

01 Charts & Maps



EDUCATIONAL PURPOSE

Charts and maps can be used to present abstract ideas or show their relationships in a visual form.

TOOLS/ CHARTS & MAPS

A chart is a graphical representation where data is represented by symbols such as bars, lines or slices.

A map is a graphical representation of tri-dimensional space where physical, social, medical or other features can also be indicated, e.g. brain map, DNA map, cosmic map etc.). It can be static (road map) or animated (weather forecast).

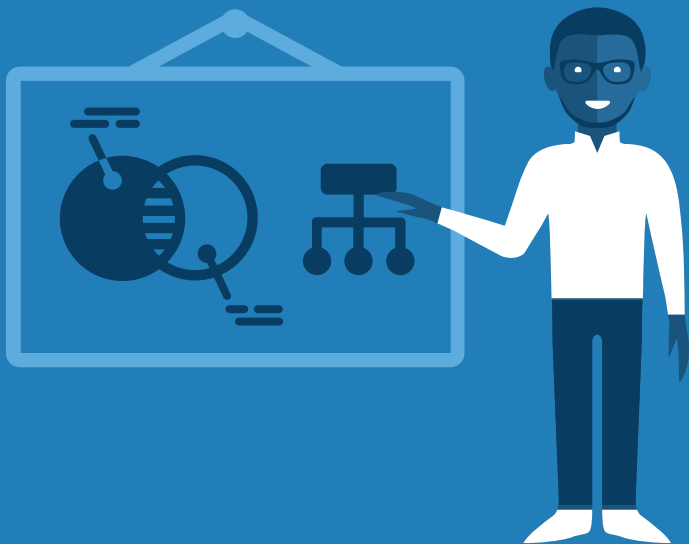
STEPS & RESOURCES

- 01** | Choose the kind of charts and maps you need, according to the data you want to illustrate.
- 02** | Draw your charts and maps before the lesson, either by hand (with flipchart, manila paper or rice-sacks, colour markers and a ruler) or by computer using free office software or maps available on the internet.
- 03** | Display the charts and maps in class in a visible way (stick it to the board, or use a projector).

TIPS

- Make simultaneous reference to the chart or map to enhance understanding of the concepts introduced.
- Engage the learners in researching or drawing maps and charts helps them to memorise the lesson.
- Charts and maps should be designed in a clear and attractive way (colours, labelling, etc.)
- Charts and maps can be used at the different stages of a lesson to facilitate discussion and consolidate knowledge.

02 Diagrams



EDUCATIONAL PURPOSE

A diagram is a visual representation of information used to show how conceptual objects are interrelated. Diagrams are particularly useful to study complex material.

TOOLS / DIAGRAMS

Diagrams are useful to transform text-based data and information in a visual representation. Learners' attention is also more likely to be attracted by a diagram rather than by a long text. Finally, diagrams help learners with a visual rather than verbal memory to better retain the displayed information.

STEPS & RESOURCES

- 01** | Define the kind of diagram you need, according to the topic you want to describe.
- 02** | Before the lesson, draw your diagram using one of the following methods:
 - By hand: with paper, ruler, markers etc.
 - By computer: using free diagram software available online, such as: www.draw.io
- 03** | Display the diagram in class in a visible way (stick it to the board, or use a projector).

EXAMPLES

- Diagrams can be used to explain specific processes/relations such as a system' topology, a sequence, a hierarchy, an association, or a cause-effect. It is therefore important to identify what topic you want to illustrate before choosing the type of diagram to be drawn to facilitate discussion and consolidate knowledge.

TIPS

- Ask the learners to make diagrams in class or as an assignment: they will have fun while checking and summarizing their knowledge.
- Use different shapes and colours to depict objects, processes and relations and remember to include a legend.

03 Flashcards



EDUCATIONAL PURPOSE

Flashcards are a set of cards bearing short and clear information (word, symbol or number) either on one side or on both sides.

TOOLS / FLASHCARDS

In the classroom, an immediate teacher overview of the learners' understanding of the topic at hand can be obtained by asking learners to display their answer to a specific question on a flashcard. Coloured cards can also be used for learners' self-assessment of their level of understanding (e.g. green card for "understood", yellow card for "need support", red card for "not understood").

STEPS & RESOURCES

- 01** | Prepare the flashcards according to your need (blank, coloured or pre-filled cards).
- 02** | Explain the rules of the drill to the learners.
- 03** | With the learners, observe and discuss the answers of the class.
- 04** | Use the results to guide the current and/or future lessons.

