

SUPPORTING EXECUTIVE FUNCTIONING IN THE CLASSROOM

A helpful guide for teachers, parents, and carers.

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What is Executive Functioning?

Executive function is a set of mental skills that include working memory, inhibition, emotional control, flexible thinking, and self-control. Executive function skills provide critical supports for learning and development, and we use these skills every day to learn, work and manage daily life.

Just as a highly effective air traffic control system functions to oversee the safe arrival and departure of multiple aircraft on multiple runways simultaneously, the brain also needs a similar set of skills (executive functions) to hold onto and work with information, filter out distractions, plan and prioritise tasks and evaluate performance.

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| **Area of Executive Function**  *(Definition)* | **What Can Difficulties in This Area Look Like in the Classroom?** | **Adaptations** | **Interventions** |
| T*he capacity to stop and think before doing something. The ability to resist an impulse and think through a situation (e.g., consequences) and appropriately stop a behaviour at the appropriate time.* | * Calling out * Talking over others or interrupting the teacher. * Difficulties stopping an inappropriate action for example talking during quiet times, rocking on their chair, getting up during a task etc. * Difficulties ignoring distractions around them. * Not being able to think of the consequences before acting – i.e., not understanding cause and effect. * Not being able to regulate their behaviour, for example not being able to walk away from a difficult situation or stop themselves from doing something. | * Clear visual reminders of expectations. * Subtle cues from teacher to remind child of expectations e.g., a hand on desk to prompt returning to work task. * Limit distractions (visual and auditory – having a quiet space to work, having limited things on their desk). * Allow for frequent breaks for motor activities, e.g., taking a book or resource to a different part of the classroom or a short movement break. * Avoid activities that require multi-tasking and going back and forward between different activities. | * Task switching activities such as Simon Says or Musical Statues. * Impulse control games such as Snap or Dobble. * Modelling and teaching whole-body listening, waiting, and turn-taking. * Have very clear classroom rules developed with the child and regularly reviewed to keep it at the front of the child’s mind. * Prime the child *before* situations where you see impulsive behaviour, e.g., role-play what to do in certain situations so the behaviour is easier to do in the moment. * Encourage self-talk to maintain thoughts on-task for longer. |
| *The ability to move freely from one situation, activity, or part of a problem to another. The ability to ‘switch’ between different thinking processes or skills within a task.* | * Feeling stuck on one activity or part of a task. * Finding it difficult to accept a different way to solve a problem. * Finding it difficult to move from one activity to another. * Using one approach to a problem with *all* problems even if not appropriate. * Finding it hard to “move on” from a difficult situation, interaction, or work task. * Repeatedly replaying difficult interactions in their mind. * Can be upset by a change in plans, including a change of teacher or classroom. * Not being able to “switch gears” in line with different task demands. * Struggling to switch their attention and transition between different situations/activities. | * Arrange for sufficient time for the child to move between activities, clearly signalling the change with a visual or verbal warning. * Use of consistent routines, supported by visuals, and regularly communicated to the child. | * A warning (e.g., two-minute countdown) signalling a change in activity. * If there is going to be an unexpected change in the child’s day, try to prepare them for this by explaining (or using visual supports) in advance (where possible) what is going to happen and why. * Use visual timers to help prepare a child for a transition. Silent or vibrating timers might be preferable for some children. * Help the child plan out how long activities might take e.g., “getting ready for PE is x minutes”. * Model and support the child to make and use simple checklists to outline the steps needed to complete a task before moving on. |
