Executive Functioning in Gifted Students
What is executive functioning?
Executive Functioning

Executive function is like the CEO of the brain. It’s in charge of making sure things get done from the planning stages of the job to the final deadline.

“Understanding Executive Functioning Issues”
Amanda Morin, Understood
Executive Functioning

They help us **plan, organize, make decisions, shift between situations or thoughts, control our emotions and impulsivity, and learn from past mistakes.** Kids rely on their executive functions for everything from taking a shower to packing a backpack and picking priorities.
Executive Functioning

**Working memory** — The ability to hold information in mind and use it.

**Inhibitory control** — The ability to master thoughts and impulses so as to resist temptations, distractions, and habits, and to pause and think before acting.

**Cognitive flexibility** — The capacity to switch gears and adjust to changing demands, priorities, or perspectives.
Executive Functioning

— Make plans
— Keep track of time and finish work on a deadline
— Manage more than one task at once
— Prepare for upcoming tasks or events
— Evaluate ideas and reflect on our work
— Change our minds and make mid-course corrections while thinking, reading and writing
— Ask for help or seek more information when we need it
— Engage in group dynamics
— Wait to speak until we’re called on
What does it look like when it’s not working?
When kids have issues with executive functioning, any task that requires planning, organization, memory, time management and flexible thinking becomes a challenge.
Underdeveloped Executive Functioning

— Overwhelmed by large assignments; doesn’t know how to start
— Doesn’t bother to write down assignment; forgets the directions
— Forgets to bring materials back and forth between home and school
— Does work, but forgets to turn it in
— Can’t find things in backpack/desk/cubby/locker or leaves a “paper trail”
— Chooses fun stuff over homework or chores
— Does things either quickly and messily or slowly and incompletely
— Sticks with a plan, even when it is clearly not working
— Leaves long-term assignments or chores until last minute
— Procrastinates or doesn’t study at all
— Loses or misplaces things (books, lunchbox, notebooks, jacket, etc.)
Underdeveloped Executive Functioning

**Working memory** — This is your child’s ability to hold information in her mind and use it to complete a task. Kids who have weak working memory skills have trouble with multi-step tasks. They have a hard time remembering directions, taking notes or completing a series of tasks.

**Organization** — This is your child’s ability to keep track of information and things. Kids with organizational issues are constantly losing or misplacing things. They can’t find a way to get organized even when there are negative consequences to being disorganized.

“Understanding Executive Functioning Issues”
Amanda Morin, Understood
Underdeveloped Executive Functioning

Impulse control — This is your child’s ability to stop and think before acting. Kids who have trouble with impulse control may blurt things out. They’re likely to rush through homework without checking it. They may quit a chore halfway through to do something with a more immediate reward.

Self-monitoring — This is your child’s ability to keep track of and evaluate her performance on regular tasks. Kids who have trouble self-monitoring lack self-awareness. They can’t tell if their strategies are working or may not even realize they have strategies. They often don’t know how to check their work.

“Understanding Executive Functioning Issues”
Amanda Morin, Understood
Underdeveloped Executive Functioning

Planning and prioritizing — This is your child’s ability to come up with the steps needed to reach a goal and to decide their order of importance. Kids with weak planning and prioritizing skills may not know how to start planning a project. They may be easily overwhelmed trying to break tasks into smaller, more manageable chunks.

Task initiation — This is your child’s ability to get started on something. Without having a plan for a task, it’s hard to know how to start. Kids with task initiation problems can come across as lazy or as simply procrastinating. But often they’re just so overwhelmed they freeze and do nothing.

“Understanding Executive Functioning Issues”
Amanda Morin, Understood
Underdeveloped Executive Functioning

These issues do not show up all of the time. If the task is fun, interesting, and immediately rewarding, on-task behavior can be sustained.
Is this common in gifted students?
Executive Functioning in Gifted Learners

— They understand everything in class and don't develop study skills
— They can memorize homework and never learn to actually write it down
— They complete homework in 15 minutes and never have to manage their time
— They innately understand material in class and don't learn to take notes
— They have never struggled in school and don't know how to overcome obstacles
— Assignments are intuitive for them, so there was never a need for outlining or planning larger projects
Executive Functioning in Gifted Learners

Kids who had higher IQs to begin with seemed to have an extended period in adolescence during which they retained the ability to learn at a rapid pace, just like much younger children.

