significant role in reaction speed.</u>6.1. <u>Sorts some commonly used products depending on whether they are natural or synthetic.</u>6.2. <u>Identifies and associates products from the chemical industry with their applications in improving people's quality of life.</u>7.1. <u>Describes the environmental impact of carbon dioxide, sulphur oxides, nitrogen oxides and CFCs and other greenhouse-effect gases, linking it to global and environmental problems.</u>7.2. <u>Proposes measures and attitudes, both at individual and collective levels, for mitigating environmental problems of global importance.</u>7.3. <u>Provides reasoned arguments about the influence that the chemical industry development has had in the development of society, according to various scientific sources.</u>

We have underlined the curriculum sections that may offer possibilities for opening up content. The fact that they offer such possibilities does not mean that we ignore the rest of the curriculum, but that we are also able to look at these sections in a different way. It is best to take one of these and build up a mind map. From there, many more possibilities will arise. When building the map, the different lens tools can help in creating the branches. Let's see an example using the microscope...

EXAMPLE 2. the microscope

An example using the microscope: Giving visibility



Using this lens we can ask questions such as: what connections does it have? What did I visualise?

If we return to the curriculum, we can find some learning objectives that especially help us:

6.2. Identifies and associates products from the chemical industry with their applications in improving people's quality of life /

7.1. Describes the environmental impact of carbon dioxide, sulphur oxides, nitrogen oxides and CFCs and other greenhouse-effect gases, linking it to global and environmental problems /

7.2. Proposes measures and attitudes, both at individual and collective levels, for mitigating environmental problems of global importance.

Connections:

- Everyday chemical reactions: domestic heating [natural gas], plants [carbon dioxide], metal corrosion [iron and oxygen], matches [phosphorous], cars [hydrocarbons], batteries, mobile phone batteries ...
- Extreme cases: an accident with a heater, the Bhopal disaster and hydrocarbon pollution ... what other cases do we know of?
- What would not happen if this chemical reaction did not occur? What chemical reactions help or damage people? Oxygen production by plants, mobile phone batteries [and the problem of coltan], chemical residues drained off into rivers ...

Choosing any one of these topics requires an understanding of how chemical reactions and stoichiometric calculations work, of differences between physical reactions ... but over-all we are interested in identifying which situations, individuals and groups of people have become visible by the end of this topic.

Here are some other possibilities which can help us focus on the analysis of reality.

Fernando de la Riva (2009) proposed an "Alapa" reality analysis, as shown:

- A for Asking
- L for Listening
- A for Analysing
- P for Prioritising
- A for Acting

With the microscope we are mostly dealing with the first three letters, but there are many other letters that could come from them. Among those would be the W for Where, bringing local and global dimensions together. It is critical to locate any kind of material within a context: close enough to be significant and far enough away to be global, so that interdependence becomes apparent. Hence the questions: How does it affect my reality? What about other places? We can find ways into this through brainstorming. In some ways, ideas could reflect the kind of questions that surrounded the Bhopal disaster.

There is an element in this that is metacognitive. In other words, it helps us become aware of how we learn. Especially when we ask ourselves about "A for Analysis" and how we analyse. It is important to bear in mind that there are several ways and manners of analysing — some are of a more technical nature [like looking at quantity or quality] while others invite ideological perspectives or ones related to dominant narratives and worldviews.

Lastly, and related to the question of visibility, we can work on how the topics we develop are linked, especially the more sensitive ones. A possible example of this could be making the connection between hydraulic fracking and a more general theme around hydrocarbon materials. All this can serve eventually to transform our map of ideas into a map of reality.

EXAMPLE 3. The 3D glasses



... extend this work into exploring different approaches for observing different kinds of material. In this case, we are dealing with diversity, which we will usually see as an asset [except for extreme cases such as nihilism and fundamentalism]. We are examining different perspectives that may arise when approaching a topic [political, philosophical, scientific, economic ...]. We can draw on different methodologies to help us generate a variety of perspectives and, when possible, complement them: discursive and dialogic techniques, active listening ...

Among these, networking particularly stands out, both inside and outside the classrooms, and both at local and global levels.

An example of looking through 3D glasses: Networking

Here, we are continuing to look at chemical reactions, now working on dense, specific matter, such as that in rubbish dumps. The idea came about following a conversation in the morning when a colleague had commented that their neighbourhood had woken up with a great stench spreading over the area, due to being close to a huge rubbish dump.

- Part of the work will consist of studying which chemical reactions produce that stench. There is sulphur, and we can identify other chemicals. In this instance, we are dealing with organic decomposition [it can help to talk about chemical reactions with microorganisms, cheese manufacturing and other fermentation processes].
- We can look at different viewpoints on the matter of the smell from the dump. What do the City Hall, neighbourhood associations, local scientists say? We can conduct a poll ... Can we visit the dump — and the neighbourhood?
- We can debate on the 'price' of such dumps to health, how people conceptualise the issue differently. Is it cultural? Are our rights being undermined? What are our duties?
- Taking soundings from these networks, we can identify "a community of the dump-affected." How do they organise and communicate? What do they feel like?

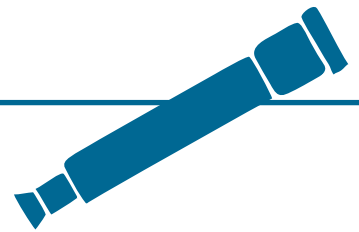
We can start to plan with this ...

Example 4. The telescope

Our bottom line when looking at issues about diversity and different perspectives on a day to day basis is human rights. It is important, though, to bear two things in mind:

- First, translation. Although most countries of the world have signed the UN Universal Declaration, they need cultural translation in some places. It is not difficult to acknowledge that the statements are rooted in Western ideas about the world and that they may therefore sometimes need culturally appropriate revision.
- Secondly, expansion. Since the 1948 Declaration, more rights have been proposed, as well as the full implementation of those that already exist. For this second point to be achieved, we especially need the telescope.

An example of seeing through the telescope: changing social structures.



With the telescope we aim to avoid the idea of being mere onlookers to what we learn. We are actors in any situation, even when we are talking about the past. In the way that we deal with it, we are already making change happen.

- We could go on to look at the chemical reactions related to dyes [or leather manufacturing]. At one time, the use of certain colours determined one's social class. The cost of manufacturing materials determined which colour one wore. We can look further at the matter of clothes production with the Clean Clothes Campaign: www.cleanclothes.org
- We can also look at how to avoid events like those at Bhopal. A group of students can get in touch with the local movement at www.bhopal.net and find out how they can help. The Bhopal chemical reactions were complicated, but that can help us in looking more deeply into the issues.
- Students could contact the online platform on waste dumping at www.paudevallecas.org and see how they organise, and [for those who want to] how to participate.
- Lastly, we can take part in more general projects on the environment or responsible consumerism. One project that may serve as inspiration is El paseo de Jane [Jane's walk]: <http://elpaseodejane.wordpress.com>. This project follows the journalist Jane Jacobs' initiatives.

With these exercises we can keep building up the scaffolding for our educational practice. As for the students, we should let them see the structures we are working with. They need to be aware of these ways of working until they can carry them out unconsciously, until it would be unthinkable for them to look at a question without bearing these dimensions in mind.

[See also our download: A Note on Scaffolding].