

# ONLINE TOOLS FOR CREATION

## This module aims to:

- Demonstrate why it is important to communicate information in a visually appealing way
- Introduce selected online tools and approaches that enable and facilitate visualisation of information
- Get you excited about working with them
- Provide practical tips for visual processing of information

## What digital skills does the module support for teachers?

- Continuous professional development
- Creating and editing digital resources
- Introducing digital tools and resources into the classroom
- Developing and experimenting with new teaching formats and didactic methods

What areas of the digital competence of the students can I support with the knowledge I have gained in this module?

- Using digital technology to facilitate work, automating routine activities, streamlining or simplifying their workflows and improving the quality of their work outcomes
- Understanding the importance of digital technologies for human society, becoming familiar with new technologies, critically evaluating their benefits and reflecting on the risks of their use

## Introduction

Our culture is increasingly image-oriented - whether it is the development of television broadcasting or the Internet, both media work intensively with the image as a fundamental means of communication. One is thus faced with the issue of how to understand and make sense of this data. Of the five senses, the human sense of sight is the one that supplies our brain with the greatest amount of information. The human eye supplies the brain with about 80% of the stimuli. From cave paintings to contemporary postmodernism, visual expression is something that on the one hand creates an aesthetic quality, but at the same time serves as a means of communication.

Visual communication of information can take very sophisticated and diverse forms, which is why this study text is also quite complex. It presents visualisation of information from mind maps, diagrams and flowcharts, to infographics and timelines. It thus presents approaches that are very close to the generation of pupils you will encounter in your school practice - pupils who prefer and seek out (audio) visual information and who may well have a very good know-how in creating it through the use of various mobile apps.

# Mind maps: information included in a creative diagram

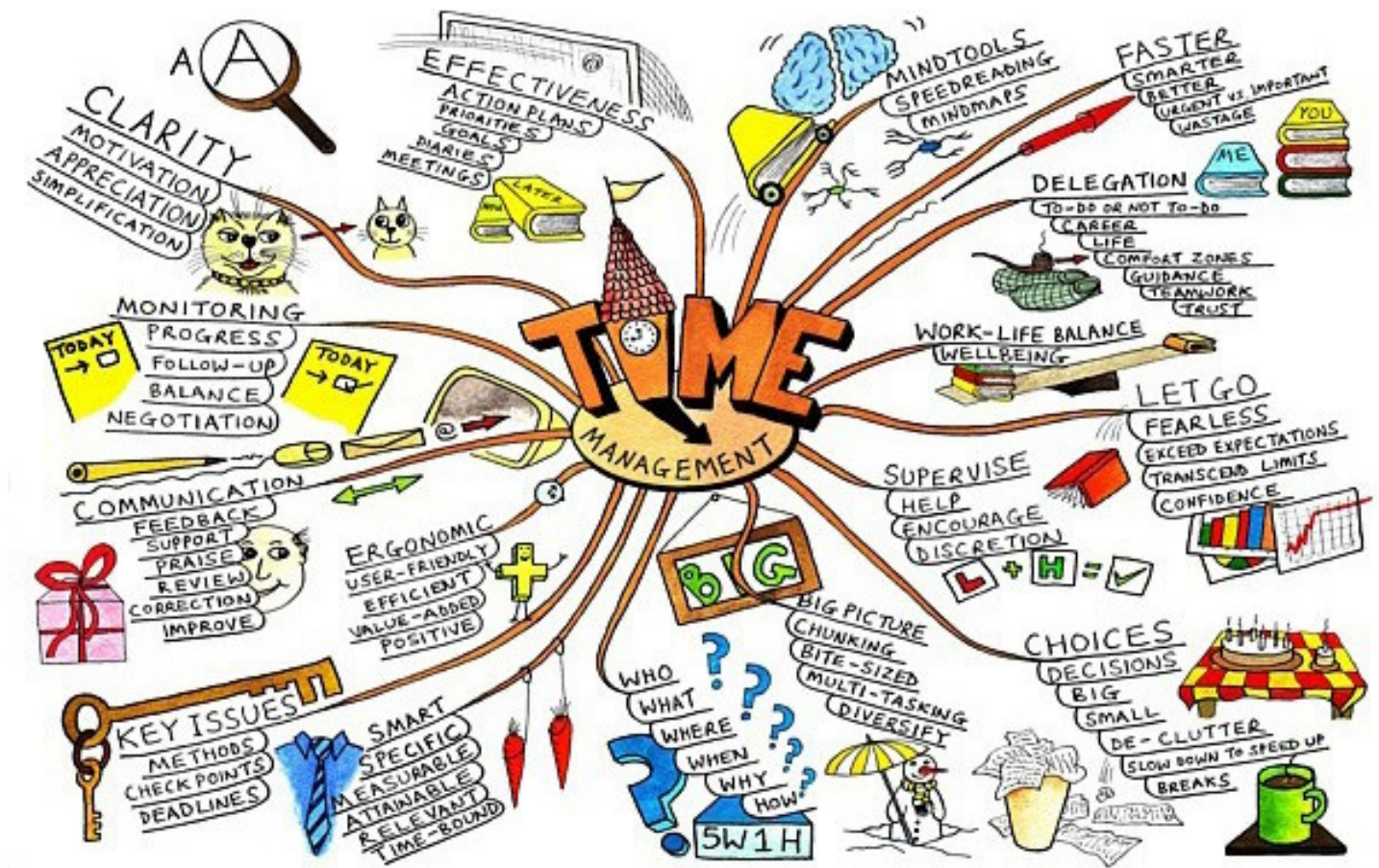
Mind maps are tools that can help you organise your thinking. Many people have found maps helpful for organising, learning, creative and critical thinking, planning etc. Maps allow you to have an overall view of a topic and concentrate a large amount of data in one place. If you start using maps regularly with your students (and in your own studies), you will find that you work and think better.