“The Nature and Nurture of High IQ”
Brant and Hewitt, Colorado Institute for Behavioral Genetics
Figure 1.2 Changes in the thickness of the brain's cortex between the ages of 7 and 19 in individuals of superior, high, and average intelligence.
Figure 1.2  Changes in the thickness of the brain’s cortex between the ages of 7 and 19 in individuals of superior, high, and average intelligence.
The later maturation of the cortex may explain why gifted kids tend to lag in executive function skills compared to neurotypical agemates. But most do catch up eventually. These students need more scaffolding and support for executive function in middle school, when they may be expected to have already mastered these skills.
What can we do to help?
A review from cognitive scientist Daniel Willingham reports that certain parental behaviors — “meaningful praise, affection, sensitivity to the child’s needs, and encouragement,” along with intellectual stimulation, support for autonomy, and well-structured and consistent rules — can help kids develop robust executive function skills over the long run.

“The Science of Smart”
Annie Murphy Paul, NOVA’s Secret Life of Scientists
Ways to Develop Executive Functioning

Checklists
Time Keeping
Routines
Motivation
Exercise
Checklists

(a) describe the problem behavior
(b) set a goal related to the problem behavior
(c) establish a procedure or a set of steps the child will follow to reach the goal
(d) turn the steps into a written list, checklist, or short set of rules to follow
(e) prompt the child to use the list when it is needed
(f) evaluate the process and make changes if necessary
(g) fade the supervision

“Best Practices in Assessing and Improving Executive Skills”
Peg Dawson, Best Practices in School Psychology
### BEDROOM-CLEANING CHECKLIST

<table>
<thead>
<tr>
<th>Task</th>
<th>Number of reminders</th>
<th>Done (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put dirty clothes in laundry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Put clean clothes in dresser/closet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Put toys away (toy shelves, toy box)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Put books on bookshelves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tidy desk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Throw away trash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return things to other rooms (e.g., dishes, cups, towels, sports stuff)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MORNING ROUTINE CHECKLIST

<table>
<thead>
<tr>
<th>Task</th>
<th>Number of reminders</th>
<th>Done (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Get dressed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eat breakfast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Put dishes in dishwasher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brush teeth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brush hair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Get backpack ready for school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What your <strong>SPACE</strong> needs</td>
<td>What you need <strong>BEFORE</strong> class</td>
<td>What you need <strong>DURING</strong> class</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Clean surfaces</td>
<td>Choose a seat that works for you</td>
<td>book, handouts, HW, paper(s), etc.</td>
</tr>
<tr>
<td>Backpack/binder nearby</td>
<td>Have a sharpened pencil</td>
<td>quiet fidget if necessary</td>
</tr>
<tr>
<td>Minimal distractions</td>
<td>Have your book, handouts, HW, paper, etc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Binder / Folders</strong></th>
<th><strong>YES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Each subject is represented</td>
<td>YES</td>
</tr>
<tr>
<td>Papers are hole-punched and placed in the correct section. If you have brads or a 3-ring binder, papers are inserted properly (not just stuffed into a section)</td>
<td>YES</td>
</tr>
<tr>
<td>Old assignments and/or papers are thrown away (NOTE: Make sure these are not papers you need to keep for cumulative work)</td>
<td>YES</td>
</tr>
<tr>
<td>Your dividers clearly labeled</td>
<td>YES</td>
</tr>
<tr>
<td>Papers follow an order (most recent on top) in each binder / folder</td>
<td>YES</td>
</tr>
</tbody>
</table>
Time Keeping

1. Make a to-do list
2. Estimate how long each task will take
3. Time and record how long each task took
4. Adjust estimates, environment, and plan
<table>
<thead>
<tr>
<th>Day</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Spelling 1-2</td>
<td>Spelling 3-g</td>
<td>Spelling 3-g</td>
</tr>
<tr>
<td></td>
<td>5-10 min.</td>
<td>5-10 min.</td>
<td>5-10 min.</td>
</tr>
<tr>
<td>Math</td>
<td>Paper</td>
<td>Page 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5-8 min.</td>
<td>5-8 min.</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Mission Research</td>
<td>Mission Research</td>
<td>Mission Research</td>
</tr>
<tr>
<td>Studies</td>
<td>20-30 min.</td>
<td>20-30 min.</td>
<td>20-30 min.</td>
</tr>
<tr>
<td>History</td>
<td>Sister Ice</td>
<td>Skating</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time in</td>
<td>Time out</td>
<td>Time out</td>
</tr>
<tr>
<td></td>
<td>Time in</td>
<td>Time out</td>
<td>Time out</td>
</tr>
<tr>
<td></td>
<td>Time in</td>
<td>Time out</td>
<td>Time out</td>
</tr>
<tr>
<td></td>
<td>Time in</td>
<td>Time out</td>
<td>Time out</td>
</tr>
<tr>
<td></td>
<td>Initials</td>
<td>Initials</td>
<td>Initials</td>
</tr>
<tr>
<td></td>
<td>Comments/Signature</td>
<td>Comments/Signature</td>
<td>Comments/Signature</td>
</tr>
</tbody>
</table>

- Spelling 1-2, 5-10 min.
- Paper, 5-8 min.
- Mission Research, 20-30 min.
- Mission Research, 20-30 min.
- Mission Research, 20-30 min.
- Sister Ice skating
- Time in, Time out, Initials, Comments/Signature
- Spelling 3-g, 5-10 min.
- Page 3, 5-8 min.
- Mission Research, 20-30 min.
- Mission Research, 20-30 min.
- Mission Research, 15 min.
- Mayer, Angela, 30 min.
- Still need about sushi for dinner
- Time in, Time out, Initials, Comments/Signature
Time Keeping

4 minutes 38 seconds
Time Keeping
Time Keeping
Time Keeping

What step am I on?

