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Looking for Clues at Home

An education is not confined by school walls. So much learning happens at home, from memorizing multiplication tables to reviewing spelling words to writing book reports to studying for biology exams. So a great deal can be learned about learning at home. Parents can discover a lot about their child's profile as long as they know what to look for.

This chapter focuses on what parents can observe about learning and is structured around specific settings and opportunities:

- *Homework time.* For many families, this time can be difficult for everyone as kids struggle to get through academic work that pushes against their learning weaknesses. The good news is that because students are grappling with such tasks, homework provides numerous windows into a child's profile.
- *Review of work samples.* A collection of student work (such as writing or math) is a treasure trove of clues as long as you know how to sift them out.
- *Free time.* What a kid does at play, at meal time, during conversations, and while completing (or trying to complete) chores around the house can all provide tip-offs about learning strengths and weaknesses.

- We'll also take a look at the issue of *organization,* not just because so many parents are concerned about how their child organizes his work and materials, but also because organization can be a touchstone for a kid's profile.

Most of the chapter's sections include a table listing clues that can be gathered, along with possible connections with a child's learning profile. These tables can serve as quick references for interpreting what you are seeing. Along the way we'll meet more kids like Brady and Cetera, students whose particular learning profiles make aspects of school really challenging. The chapter concludes with the "bottom line," a few parting thoughts related to learning about your child's learning. We'll kick off with some "starting pointers," or initial thoughts to help you frame your thinking during this journey of revealing your child's strengths and weaknesses.

Starting Pointers

1. *Always keep your eyes open* to potential clues about your child's learning. Even when a kid is not doing schoolwork, he may be doing or saying something that can be a window into a strength or weakness.

2. *At the outset, focus just on gathering clues*. Spend time simply observing (or listening, or reviewing work), even though you may be tempted to try to figure out what's happening. This urge is natural and expected, because you desperately want to help your child, but you'll gather more and better clues if your mind is relatively free of biases. Once you have pulled together different kinds of information from various settings, you can start trying to make sense of it (the next section describes the thought process for interpreting clues). You can use the Profile Worksheet (provided in Appendix One) to organize your clues. This worksheet

includes a column for *trouble signs* and another for *positive signs.* The information offered in this chapter will help you place clues in the proper rows for the different neurodevelopmental functions. After placing several clues on the worksheet, you should begin to see patterns emerge, such as difficulties with attention or strengths with memory.

3. *Find a basis for comparison*. All students' skills and abilities progress through time (that's the nature of development), so knowing approximately where a student is on a continuum, using other kids as anchor points, is important. For example, you might observe that your second grader prints with a heavy hand (which can be a tip-off about something called *graphomotor function,* the coordination of movements necessary for controlling a pencil), but you'll need to have a sense of how other second graders handle a pencil in order to say whether the heavy printing is out of the ordinary. Sources of comparison include older siblings (reflect back on how they handled similar tasks), friends, classmates, and teachers. *You don't need to study standards and grade-level expectations to do this!* You just need to have some general markers for reality checks.

4. *Take a good look at contrasts in performance.* One of the most useful kinds of clues you can find is a difference between two of a kid's skills or abilities, because such a difference often reveals a strength on one hand and a weakness on the other. For instance, Nabia is a ninth grader who is having a terrible time with tests. A review of her errors shows that she has particular trouble on open-ended and fill-in-the-blank questions, which require her to pull information out of her memory banks with little help. In contrast, she is far more successful with recognition questions (such as multiple choice), which provide a prompt or cue. This is an important difference to note for Nabia, because it is probably telling us that she can store information in her

long-term memory (which is why she can answer recognition questions) but struggles with retrieving it (which is why free-recall questions are pitfalls for her). Later I point out other types of contrasts to look for and discuss what they might mean.

5. *Make extra effort to look for strengths,* because slipping into the trap of focusing on weaknesses is so easy. Bear in mind that a strength isn't always an off-the-charts talent. Sometimes highlighting a neurodevelopmental function that is operating just as it should is important; for a student who has had a lot of bad experiences with school, hearing that something is working OK may be very good news. Also, some strengths are relative to a student's weaknesses. Nabia's overall long-term memory, for example, might be weak relative to that of other ninth graders, but she should probably know that her ability to store information is a strength relative to her ability to retrieve it.

6. *By "peeking behind" weaknesses, you may uncover strengths.* This book describes many things to look for that will allow you to go below the surface of a learning problem. Many times an unknown asset emerges that had been blanketed by a weakness. Felix is another ninth grader whose parents worry about his study skills. Like Nabia, Felix is able to store material in his long-term memory; the catch is that his attention gets in the way. His attention *processing control* is unreliable, meaning that he glosses over details and is easily distracted; but when he locks onto material, he can remember it very well.

Deciphering the Clues

Before we get into the different clues about learning that you can find at home, let's preview how you'll make sense of them.