| *The ability to recognise and regulate emotions in order to achieve the goal we have set. Big feelings take away the attention from the task/situation and focus this on self-preservation.* | * Getting frustrated or shutting down. * Big or disproportionate reactions to seemingly small triggers. * Showing extreme emotional reactions (both verbally and physically). * Moving quickly from one emotion to another. * Demonstrating fight/flight/freeze behaviours, e.g., running out of the classroom, becoming very ‘stuck’ or being physical in their response. * Finding it hard to calm down after an emotional response. * Becoming angry, upset, or dysregulated very quickly. * Reacts quickly or strongly to peer disagreements. * Big emotional responses to situations or events that they feel are unfair. | * Use an ABC (antecedent, behaviour, consequence) chart to notice patterns of what might trigger emotional reactions in the child, and *where possible* minimise or pre-empt these. * Maximise routine and predictability. * Model how we manage our own emotions throughout the school day, e.g., talking aloud about how we may be feeling, what we may be thinking, sharing how we self-regulate and how to overcome challenges. * Have a time-out (or similar) pass available for students who need to step away from a task or situation. | * Teach specific techniques to help self-regulate behaviour, e.g., using cognitive behavioural approaches to help the child link their thoughts, feelings, and behaviours. * Emotion Coaching and Zones of Regulation to develop their ability to recognise and name how they are feeling. * 5-Point Scale to help visualise “how big is the problem?” and help develop awareness of their feelings and what to do with big emotions. * Use comic-strip conversations to help a child to develop a plan to follow when they feel dysregulated. This may include a safe space to go to, a supportive adult they can seek out or a regulating activity (mindfulness, breathing, colouring, a short walk outside). |
| *The ability to begin a task or activity and to independently generate ideas.* | * Slow to begin a task or to know what to do. * Needs prompting or adult support to get started, even on a task they are willing to do. * Needing to be reminded of instructions several times. * Not being able to resist temptations or distractions when expected to get started on a task. * Appearing to have not listened to instructions. | * Try and ensure the first step or part of a task is motivating, engaging and achievable for the child. * Break down big or complex tasks into smaller parts using visuals such as flow-charts or checklists. * Having a visual reminder of spoken instructions that the child can refer back to. * Practical demonstrations and modelling. * Example of the final product of a task for the child to refer to, so that they know when they have achieved it. * Have opportunities for paired or small group work with a shared goal to provide positive role models for the task. | * Using sentence starters, story frames or mind-maps to help a child start getting their ideas on paper. * Use forward and backward chaining when providing instructions and modelling activities. * Using and encouraging verbalisation to reinforce task demands (say what you are doing out loud whilst modelling a task and encourage the child to do the same when they repeat it, or ask them to repeat instructions back to you in their own words). * Help the child understand the clear purpose of the activity, relate it to them personally and draw upon personal interests to build motivation. |
| *The ability to hold verbal or visual information in mind and process this for the purpose of completing a task and being able to stick with an activity.* | * Struggling to follow instructions. * Quickly forgets answers. * Difficulty writing sentences or longer written responses. * Difficulty concentrating or focusing, especially on tasks with lots of verbal or written information. * Easily distracted by their environment and those in it. * Needs help from an adult to stay on task. * Finds it hard to retain previous learning and build upon it, or apply it in new contexts. | * Visual reminders of instructions on the child’s table. * Using repetition and rehearsal to reinforce learning. * Reduce the amount of information a child has to hold in mind at any one time – e.g., break down instructions into smaller chunks. * Colour coding key concepts. * Explicitly linking previous learning to new tasks to help a child recall and apply what they have learnt. * Linking new learning to personal experiences or interests to help encoding information to memory and application to learning tasks. * Priming children through pre-teaching to develop task understanding, increase confidence, and free up thinking processes when completing tasks. | * Using videos, word processing devices, voice recognition devices to help them ensure they record relevant information in a timely manner. * Encourage using memory aids (personalised word banks, posters, charts, number lines, multiplication grids etc) throughout the day. * Help the child to develop their own strategies to support their memory, this might include teaching them to ask for help, how to note-take and how to organise themselves. * Using sentence starters, story frames or mind-maps to help a child record their ideas. * Provide additional time for children to meaningfully process verbal information or instructions (apply the 5 second waiting rule). |