TIPS

- Reduce your workload: ask the learners to prepare the cards.
- Remember to collect the blank or pre-filled cards for further use.
- There are also other uses for flashcards: in private study, flashcards are useful to summarize, memorize and classify knowledge for further revisions; pre-filled flashcards can also be used to design interactive educational games for any subject.

EXAMPLES

- Use flashcards for question & answer drills, interactive education games, or to assess learners' progress.

04 Quiz



EDUCATIONAL PURPOSE

Quizzes are a form of a mind game in which learners (as individuals or in teams) try to answer questions. They are usually scored and sometimes designed to determine a winner.

TOOLS / QUIZ

In an educational context, a quiz is a playful way of assessing learners' knowledge. It provides teachers and learners with immediate feedback.

STEPS & RESOURCES

- 01** | Design the quiz (PowerPoint, blackboard, flipchart, flashcards etc.).
- 02** | Determine the resources you need: computer, projector, manila paper, markers, audio-player, etc.
- 03** | Carefully design questions relevant to your lesson plan and set clear ground rules for the learners.
- 04** | Think about the scoring system and time management.
- 05** | If learners are participating in teams, think about the composition of those teams.
- 06** | Decide whether you want to award the winners with a prize.

EXAMPLES

- Quizzes can be used to introduce a new topic. This gives the teacher an instant idea of what learners already know about the topic.
- Quizzes can be used to revise learners' retention of previous lessons.
- Quizzes can be used at the end of a lesson. This allows the teacher to get feedback on learners' progression.

TIPS

- Quizzes are useful tools to implement drilling techniques.
- Quizzes can be organized as a form of group work.
- Quizzes should be short and lively.

05 Images



EDUCATIONAL PURPOSE

An image can be used to introduce, express, share, and describe a range of subjects (concepts, stories, trips, phenomena, persons, objects or events). Teachers can use images to present a problem through visual stories that learners will be encouraged to solve.

TOOLS / IMAGES

The use of images in teaching and learning has benefits to support learner's comprehension, retention, and application. It stimulates spatial intelligence and increases student motivation.

STEPS & RESOURCES

- 01** | Select the concept, story, phenomenon, person or event you want to depict.
- 02** | Find or draw the picture(s) you need.
- 03** | Brainstorm with the learners which words or concepts come to mind.
- 04** | Guide the learners discussion by questioning their interpretations.

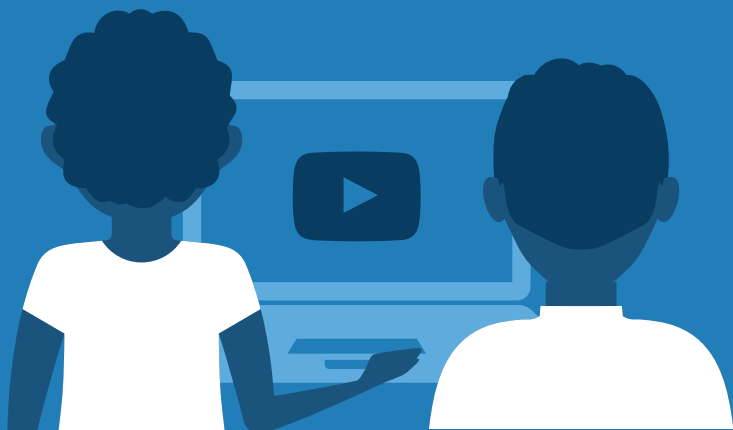
TIPS

- Many images, photos and editing software are available online.
- A digital photo story can combine different media: images, text, voice, motions and music.
- Think of images that would present the subject in just one or a few images

EXAMPLES

- Use a picture of a tropical storm/melting ice caps to introduce the concept of global warming.
- Use pictures of different class arrangements to discuss teaching and learning methodologies.
- Ask learners to present images to strengthen their presentation or communication skills.

06 Videos



EDUCATIONAL PURPOSE

Videos are used to record, playback, broadcast and display moving visual images. Educational videos have been widely used in classrooms, as they can provoke reflection and discussion and provide deeper insight of issues that have been introduced.

TOOLS / VIDEOS

Videos are particularly useful to explain a process or an action. As videos can be paused and rewinded at any time, teachers and learners can control the speed (e.g. slow motion) or repeat particular fragments as needed. With their smartphone or with a cheap video recorder, videos can be produced by teachers and learners to document an experiment, a role-play, a class trip etc. As learners are involved in acting or making the video, their motivation to participate, assess, and receive feedback increases.