Again, you should devote time just to gathering information and not jump to conclusions. Once you've taken a look at your child in different settings and doing various kinds of work, think of the deciphering process as like sorting cards. You'll have a bunch of clues, each of which is like a card. In fact, some people might find it helpful to write each piece of information on an index card and then lay them out on a table in categories representing neurodevelopmental areas.

> Chapters One and Three are about translating clues (such as observations made during homework time) into neurodevelopmental areas (such as attention and memory). Chapters Two and Four describe strategies for addressing those neurodevelopmental areas.

The process is about taking the information you've gathered and organizing it into a framework that allows you to look at patterns. Figure 1.1. lists (on the left side) a lot of observations that were made about a kid's writing that were then sorted into three neurodevelopmental areas (on the right side). Once the sorting process is complete, the evidence of a child's strengths and weaknesses is laid out. The following sections contain tables that display possible connections between clues. These tables (as well as the Atlas of Neurodevelopmental Terms provided in Appendix Three) will help you sort your cards, so to speak.

Making Discoveries During Homework Time

Many parents of struggling students describe homework time as a challenging, frustrating experience for the entire family: the kid is forced to do work he has a very hard time with (rather than playing or doing more enjoyable things), the parent feels like a

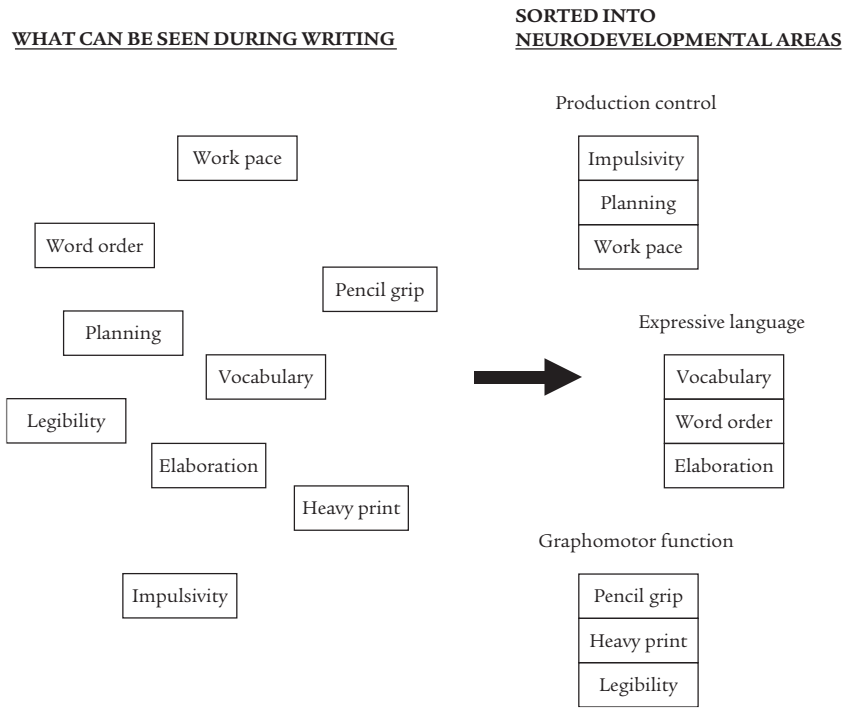


Figure 1.1 *Interpreting Information About Learning*

drill sergeant, siblings may be caught in the crossfire, and everyone feels like their worst qualities are exposed. In the face of these uphill battles, being an objective observer of clues is critical. Many things can be done to make homework time more productive and calm, but the first step is to get a handle on the underlying problems. (The next chapter includes strategies for homework time based on the neurodevelopmental functions that might be involved.)

The good news is that homework is a great opportunity to find clues about learning, not only because the student is grappling with academic tasks but also because homework time has some key differences from the classroom setting: the student is alone, he doesn't have the support of a teacher readily available, and

the time may be more concentrated on work (whereas classroom time is consumed by transitions, giving instructions, cleaning up materials, and so on). Here we'll cover both what to watch for during homework time and clues you can pick up on by listening.

In the course of describing the various clues you can discover at home, I mention several functions (in *italics*) that are described in more detail in the Atlas of Neurodevelopmental Terms.

Handling a Pencil

You can start making important observations about your child's profile the moment he picks up a pencil. For a lot of students, handwriting is a huge barrier to academic productivity. Pencil control, legibility, hand fatigue, and handwriting speed can all prevent good ideas and knowledge from making it onto the paper. The way your child holds a pencil is the first clue to graphomotor function. The best way to hold a pencil is with what is called a *tripod grip,* formed by the thumb and middle fingers (which make most of the movements to form letters) and the forefinger (which regulates pressure against the paper), with the pencil at about a forty-five-degree angle to the writing surface.

Pencil grips can go awry in a lot of ways, such as wrapping the thumb around the forefinger and middle finger, so that the forefinger is not stabilizing the pencil, or excessively hooking the wrist. Figure 1.2 shows photographs of pencil grips, including a tripod grip and three troublesome grips. When we write, the nerves in the hand and wrist send signals back to the brain about where the pencil is in the letter formation process. If these signals are weak or get crossed, then relying heavily on sight to

Tripod grip (ideal). Thumb and middle finger control most of the pencil movement at their middle joints, and the forefinger regulates pressure. The pencil is at about a 45-degree angle to the writing surface.