| *The ability to anticipate future events, set goals and map out steps towards those goals. This involves being able to decide what is or is not important to focus on.*  *Bringing order to information and appreciating main ideas or key concepts when learning or communicating information.* | * Difficulty planning a piece of work, for example being able to identify the start, middle, and end of a story or piece of creative writing. * Having good ideas but struggling to get them down on paper. * Feeling overwhelmed by tasks because they cannot see the steps towards achieving the goal, or tries to do everything at once. * Not being able to link actions and consequences. * Finding it hard to identify the key idea or concept in a piece of work. * Difficulties setting goals or targets for themselves. * Can get caught up in details and misses the big picture. * Underestimates how long it will take to finish a task. | * Providing clear, simple timelines for completing tasks. * Making steps for tasks short and achievable so that there are regular opportunities to feel achievement. * Demonstrate and model what the plan is during tasks. * Remove unnecessary information to make it easier for the child to notice and process the key information. * Ask questions to help the child prioritise, e.g., “what do you need to do and what do you need to start with”. * Use a ‘first’, ‘next’, ‘last’ system to break down tasks into more manageable parts with a clear structure. | * Provide the child with planning tools such as checklists, mind-maps, and visual timetables. * Teach planning explicitly and support the child to understand why planning is important, linked to real life examples. * Use a goal-setting ‘ladder’ to clearly demonstrate the process of completing one ‘step’ at a time. * Engage in sequencing activities and games with the child. * A daily check-in to help the child review their timetable and plan for the day. * Planning and goal setting questions: “what is required?” (knowledge of task), “have I done anything like this before?” (knowledge of self), “how do I achieve the goal” (knowledge of strategies). |
| *The ability to keep workspace and materials in order. To be able to order information and resources around us. This can be general (i.e., daily activities) or task specific.* | * Often not having what is needed for a task or activity. * Regularly loses or misplaces belongings. * Messy work or leaves the desk/classroom in a mess. * Takes a very long time to get dressed or get ready for an activity that requires specific resources or materials. * Constantly restarts an activity from the beginning. * Difficulty remembering correct equipment. * Does not bring home homework, sheets, materials etc. | * Create checklists of materials and equipment, colour coded for each activity. * Visual timetables to help with organisation at the start of the day. * Pictorial timetable of resources (i.e., a picture of the different items in their PE kit for days they have PE). * Forward and backward chaining. * Have their classroom/bedroom organised with clear labelled containers, drawers etc. | * Teach age-appropriate study skills. * Teaching routines e.g., packing bags. * Give an organisational role within the class, e.g., hand out and collect books or organise equipment on their table. |
| *The ability to check one’s performance during or after finishing a task and adjust to changing demands.*  *The ability to keep track of the effects of one’s own behaviour, including on others.* | * Does not check their work for mistakes. * Is unaware of how their behaviour affects or bothers others. * Has poor understanding of their own strengths and weaknesses. * Regularly leaves work messy or unfinished. * Does not realise that certain actions impact others. * Can be unaware of their own behaviour within a group. * Written work is poorly organised. * Makes seemingly careless mistakes or makes the same mistake over and over again. * Leaves messes that others have to clear up. | * Adults to lead restorative conversations following incidents or difficult interactions. * Support the child to develop an internalised script to use to support reflection following a challenging interaction or task. * Involving the child in ticking tasks off on a visual timetable. * Prompt sheet for checking work. * Have evaluation discussions at the end of tasks. * Have children self-correct mistakes from a previous task before starting next task. | * Use of Social Stories or Comic Strip Conversations to support the child to understand their own behaviour and consequences. * Strengths Cards, Blob Tree, or Ideal Self Task to develop an awareness of strengths and difficulties. * Create a book of successes e.g., examples of good work, pictures of the child in action, quotes from friends and teachers. * Use mediated learning questions such as: * “what is the problem we need to solve?” * “what have you been asked to do?” * “have you got the right equipment?” * “how can we make a plan? * “what will you need to do first…then?” * “do we know what finished looks like?” |