Mind maps are tools for recording data (thoughts, ideas, facts, etc.). However, unlike traditional linear notes, entries are made around a central concept/image. As a tool, they represent an irreplaceable phenomenon in the school environment and have become a common part of learning (mainly in project-based and group instruction).

Traditional note-taking and list-making are surefire creativity killers, detrimental to new ideas, preventing the free flow of ideas. A list separates one idea from another. Moreover, it forces us to stay with the last note, but no new ideas come from it. Maps, on the other hand, are ray-like, growing sideways and in line with the flow of our thoughts. Interestingly, maps are also often considered effective because of their shape and form - they contain lines, colours, words and images that imitate synapses.

To create mind maps, we follow the method of their creator, Tony Buzan, who describes mind mapping in seven key steps:

1. Always start the map in the middle of a blank sheet of paper. Don't limit your ideas in advance by placing the central idea in a corner. Placing it in the middle allows a free field of thought. In the case of online maps, the tool will solve this problem for you.
2. Express the central idea with an image. A picture will help you use your imagination. If you don't think you can draw, create a symbol or express yourself in writing, but make it count.



© <http://www.mindtools.com/>

Typical processing of the mind map by Tony Buzan

3. Use colour, use it to stimulate your brain. Without colour, a map is boring and often less clear. Coloured pencils work best.

4. Attach the main branches to the central image first, then the second level branches, and so on. This will help your brain work with associations. If you were to write all the information from the beginning, first in one branch and then in the next, you would cut off all the other branches from the stream of thought, and the associations could not flow freely.

5. Draw the branches as curves, don't bore your brain! Straight lines look austere, unfriendly and the brain gets bored. Even turning the paper over to write a different concept helps memorisation. (When you rotate or manipulate objects, you stimulate different receptors and the brain creates different mental representations).

6. To increase the efficiency and flexibility of your mind maps, use only one keyword or simple phrase for each line. It is much easier to add additional associations or information to a single word/concept. Even worse, long text in branches looks cluttered and hinders thinking.

7. Use images and symbols throughout the map, it's fun. Without images, the map remains functional, but loses some of its inspiration.