Am I still focused on the goal?

Is anything robbing my time (e.g. distractions)?

Do I need to move at a faster or slower pace?
### Time Keeping

#### Daily Homework Planner

<table>
<thead>
<tr>
<th>Subject/Assignment</th>
<th>Do I have all the materials?</th>
<th>Do I need help?</th>
<th>Who will help me?</th>
<th>How long will it take?</th>
<th>When will I start?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<td>Yes</td>
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<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

When will I take breaks?  
What will be my reward for following my plan?
Educational specialists recommend starting homework at the same time every day. Ideally, kids should come home, unpack their bag, have a snack, and then get started. Homework is best done in a quiet, well-lit space fully stocked with paper and pencils because a search for supplies can quickly derail homework time. Any space with minimal distractions is good. Some families find doing homework on the kitchen table works best for their child, particularly if a parent is nearby to supervise and answer questions.

“Helping Kids Who Struggle With Executive Functions”
Rachel Ehmke, Child Mind Institute
Fig. 1 A left-to-right work system. Tasks are placed on the student’s left and a “finished” container is placed to the student’s right.
Routines
Routines

My Homework Contract

This contract between ___________________ and ___________________

begins on _____________. We agree to look at it again after ______ weeks.
Routines

For Me to Fill Out
I agree to try to do my homework every day and get it to my teacher on time.

Doing My Homework *(check all that apply)*
I will:

☐ Work at the spot we’ve chosen for homework. That spot is ____________.
☐ Let my parent know if I need more or new materials.
☐ Stick to this homework schedule *(write in times)*:

- Monday from ______ to ______
- Tuesday from ______ to ______
- Wednesday from ______ to ______
- Thursday from ______ to ______
- Friday from ______ to ______

☐ Spend at least ______ minutes on my homework.
☐ Take a ______ minute break if I get frustrated or can’t concentrate.
☐ Ask for help only after I try to do my homework on my own.

☐ ________________
☐ ________________
For My Parent to Fill Out
I agree to help make sure my child has what is needed to complete and return homework.

I will (check all that apply):

☐ Check my child’s assignment notebook daily.
☐ Provide the necessary supplies.
☐ Provide a quiet area as a homework spot.
☐ Be available to answer questions during homework time. If I cannot be available, I will make sure my child knows who can answer questions as they come up. ________________ will be able to answer questions.
☐ Help my child as needed by demonstrating how to find the answers and providing guidance.
☐ Check in with my child’s teacher about any questions or concerns that come up during homework time.
☐ Allow my child to take breaks as needed.
☐ Check over homework when it’s done.
☐ Provide the rewards or consequences agreed to in this contract.

☐ ______________________________________

☐ ______________________________________
## For Us to Fill Out Together

**Rewards & Consequences**
For following this contract and finishing my homework, I will get the following rewards:

- At the end of the day: ____________________________
- At the end of the week: __________________________

If we don’t follow this contract and I don’t get my homework done, the consequences will be:

- For student: ____________________________
- For parents: ____________________________
Routines

Keep a box near the front door for everything your child needs to take with them. This is the place to put materials when you are done. Computers, books, lunchboxes, soccer cleats, backpacks, permission slips, and projects can be left here. Then, make it a routine to take everything from the box when you leave for school each morning.

“Helping Kids Who Struggle With Executive Functions”
Rachel Ehmke, Child Mind Institute
We can control immediate impulses through the establishment of fixed daily routines (specific times for learning and leisure activities) as well as more effective time management. But, it does take hard work to establish new habits.
Rehearse these routines when the stakes are not high. Model and practice the systems to make sure they will work.
Younger kids need external motivators to highlight the value of these new strategies. Something like a star chart, where kids see the connection between practicing their skills and working towards a reward, works very well. It’s also a good way to communicate to kids that their parents and their teacher also value this skill.
**Incentive Planning Sheet**