Executive Functioning in the Early Years

*Below are examples of games, activities and ideas that can be implemented to support the development of executive function skills in infant from 6 months all the way to 5 years of age. This list is not an exhaustive list but just some ideas to get you started.*

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| Executive Function Activities for 6- to 18-month-olds |
| * Peekaboo — Hide-and-find games like this exercise working memory, because they challenge the baby to remember who is hiding, and they also practice basic self-control skills as, in some variations, the baby waits for the adult to reveal him or herself. In other versions, the baby controls the timing of the reveal; this provides important practice regulating the tension around an expected surprise. * Pat-a-Cake — Predictable rhymes that end with a stimulating yet expected surprise are well-loved. Infants exercise working memory as they develop familiarity with the rhyme and practice anticipating a surprise, inhibiting their anticipatory reactions while managing high levels of stimulation. * Hide a toy under a cloth and encourage the infant to look for it. Once infants can find the toy quickly, hide it, show the child that you have moved it, and encourage the child to find it. Make more moves to increase the challenge. As the child remembers what was there and mentally tracks the move, he or she exercises working memory. Older infants may enjoy hiding themselves and listening to you search loudly for them while they track your location mentally. * Infants love to copy adults. When they imitate, they have to keep track of your actions, remember them, wait their turn, and then recall what you did. In doing so, they practice attention, working memory, and self-control. These games have a variety of forms, from taking turns making simple gestures (e.g., waving) to organizing toys in certain ways and asking children to copy you (e.g., placing toy animals in a barnyard) or building simple buildings by putting one block on top of another and perhaps knocking them down to rebuild. * Take turns with any activity that interests the child, such as sweeping the floor, picking up toys, dusting, etc. These games introduce the basics of imaginary play and practice working memory, self-control, and selective attention, because the toddler must hold the activity in mind to complete it while avoiding distractions and inhibiting the impulse to do other things. |
| Executive Function Activities for 18- to 36-month-olds |
| * Simple imitation games, such as Follow the Leader, or song games like Follow, Follow (“Follow, follow, follow [child’s name], follow, follow, follow [child’s name]”—all children imitate [child]). These are great tests of working memory as well as attention and inhibition. * Games that require active inhibition can be fun, too, like freeze dance (musical statues), although don’t expect children to “freeze” without a few reminders. Also effective are song games that require children to start and stop, or slow down and speed up, such as Jack in the Box; Popcorn; Ring Around the Rosie Fingerplays, or songs and rhymes with hand gestures to match, continue to be popular with children this age, similarly challenging children’s attention, working memory, and inhibitory control. * Talking about feelings is also important, either by labelling children’s feelings as they are noticed (“It looks like you are really angry right now”) or by telling the story of a time a child became upset. By giving children language to reflect on their feelings, these conversations can support the development of emotional regulation, which is essential for engaging executive function. * Ask children to play a sorting game in which you take turns sorting objects by size, shape, or colour. * Engage older toddlers in a silly sorting game, such as putting small shapes in a big bucket and big shapes in a small bucket. Children tend to put like with like, so a change is challenging, requiring them to inhibit the expected action and engage their selective attention and working memory. As they get older, toddlers also start to enjoy simple puzzles, which require attention to shapes and colours. Adults can ask children to think about what shape or colour they need, where they might put a certain piece, or where they might put the piece if it doesn’t fit, thereby exercising the child’s reflection and planning skills. |
| Executive Function Activities for 3- to 5-year-olds | |
| * Provide a varied set of props and toys to encourage this type of play. Younger pre-schoolers may need more realistic props to get the play started (e.g., toy medical kits), while older children can re-purpose other things to turn them into play props (e.g., paper towel tube that is used as a cast for a “broken arm”). Reusing familiar objects in a new way also practices cognitive flexibility. * Allow children to make their own play props. Children must determine what is needed, hold this information in mind, and then follow through without getting distracted. They also exercise selective attention, working memory, and planning. If the original plans don’t work out, children need to adjust their ideas and try again, challenging their cognitive flexibility. * Play plans can be a good way to organise play. Children decide who they are going to be and what they are going to do before they start playing, and then draw their plan on paper. Planning means that children think first and then act, thus practicing inhibitory control. Planning play in a group also encourages children to plan together, hold these plans in mind, and apply them during the activity. It encourages social problem solving, as well as oral language. * Play some music and have children dance really fast, then really slowly. Freeze dance is also fun, and it can be made more difficult by asking children to freeze in particular positions. When the music stops, children must inhibit action and shift their attention to the picture to imitate the shape depicted. * Songs that repeat and add on to earlier sections (either through words or motions) are a great challenge to working memory, such as the motions to She’ll Be Coming ’Round the Mountain, the words to Bought Me a Cat, and backward-counting songs, such as Five Green and Speckled Frogs and songs repeating a long list (the Alphabet Song). * Matching and sorting activities are still fun, but now children can be asked to sort by different rules, promoting cognitive flexibility. Children can first sort or match by one rule (such as by colour), and then immediately switch to a new rule (such as by shape). For a more challenging version, play a matching game, but change the rule for each pair. Or play a bingo or lotto game, in which children have to mark a card with the opposite of what is called out by the leader (e.g., for “day,” putting a chip on a nighttime picture). Children have to inhibit the tendency to mark the picture that matches, while also remembering the game’s rule. Increasingly complicated puzzles can engage children this age, exercising their visual working memory and planning skills. * Cooking is also a lot of fun for young children. They practice inhibition when waiting for instructions, working memory while holding complicated directions in mind, and focused attention when measuring and counting. | |