### TIP for you:

There are dozens of online tools for creating mind maps. For example:

MindMeister <https://www.mindmeister.com/>

Coggle <https://coggle.it/>

Ayoa <https://www.ayoa.com/>

MindNode <https://www.mindnode.com/> (mobile app for Apple users)

MIRO <https://miro.com/>

## Creating diagrams and flowcharts

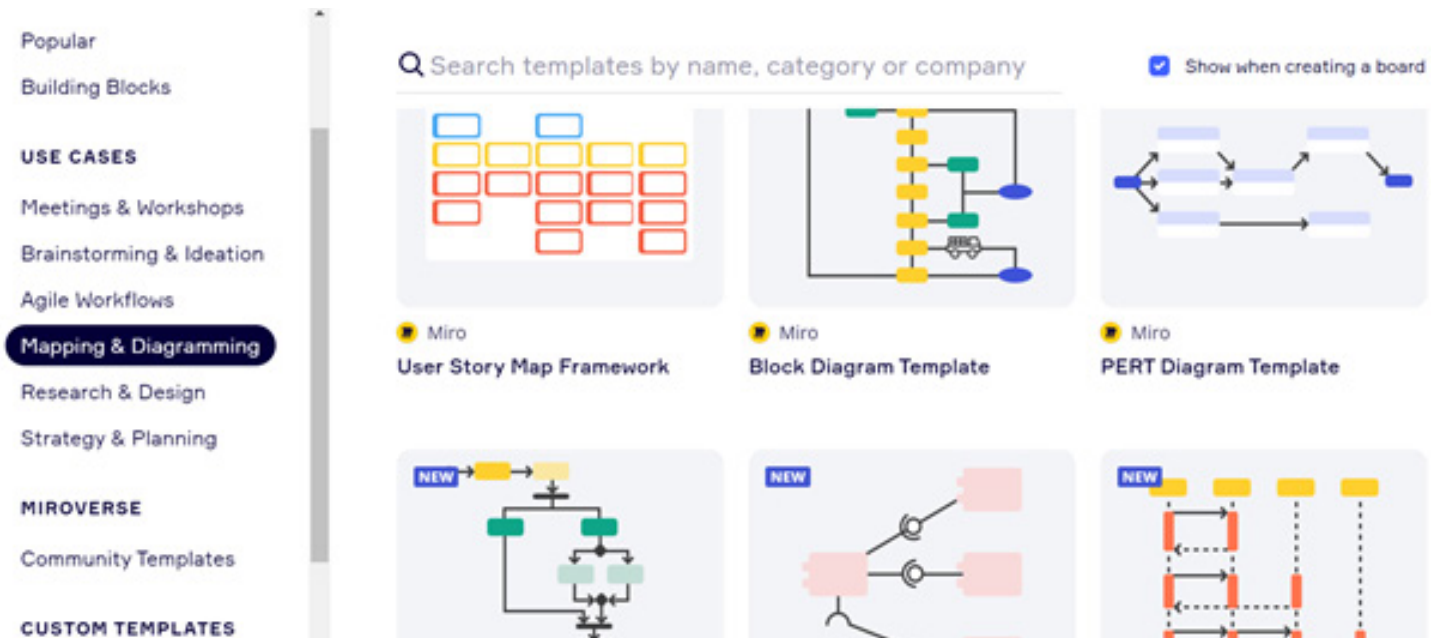
The creation of diagrams or flowcharts is loosely related to the subsection on mind maps, but the information in them is arranged in a more linear way than in mind maps. Creating diagrams is undoubtedly an activity that is quite common and important, but at the same time we might fear it and find it difficult and challenging. This is one of the reasons why we tend to avoid diagramming, referring to the difficulty of the process. Again, sophisticated online tools that can be used both for visualising learning and for student work (whether individual or in teams) can help.

It's good to keep typographic and aesthetic principles in mind:

1. If you are making a formal or technical diagram, it is a good idea to use as many lines as possible with right angles.
2. Align the elements in a grid.
3. Try to make lines and connections cross as little as possible.
4. Use a reasonably small number of fonts and cuts.
5. Remember that there is also the option of reading the document in black and white.
6. Consider whether it is sometimes better to use fewer simple charts rather than one complex chart. Or use a combination of the two.
7. Use colour, icons and node shapes, but in moderation.

### TIP for you:

Do you remember MIRO, which we introduced in Module 06 Online collaboration and communication tools? Well done! MIRO is also a tool for designing all kinds of diagrams and flowcharts. You can use dozens of ready-made templates.



