**EXECUTIVE FUNCTIONS**

**TOOLS TO THINK WITH**

**What are Executive Functions?**

Executive functions form our self-control system. They help us to plan ahead to meet goals, filtering incoming information, prioritising, and controlling our responses. There are many different definitions of Executive Functions but most include the elements shown in the diagram below:

Executive Functions enable us to constantly monitor our surroundings and adjust and adapt our behaviour. This is how we learn, by constantly *critiquing*, *reflecting* and *improving*. Self-regulation is also crucial for learning as this is how we learn not to over-react, and to develop patience and self-control.

Executive Functions develop throughout our lifetimes, with two main spurts between three to five years, and early teens, continuing to develop until the late twenties or so, and continue to be a work in progress throughout our lifetimes.

**What? or How?**

Executive Functions do the heavy lifting work when it comes to thinking, so are not involved in automatic or familiar activities such as memorising lists. There may seem to be a great deal of pressure to try to learn new content, but there is a great difference between knowing *what* and knowing *how*. We can cram in lots of facts and figures, but knowing how to use that information is much more important.

**What**

When the teacher sends home things for the children to learn, parents may inadvertently be doing too much, acting **as** their children’s Executive Functions, as they:

* Prepare practice schedules
* Make resources
* Provide reminders and support

There may be a greater focus on the **WHAT** than the **HOW**. Parents need to build children’s Executive Functions without taking over those functions for them.

**How**

Instead of planning the practice schedule, teach the children how to do this for themselves, by modelling the process, thinking aloud, and gradually encouraging them to take over more and more of the process until they are doing it all by themselves.

Developing daily routines is a crucial part of the process, as the sense of time that this promotes underpins sequential thinking, which in turn aids prediction, memory, and patience. Patience is not only a virtue, but the foundation for emotional regulation and self-control, which is vital for controlling those impulses which hinder our learning.

Checklists and timers are very useful, as they reinforce clear task instructions, while providing opportunities for some autonomy.

**Learning how to learn**

Learning how to learn has a *high impact* for a very *low cost*. Learners will be able to monitor their own progress as they increasingly take control of their learning, and develop problem-solving skills. Learners who use these strategies have better outcomes, regardless of their underlying ability.

First, children need to know themselves. This means they need to have some understanding of things that they find easy or more difficult. They can be supported to develop this insight into their own learning by careful questioning.

Next, they need to develop skills of:

* Planning – including asking themselves which strategies they could use, what has worked before in similar circumstances, and what was less helpful.
* Monitoring – where they look at their progress and think about how well their plan is working.
* Evaluating – where they consider how well the plan worked this time, and how it could be improved for next time.

**Learning Checklist**

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| --- | --- |
| **Share Targets** | Understanding the learning objective will help children plan for success. Support them to ask themselves which strategies they could use. |
| **Monitor Learning** | Encourage them to think ahead and anticipate what might go wrong, and how they could prevent this from happening. |
| **Create Opportunities to Practise New Strategies** | Model a new strategy, then gradually withdraw support until it can be used independently. |
| **Self-Reflection** | Ask questions to encourage critical analysis of the outcome, and what they might do differently next time. |

**Questions**

|  |  |
| --- | --- |
| **PURPOSE** | **Why am I doing this?**  Do I know what the objectives are for this lesson? |
| **OUTCOME** | **What is the required end product?**  Do I know what a good example of this would look like? |
| **STRATEGY** | **What strategy should be used?**  Do I know which strategies I can use to help me achieve this? |
| **MONITORING** | **Was it successful?**  Did I meet the learning objective for this lesson? |
| **DEVELOPMENT** | **How can it be improved?**  Could I have done it better? |
| **TRANSFER** | **Can it be transferred to another skill?**  What have I learned from this lesson that I could use in another subject or situation? |

**Example:**

**Spelling**

Children with good visual memories may rely heavily on visual strategies, e.g. *Look, Cover, Write, Check*. This may work for a while, but it isn’t possible to learn every word this way.

The **morphology**, or **word families** approach, is much better for encouraging children to think about meaning. A *morpheme* is a unit of meaning, e.g. *unhappiness* has three, *un*, *happy*, and *ness*. Over 90% of English multisyllabic words have Latin roots, and a logical structure. This means we can break them down into *base-word*, *prefix* and *suffix*. A single Latin base word can create 5 – 20 other words.

The advantage of teaching morphology is that it aids:

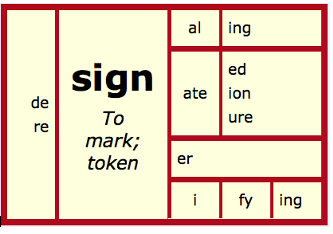
* Decoding skills
* Reading comprehension

It also makes strong links between top-down and bottom-up approaches, and can provide a different route in to decoding, with meaning.

Each ‘first level’ bubble could be further developed, e.g.

or:

Leading to a fully developed Word Matrix:



Let’s try another base root:

This method can also be combined with an onset-rime strategy, which is especially useful in the earlier years at school:

To begin with, it may be useful to ensure that the common letter pattern either rhymes, or has the same sound within the words taught. This is easier with the onset-rime strategy shown above, but when base roots are introduced, the root may sound different in different words.

When using onset-rime methods with younger children, use multisensory methods, highlighter pens, magnetic letters etc. to emphasis the parts that change and the parts that stay the same. Introduce a competitive element, by trying to find as many words as possible for each rime. What could you use as a strategy to make sure you try all the different onsets and combinations? How will you check? How will you know when you are finished?