Executive Functioning and Adolescence

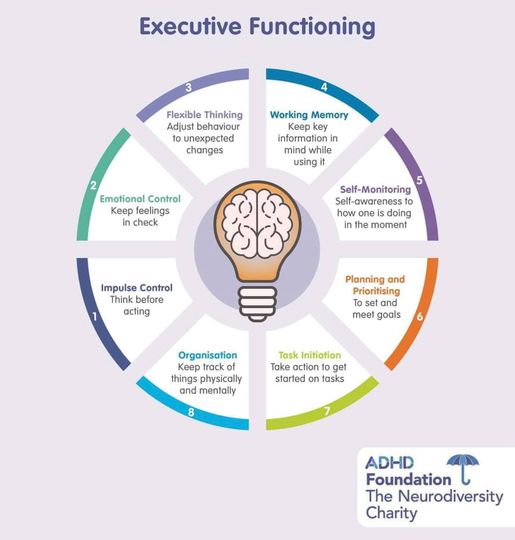
*As students progress through the school system, the demands on their executive functioning skills increase. They are expected to have increased independence, organisation, and stamina for learning, as well as juggling more competing demands. All this at the same time as their brain is undergoing a period of significant change. All adolescents experience some difficulties with executive functioning as the parts of their brain responsible for these skills adapt and develop. This is why we see increased risk-taking and impulsivity, and disorganisation and challenges with planning and prioritisation in most adolescents! However, for students who already had difficulties with executive functioning skills, the combination of an adolescent brain and the increased demands of school, especially when it comes to exams and revision, can feel overwhelming. In addition to the strategies and guidance above, we have included some additional ideas to support learners in the later stages of secondary school.*

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| **Executive Function** | **Additional Demands (Examples)** |
| **Inhibit** | Managing behaviour expectations.  Being able to focus and wanting to be included. |
| **Working Memory** | Remembering what lessons, they have each day.  Building on previous learning and revising key concepts. |
| **Organisation of Materials** | Having appropriate resources for lessons.  Bringing homework even when completed. |
| **Shift** | Moving between several different subjects and with different staff members.  Shifting between social and academic demands |
| **Plan/Organise** | Prioritising study/homework.  Set goals (short term or long term).  Linking current schoolwork with future aspirations. |
| **Initiate** | Motivation for learning and school.  Overcoming anxieties about study/revision. |
| **Monitor** | Awareness of impact of behaviour on others.  Understanding cause/effect and impact of decisions |
| **Emotional Control** | Hormonal changes increased emotional reactivity.  Social and emotional demands competing with executive functioning. |

*Difficulties with executive functioning can be a real barrier to independence. As independence is one of the key tasks of adolescence, it’s important for adults to support learners to find ways to overcome their executive functioning differences and have increased independence.*