*Other diagram options in MIRO*

## TIP no.2:

There are plenty of diagramming and flowcharting tools on the web. It's up to you to decide which ones you and your students are most comfortable with. In the past, it was common to create simple diagrams directly in PowerPoint along with the presentation the teacher was preparing for the students. Here are some good reasons not to do this:

- PowerPoint is not primarily designed for creating diagrams - they are tedious to work with, diagrams often don't work the way you need them to, moving elements around is complicated and lengthy.
- If you manage to create a decent diagram or flowchart, it will remain 'trapped' in the presentation and any further work with it will be difficult.
- You'll never achieve the quality and range of possibilities that you can achieve by using specialist software or an online tool that allows you to easily insert the diagram into your presentation at any time. In addition, depending on the tool you choose, your students or colleagues will be able to work on it together.

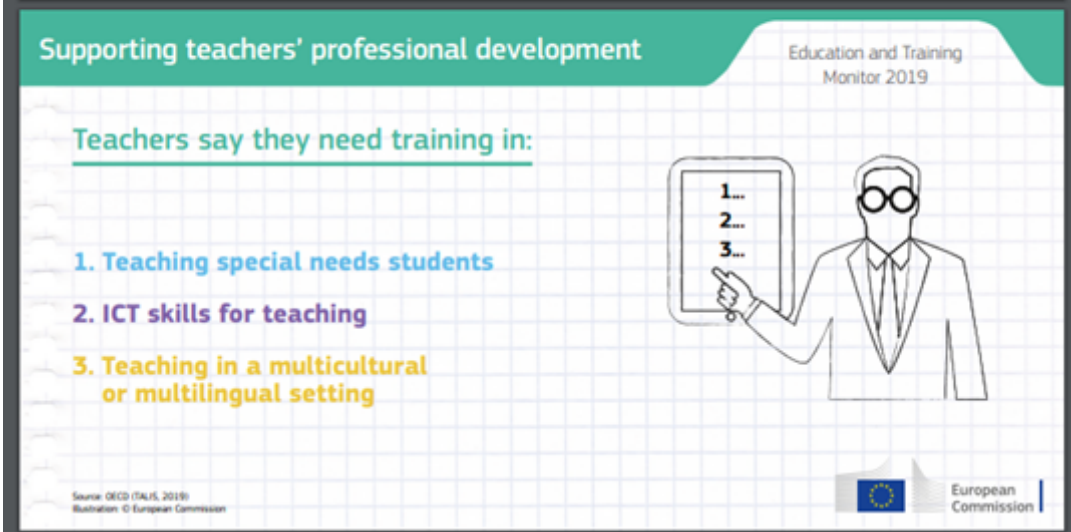
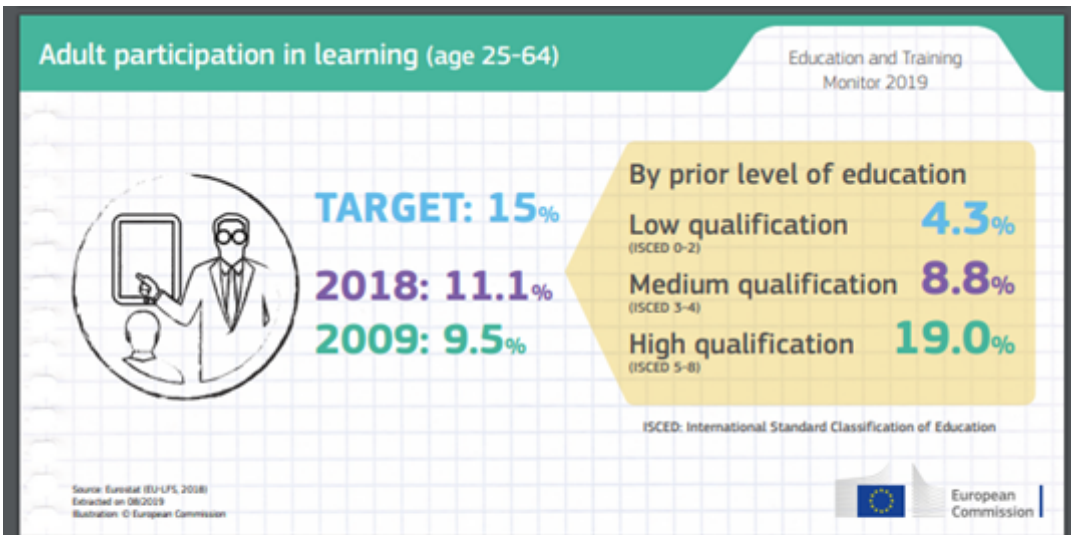
## TIP no. 3:

Another tool you can try is the online tool Gliffy <https://www.gliffy.com/>. You don't need to install it, it's free and allows you to create dozens of different schemes.

## When you need to communicate complex issues clearly ...

Do you have a lot of different information and data and want to present it to your students in a clear and comprehensive way? One way to do this is to present this information using infographics - a phenomenon that has grown in popularity over the last decade, not only in the media but also in education. The aim is to summarise a complex subject in a graphically interesting way, using beautifully designed graphs of various shapes and forms to present everything important in one image (you probably automatically think of infographics showing various data on the COVID-19 pandemic, but this is of course only a drop in the ocean of possibilities).

For example, you can explore how education data across Europe is visualised by **Eurostat** - the statistical office of the European Union  
<https://ec.europa.eu/eurostat/web/education-and-training/visualisations>



Infographics 2019, source Eurostat [https://education.ec.europa.eu/sites/default/files/document-library-docs/education-and-training-monitor-2019-eu-infographics\\_en.pdf](https://education.ec.europa.eu/sites/default/files/document-library-docs/education-and-training-monitor-2019-eu-infographics_en.pdf)

## TIP:

The most well-known online tools that make it easy to create infographics include:

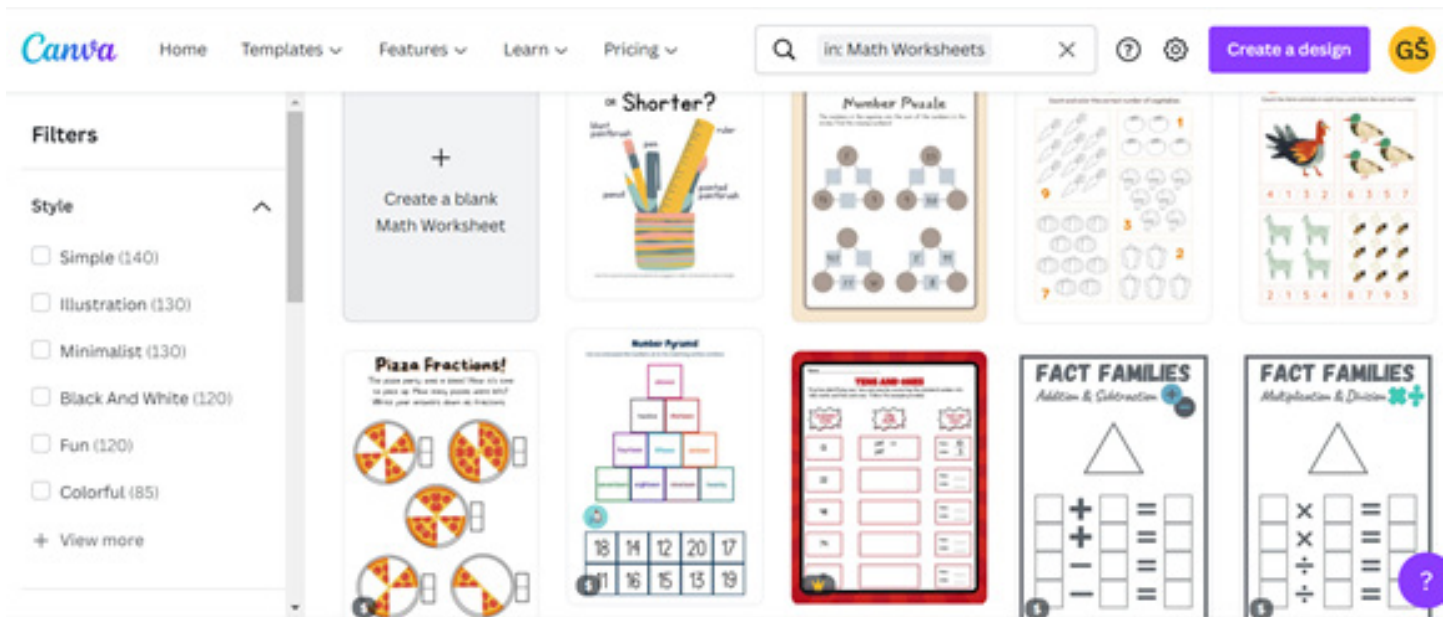
Piktochart <https://piktochart.com/>

Canva [https://www.canva.com/cs\\_cz/](https://www.canva.com/cs_cz/) It is a very popular and intuitive tool that allows you to create successful graphic outputs (infographics, posters, invitations, videos...) even for those who do not have a refined aesthetic sense. Canva also allows you to create various worksheets, Its templates are free to use. It is free for schools and non-profit organizations.

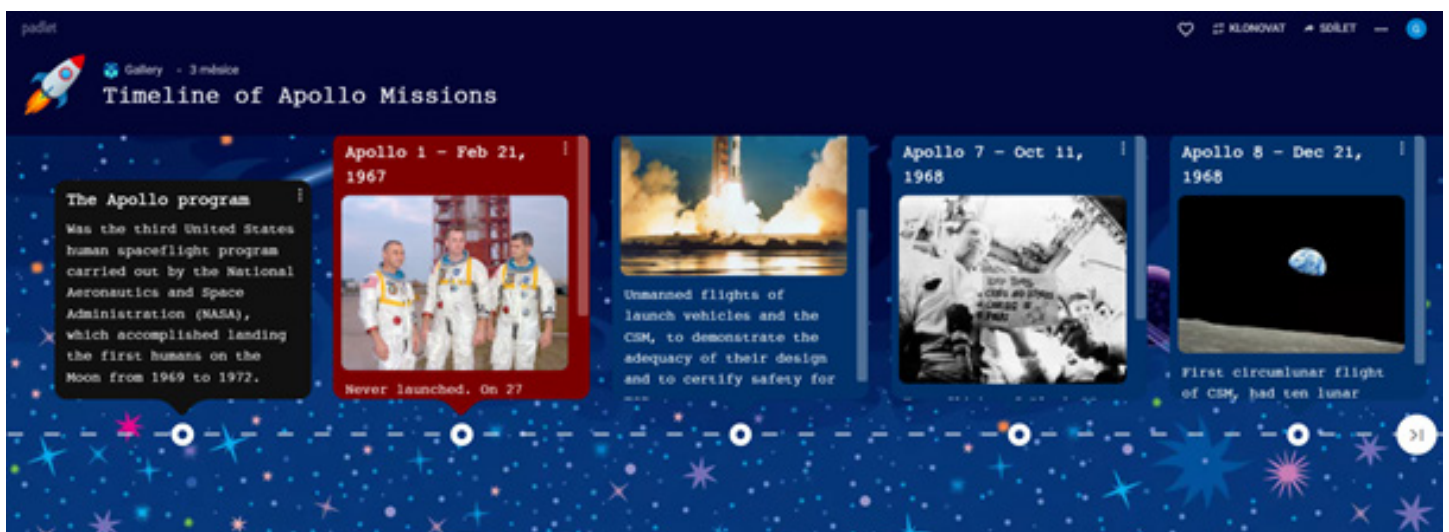
Timelines are a useful subcategory of infographics. Tools for working with timelines make it relatively easy to insert videos, images or full texts onto them. The timeline then becomes not only a place where a certain development or sequence of events can be clearly captured, but it is also possible to make a kind of signpost out of it. This can then be used to give students access to more detailed information in a form that they find interesting and engaging.

## TIP:

There are tools designed specifically for creating timelines, but Padlet, mentioned in Module 06 Online Collaboration and Communication Tools, can serve as a great tool for us.



*Math worksheets in Canva*



*Timeline representing the Apollo missions in Padlet*