COGNITIVE SKILLS ACROSS THE CURRICULUM

Cognitive skills or thinking skills are the processes our brains use when we think and learn. Learners progress from **information processing or concrete thinking skills** such as identifying and organising information (*what, when, where, which, who*) to **abstract thinking**, such as reasoning and **hypothesising** (*why* and *what if* questions), or for **creative thinking** and **synthesis** (f.e. when we use knowledge to imagine, to solve problems and to think of new ideas), for **enquiry skills** (when we plan to do research), for **evaluation skills** (when we use criteria to comment how good our work is).

Cognitive skills	Classroom activities	Example activity
Remembering (thinking about things you know)	Recall, recite, recognise, relate, spell, tell	Take turns to recite a verse from the poem about autumn
Identifying (showing a relationship between things)	Identify, list, locate, match	Name 3 different types of musical instruments you can see in the picture.
Ordering (putting things in particular places)	Order, organise, sequence	Write the dates on the time line in the order of when they happened
Rank ordering (putting in order of size, importance, success)	Order, put, place	Put the statements in order of importance to describe what makes an ideal farmer
Defining (saying what something or someone is	Define, explain, translate	What kind of colours did you use to paint the landscape?
Comparing and contrasting (finding similarities and differences)	Compare, contrast, distinguish	Find 3 similarities and 3 differences between your capital city and one in another continent.
Classifying (putting things into groups according to their features)	Classify, categorise, put into	Classify the rocks into different groups
Predicting (saying what you think will happen)	Predict, think about	Predict what will happen whwn more water is added to the solution
Creative thinking /synthesis (producing imaginative ideas or thoughts from previous knowledge)	Imagine, create, compose, invent, make up, plan, produce	Invent a new symbol for saving water
Evaluating (saying if something is good, useful, effective or not)	Assess, comment on, judge	Read ypur partner's report and comment on how clearly was written

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Cognitive skills can be divided into *lower order thinking skills* (**LOTS**) and *higher order thinking skills* (**HOTS**):

LOTS	HOTS
Remembering (remember information)	**Reasoning** (to develop reasoning skills*; Why is this an abstract painting?*)
Ordering (to order information)	**Discussing** (to develop enquiry and discussion)
Defining (to define objects; *What is a race?)*	**Creative thinking** (*How would you paint these shapes to show action?*)
Checking (to check understanding)	**Evaluating** (to evaluate the work of oneself and others*; How has your work improved this term?*)
Reviewing (to review learning)	**Hypotesising** (to hypothesise about what could happen)

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Examples of exercises on which it is possible to practice a cognitive activity

JIGSAW READING

Jigsaw reading is a useful cooperative learning strategy that engages students and increases their partecipation and contribution to the learning process. It helps to develop a depth of knowledge not possible if the students were to try and learn all of the material on their own. Each students of a "home" group specialise in one aspect of a learning unit. Students meet with members from other groups who are assigned the same aspect and after mastering the material, return to the "home" group and teach the material to the group members. Each student's part is essential for the completion and full understanding of the final product.

How to use Jigsaw?

1. Introduce the strategy and the topic to be studied
2. Assign each student to a "home group" of 3-5 students who reflect a range of reading abilities
3. Determine a set of reading selections and assigne one selection to each student
4. Create "expert groups" that consists of students across "home groups" who will read the same selection
5. Give all students a framework for managing their time on the various parts of the jigsaw task
6. Provide key questions to help the "expert groups" gather information in their particular area
7. Provide materials and resources necessary for all students to learn about their topics and become "experts"
8. Discuss the rules for recovening into "home groups" and provide guidelines as each expert reports the information learned
9. Prepare a summary chart or graphic organizer for each "home group" as a guide for organizing the experts' information report
10. Remind students that "home group" members are responsible to learn all content from one another

Energy sources – Jigshaw reading

Description of the activity:

Each student writes on a leaflet a type of energy source; the teacher raises the students' awareness and asks what kind of energy they have chosen and they are divided according to their choice of renewable or non renewable energy

solar – wind – geothermal – biomass – tidal – wave – hydroelectric

Wood _____ Nuclear

Oil – gas – coal – fossil - fuels

Finding out: work in groups of 5 and take one text. Don't read the text, look and find the heading of your text and the words "Advantages" and "Disadvantages" and underline them.

Write the advantages and disadvantages in the correct column and share with your group.

Sorting out: Choose four cities – one from each continent – use your atlas and discuss which tyoe of energy might be more suitable for them.

Make a presentation to the class.

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Finding argument and counter argument markers

Ex: "Why do some countries struggle to develop?": what teacher wants to know is argument and counter argument; in order to find them it is useful to find argument chunks and counter argument markers. After it's possible to search for argument and counter argument.

Write questions for answer provided by teacher or partner (see examples on the sheet)

Scanning to find specific words / information
Ex "Tropical rain forests" on fotocopy: read the text alone. Each sentence and part of each sentence has a purpose (fact, explanation, extra information). Write the number of the sentence in the chart and then compare with your partner.

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