Executive Functioning and Independence

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| **Area of Independence** | **Examples of support** |
| **Managing the demands of their education, training, or employment setting** | Students will need clear, concise calendars and planning tools to reduce the demand on their working memory and support executive functioning skills such as planning, prioritisation and organisation. Help them to choose and use discrete planning tools that they can have access to throughout the day, and help them to build a routine of preparing for the following day in the evening.  Summarise important school information for students so that they can clearly identify and understand key expectations, rules, and demands. |
| **Independent learning, revision, and study skills** | Ensure students have access to reference materials and tools that support their learning. This might include practicing using online resources or helping them to organise school materials in a way that makes sense for them and that they can refer back to during revision.  Executive Functioning can make it hard to take concise and organised notes, impacting revision. Support the student by explicitly teaching ways to record ideas clearly such as using mind-maps or flow-charts.  Support students to ‘RAG’ rate assignments and tasks when they are feeling overwhelmed to help them prioritise the most important tasks or activities.  Discuss the importance of self-checking school work and practice this *with* the student until this becomes habitual. |
| **Social development and communication** | Some students with EF difficulties may need explicit teaching of social skills and support through restorative conversations to help them understand difficult interactions with their peers or a class teacher.  Executive functioning difficulties can present as challenging behaviour in a secondary school classroom and this can have an impact on students’ perceptions of their relationships with their teachers. Teachers should use a connect-before-correct approach to ensure that any behavioural corrections do not impact their relationship with that child.  At home, too, relationships with adolescents can be challenging. Opportunities for relationship repair after a difficult conversation, in which the adult models reflection and self-awareness, will be helpful. |
| **Online safety** | Ensure computers and technology being used by students have age-appropriate controls installed.  Have open discussions about online risks and use case studies to help students reflect on safety and risk online. |
| **Safety and risk management** | Students with EF difficulties might find it difficult to identify risks and think about the consequences of certain choices. Regular opportunities to explore and analyse different situations will help the student to apply these skills ‘in the moment’. |
| **Personal care and healthy lifestyle** | Students with EF difficulties may find it difficult to establish healthy, consistent self-care routines and will need support in doing this.  Ensure they have an age-appropriate understanding of their own healthcare needs, including how to access support if they need it. |
| **Life skills** | Support the student to find and practice use tools and apps that help with skills such as planning travel, managing money, and organising their calendar. **Citymapper** and **Monzo** are good examples of apps that use colour coding and other helpful strategies that support EF difficulties.  Discuss the importance of eating healthy foods and support the student to choose and plan their own meals. Developing simple cooking skills is a helpful step towards independence as well as a good opportunity to practice a range of EF skills, such as planning, organisation, initiation, and organisation of materials. |
| **Planning for the future** | Provide regular opportunities to explore and discuss different aspirations and career choices. Help the student to identify their strengths and interests and link these to future choices. Using a framework such as **PATH** can help the student make clear, realistic, positive plans for their future. |



Multi-sensory revision – writing, reading, listening, watching.

Keep using clear visuals like colour-coding, mind-maps, flow-charts, timelines.

* “Chunk” information and avoid distracting information.

Notice how you are feeling – do you need an ‘activating’ or ‘soothing’ activity first?

Notice when you are feeling overwhelmed and step away from the revision. Find your “prime time”.

* Take regular breaks.
* Short review of your revision each evening.

Allow enough time in your plan and give extra time for difficult tasks.

Do the “hardest” thing first.

* Make sure your plan includes ‘brain breaks’ and activities that you enjoy and look forward to.

Create a simple, enjoyable routine that starts your revision – maybe making a cup of tea, organizing your revision space, and choosing some music to play.

Have a to-do list to motivate you to ‘tick off’ tasks.

* Clear task planners can help identify the first thing to do when you are feeling overwhelmed.

Use a range of revision techniques and don’t be afraid to try new things.

Practice uncommon exam questions to become more comfortable with unexpected questions.

Rest, exercise, eat well, make time for social activities or time doing activities you enjoy.

Notice when you are feeling stressed or anxious and take a break.

* Notice “negative automatic thoughts”

Try “body doubling” – studying with someone else close by, even if they are doing something different, can help with impulse control/avoiding our tasks.

* Build in set times to do the things you know distract you.
* Minimise distractions.

Use a clear revision/study timetable.

Use colours, labels, folders or binders to organize your “revision system”.

* Try and keep your revision space tidy.
* Save some time on your daily timetable to prepare for the next day.

Executive Functioning and Revision