STEPS & RESOURCES

- 01** | Select the process or action you want to show.
- 02** | Search a relevant video online.
- 03** | Show the video to the learners. Pause the video on the parts you want to emphasise.
- 04** | Allow for class discussion.

EXAMPLES

- Show a video of the Olympic High Jump champion. Then film learners performing the high jump and pause the video to show where they need to improve.
- Show a video of pottery making.
- Select one or several videos to inspire and illustrate a specific topic (e.g. what is project based learning).

TIPS

- Film the learners while performing a task or an action. Show them the video and give feedback.
- There is a wealth of educational videos on YouTube (TeacherTube) and other specialised websites (TED, Teaching Channel, BIE, etc.)
- Download videos, so you can use them when the Internet is down.

07 Internet & Social Media



EDUCATIONAL PURPOSE

Internet provides digital resources, enabling learner-centred activities and teachers' professional development.

TOOLS / INTERNET & SOCIAL MEDIA

Numerous applications are available to facilitate individual research and distance learning, engage in peer-to-peer or teacher-learner collaborative activities (brainstorming, shared writing, presentation, demonstration, simulation) and for assessment purposes.

STEPS & RESOURCES

- 01** | Choose an online application relevant to your lesson.
- 02** | List the necessary resources: computers, smartphones or a projector.
- 03** | Explain the added value of the application and provide step-by-step instructions.
- 04** | Explain access rights, copyrights, and on do's and don'ts of social media ('netiquette').
- 05** | Instruct learners to upload contents and facilitate peer-to-peer feedback.

EXAMPLES

- Browsers (Firefox, Google Chrome) allow access to an infinite number of articles, encyclopaedias, textbooks, maps, images available on the Internet. Google Scholar is a good search engine to find quality academic articles.
- Document sharing applications allow to edit and share text documents with other people in real time. Users can engage in shared writing tasks to write essays, reports, researches, etc.

TIPS

- Choose free and user-friendly applications (most have useful online tutorials).
- Ask learners with good IT skills to help others solve technical problems.
- Use offline software (Word, Publisher, Excel) when the internet is down.

08 Low cost Experiments



EDUCATIONAL PURPOSE

The main objective of low-cost experiments is to enable teachers to introduce practical activities for the learners to improve their critical thinking and problem solving skills. Practical activities allow linking theory with daily life.

TOOLS / LOW COST EXPERIMENTS

Low cost experiments gives learners the opportunity to learn about team work, accuracy and creativity. Practical activities offer a motivating and engaging encounter with scientific, artistic or social sciences.

STEPS & RESOURCES

Many experiments can be conducted with the help of simple and inexpensive every day resources such as plastic bottles, disposal syringes, tin cans, plastic cups, leaves, light bulbs, wire, etc.

- 01** | Decide which kind of experiment you want to set up (lesson plan).
- 02** | Look for low-cost materials.
- 03** | Try out the experiment in advance.
- 04** | Set up the experiment in class.
- 05** | Clearly explain all the different steps and leave time for learners to design and/or execute the experiment themselves.

EXAMPLES

- Use household ingredients (vinegar, baking soda, glasses, candle, matches, and spoon) to show that CO_2 is heavier than air.
- Use carton boxes, wooden sticks, pans, seeds, rice, etc. to create music instruments.
- With a heater, evaporate a soft drink and weigh the sugar remaining to teach nutritional values and evaporation.

TIPS

- A low-cost experiment is a form of simulation.
- Successful low-cost experiments spark learners' creativity and give them a sense of achievement.

09 Roleplay



EDUCATIONAL PURPOSE

Roleplaying is a simulation tool allowing learners to impersonate the behaviour of specific roles such as a supervisor or a client who must make a decision in a real life context. To try to respond as their given character would, learners conduct research, and engage in higher order thinking.

TOOLS / ROLEPLAY

By interacting with their peers, learners experiment and learn to deal with unfamiliar real life situations while also exercising their observation and communication skills.

STEPS & RESOURCES

- 01** | Prepare a scenario relevant to the lesson.
- 02** | Distribute clear instructions (handouts) for the roles that learners will play.
- 03** | Give learners time to prepare and rehearse their roles (in small groups or in think-pair-share format).
- 04** | After each performance, allow time for class discussion and to summarise the learning points.

EXAMPLES

- Learners can act as delegates from different countries meeting together to decide upon important world issues (useful to explore environmental, political, cultural, social and other global issues).
- Learners can impersonate scientific specialists, assigned to a group either supporting or opposing the cloning of dinosaurs. After conducting research, each group presents and defends its arguments.