**Problem Behaviors**
- Arguing about homework
- Leaving it until just before bed

**Goal**
- Complete homework without complaining before 8 p.m.

**Possible Rewards**

<table>
<thead>
<tr>
<th>Daily</th>
<th>Weekly</th>
<th>Long-Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra tv show</td>
<td>Chance to rent video gram</td>
<td>Buy video game</td>
</tr>
<tr>
<td>Extra video game time</td>
<td>Have friend spend night on weekend</td>
<td>Buy CD</td>
</tr>
<tr>
<td>Play game with Dad</td>
<td>Mom will make favorite dessert</td>
<td>Go skiing</td>
</tr>
<tr>
<td>Extra half-hour before bed</td>
<td>Chance to choose dinner menu</td>
<td>Eat out</td>
</tr>
</tbody>
</table>

**Possible Penalties**
- Can’t play with friends after school
- Loss of tv/video game time
- Begin homework right after school
Effective Praise:

1. is delivered immediately after the display of positive behavior;
2. specifies the particulars of the accomplishment (e.g., Thank you for getting your toys out of the living room right away after I asked you);
3. provides information to the child about the value of the accomplishment (e.g., When you get ready for school quickly, it makes the morning go so smoothly!);
4. lets the child know that he worked hard to accomplish the task (e.g., I saw you working hard to control your temper!); and
5. orients the child to better appreciate their own task-related behavior and thinking about problem-solving (e.g., I like the way you thought about that and figured out a good solution to the problem).
Motivation

Did your child impress you by completing his chores without you having to ask more than once? Celebrate this little victory with her and, most importantly, ask how she was able to take care of business without your help. Did she promise herself video game time if she completed her chores first, or did she use motivational self-talk to assure herself, “It’ll only take five minutes”? 

“Strategies for Parents to Build Children’s Executive Function Skills”
Alexa Nappa, Beyond Book Smart
On the other hand, let’s say he struggles to finish chores without a second (or third, or fourth) reminder. Ask what he thinks is getting in the way and allow him to come up with a few solutions for getting the job done. This approach will likely be more productive than a fifth reminder or simply taking care of the chore yourself.

“Strategies for Parents to Build Children’s Executive Function Skills” Alexa Nappa, Beyond Book Smart
A just-published review of the relevant research, appearing in the journal Psychonomic Bulletin and Review, concludes that “ample evidence indicates that regular engagement in aerobic exercise can provide a simple means for healthy people to optimize a range of executive functions.” Studies of kids have found that regular aerobic exercise can expand the working memory of school-children as well as improve their selective attention and their ability to inhibit disruptive impulses.

“The Science of Smart”
Annie Murphy Paul, NOVA’s Secret Life of Scientists
Where do I start?
Beginning the Process

Introduce one strategy at a time so you can see if it has a positive effect.

— Make a backpack checklist for remembering items
— Set up a specific routine around homework
— Practice estimating how long tasks will take and timing them
— Make a checklist for household chores
— Create a behavior contract and rewards system
— Start a “go box” by the door
Beginning the Process

Introduce one strategy at a time so you can see if it has a positive effect.

**Do my homework in a reasonable amount of time.**
- Set up a homework spot with all my supplies and no distractions.
- Start my homework long before bedtime.
- Figure out how long each assignment should take.
- Build in time for short breaks and snacks if I need them.
- Turn off my phone.
- Make sure I understand the directions.
- Ask for help if I need it.
- Mark off on my calendar every day I've done my homework in a reasonable amount of time.

**Get to bed on time.**
- Turn off all electronics an hour before bedtime, including my phone.
- Finish all my homework an hour before bedtime.
- Get ready for bed (wash up, lay out my clothes for tomorrow) at least 15 minutes before bedtime.
- Do a relaxing activity in bed before I fall asleep (read, draw, listen to music).
- Mark off on my calendar every night I've gotten to bed on time.

**Clean out my backpack once a week.**
- Empty it out onto a table.
- Create three piles: school supplies, papers and notebooks, and things that go back and forth to school.
- Give any important papers to my parent.
- Throw away any garbage.
- Put loose papers in their binders or folders.
- Put everything I need back in.
- Mark off on my calendar every week I've cleaned out my backpack.

**Prepare for school the next day.**
- Check that my homework is done and put into the proper folder.
- Make sure everything I need for tomorrow is in my backpack (books, folders, gym clothes).
- Put my backpack and anything that's going to school in a regular spot by the door.
- Check the weather and make sure my coat, hat and mittens, or umbrella are near the door, ready to go.
- Pick out clothes for the next day and lay them out.
- Set a double alarm to make sure I get up in time.
- Put a to-go breakfast (like a breakfast bar) on the kitchen counter in case I'm running late.
Remember to be patient.
Executive Functioning in Gifted Students
Parent Resources

*Smart but Scattered* book

*Smart but Scattered* online resources

“Executive Functioning Issues: Strategies You Can Try at Home”

“Executive Functioning Issues and Learning: Ways to Help Your Child”

“Teaching Organization”

iOS *Time Tracker* app

Documents: *Backpack checklist*, *homework contract*, *goal calendars*