TIPS

- Encourage and give time to learners to research their character's features.
- Set ground rules in order to ensure a conducive environment for all to feel safe while acting.

10 Student Portfolio



EDUCATIONAL PURPOSE

A student portfolio is a systematic collection of student work and related material that depicts student's activities, accomplishments and achievements in one or more subjects. Portfolios allow for competence-based assessment by measuring the learner's growth and development.

TOOLS / STUDENT PORTFOLIO

Learners develop a sense of ownership about their portfolios and understand where they made progress and where improvement is needed.

STEPS & RESOURCES

- 01** | Decide together on the portfolio content, such as samples of student work, reflections, teacher observations and conference records, and agree on timelines.
- 02** | Develop assessment criteria and procedures to keep track of the learners' progress.
- 03** | Plan for formal learner-teacher conferences as well as informal meetings in which progress is reviewed and discussed, and reflection encouraged.

TIPS

- Portfolios can contain learners' work (assignments, assessments, evaluations, score sheets, sample products, attendance sheets), reflections, evidence of research, teacher observations, conference records, progress reports, worksheets, artefacts (poems, letters, reading logs, audio/video recordings, photos, sketches), etc.
- Portfolios must be well organised with for instance a cover page, labelled spine and separators, table of contents, foreword and acknowledgement, first and second drafts, appendices, etc.

EXAMPLES

- Art portfolio: one painting, one recorded piece of music, pictures of an artefact, a design process, etc.
- Agriculture portfolio: learner's report of work with different animals on the college farm, photos of vegetable plots, feedback from the farm manager, etc.

11 Progress Assessment Portraits



EDUCATIONAL PURPOSE

Student portraits are developed to self-assess, or co-assess with teachers or peers, the progress of the learners' competences in a specific area (i.e. from the beginning to the end of a programme, course, or professional development trajectory).

TOOLS / PROGRESS ASSESSMENT PORTRAITS

By portraying their personal learning styles, values, interests, attitudes, skills, strengths and weaknesses in a creative and graphic way, learners reflect upon their learning while teachers assess progress and consider ways to better meet their students' needs.

STEPS & RESOURCES

- 01** | Choose the topic you want to assess.
- 02** | Choose 3-4 personal features (learning styles, values, interests, attitudes, skills, strengths and weaknesses) that you want your learners to reflect upon in relation to that topic.
- 03** | Instruct the learners to represent the 3-4 selected features, by drawing or pasting pictures, symbols, or graphics on 3-4 sets of flashcards.
- 04** | Once their assignment is completed, ask the learners to present the top three cards of each set.
- 05** | Facilitate the group discussion.

EXAMPLES

- **To assess learners' relation to learning:** ask students to depict what kind of learners they are (fast/slow), how do they learn best, what is their attitude towards research, and which skills they use to communicate knowledge.
- **To assess learners' development in relation to a specific topic:** ask learners to depict the main interesting things about the topic, which useful skills they learnt, and what else they need to master the topic.

TIPS

- Create a conducive environment encouraging self-expression.
- Mind maps and graphic organizers can also be used instead of flashcards.

12 Assessment Rubrics



EDUCATIONAL PURPOSE

A rubric is an assessment tool used to clearly state what is expected from the learner. It contains a coherent set of criteria (dimensions on which performance is rated), matched with descriptors (tasks or skills being measured) and levels of performance expected (rating scale).

TOOLS / ASSESSMENT RUBRICS

Rubrics can be used for pre-assessment to clarify expectations and grading methods, for assessment to help evaluators focused and objectively assess the learners on the pre-defined expectations and for post-assessment to give learners a clear explanation of their results. Learners acquire evaluation skills and teachers' workload is reduced. Assessment becomes more objective, consistent, defensible and efficient. Rubrics support learners' self-reflection and self-assessment as well as communication between teacher and learners.

STEPS & RESOURCES

- 01** | Define the assessment criteria and levels of quality, preferably with the learners.
- 02** | Give time to learners to practice and understand the use of the rubric.
- 03** | Once learners are familiar with the tool, use it for self, peer or teacher assessment.
- 04** | Based on the results of self, peer or teacher assessment, teacher gives feedback and guides the learners to improve their work.

EXAMPLES

- Rubrics are more suitable for formative assessment of competences development rather than for summative tests and examinations.
- Rubrics are useful in any subject and for any method.

TIPS

- Use few criteria to keep the rubric user-friendly.
- Even number of levels distinguish between learners who "got it" or "did not get it".
- Odd number of levels allow recognising an average performance.
- Rubrics developed in cooperation with learners, increase their acceptance of assessment.