Thumb overwrap. Thumb is wrapped around the joints of the forefinger and middle finger, making it hard to move them. As a result, the pencil must be moved mostly with the wrist; little movements are harder, but the wrist gives feedback on pencil position.

Forefinger out of action. Forefinger doesn't stabilize the pencil as it should. The pencil is perpendicular to the writing surface. As a result, too many joints are needed to move the pencil.

Hooked wrist. Wrist is excessively hooked and the pencil is held very tightly (with the end of the forefinger very flexed). The hand may stiffen and tire quickly when writing.

Figure 1.2 *Handwriting Grips*

photography by Patti Donnelly

monitor the pencil tip may be necessary. So if your child really needs to watch what the tip of his pencil is doing, that could be a trouble sign. Later in this chapter we'll cover a set of clues related to what handwritten work looks like.

Planning and Organizing

How a kid goes about doing his homework can be very revealing. A lot of parents are dismayed when their child seems to leap right into tasks without first contemplating the best course of action. Courtney, a sixth grader, fits this bill. Her mother describes her as a "bull in a china shop" when it comes to homework (and incidentally, most other times when a methodical approach is called for as well). When Courtney gets to a math word problem, she seems to start scribbling calculations before she even finishes reading it. Sometimes she answers almost all of the questions in social studies assignments before realizing that the directions wanted her to do something else. But above all, her writing is a disaster. The notion of starting with an outline is totally alien to Courtney, who would much rather just get to writing; as a result, many of her great ideas never make it to the page or get hidden in a disorganized stream of sentences.

This book describes attention in a way that is new to many people. Rather than thinking of attention as part of a diagnosis (namely attention deficit hyperactivity disorder), it can be more useful to view it as a set of brain functions (production control, processing control, and mental energy), each of which oversees different aspects of working and thinking. This model of attention was developed by Dr. Mel Levine.

Courtney has a weakness in an aspect of her attention called *production control*, which is like the brain's dashboard; her mind doesn't have a reliable speedometer, meaning that she jumps into tasks too quickly, without first coming up with good plans. Dashboards also provide many signals (such as a low-fuel light and a door-ajar signal) to let you know how well things are working, but Courtney's production control doesn't monitor her work very effectively. Her mother gets exasperated by all of the "careless" mistakes she makes in her homework. For example, she might miscalculate in math or misspell a word, but when prompted to take a second look, she readily finds these kinds of errors and fixes them.

Staying on Task

Tate is a fourth grader and his dad says that homework "takes *forever* to get done." The reason? Tate is very susceptible to distractions and daydreaming due to his attention processing control. His dad frequently reels him back in with little reminders like "Stick with it, Tate" or "Come on back, dude!" Getting homework done in a reasonable amount of time usually requires great effort to stay focused on the task at hand.

Everyone, including adults, experiences difficulty with concentration from time to time. Even if you're working in a place with few distracting sights and sounds, your thoughts may wander like Tate's. For some people, processing control does not do a sufficient job of resisting "mind trips" and avoiding distractions. If given a choice between finishing homework and spending time on recreational activities, most kids would choose the latter; but kids with weak processing control are pulled even more strongly than other kids toward fun stuff and away from work.

A kid can have a hard time staying on task for reasons other than weak attention, however. *Active working memory* is what we use to mentally juggle or manipulate information.

> Reverse the sequence of digits in your phone number without using a pencil and paper. You've just used your active working memory.

Monika frequently gets lost in the middle of homework tasks. As a seventh grader, much of her work involves multiple steps (such as when solving a math problem) or numerous components that have to be attended to simultaneously (such as all the aspects of writing a book report). In other words, she has to handle a lot of moving parts, and her parents see her losing track of a lot of them. So she may get lost in the middle of a math computation and complain that she is confused about what to do next.

Keeping the Energy Up

Thinking, like physical activity, requires energy. Homework can really tap into a kid's mental fuel tank, which may be drained after a long day of school. So, showing a little "brain drain" during homework is natural; but a pattern of excessive fatigue, night in and night out, may signal problems with *mental energy*, a third aspect of attention. The most taxing academic work is writing, because it requires so many types of thinking (such as vocabulary, spelling, and idea generation) for a sustained period. Therefore, a good time to observe how well a kid's mental energy is holding up is during written work. Also, a kid who is extremely drawn to fun activities, which aren't nearly as draining as homework, may have unreliable mental energy.

Information Literacy

Most parents would agree that their child's education experience is much different than their own was. One of the biggest

differences is how technology is now folded into academics. Practically every classroom and most homes have at least one computer. Students use computers for all types of school activities, including word processing their writing, building slide show presentations, and playing learning games (such as for math facts or phonics). With most computers connected to the Internet, students have the capacity to access an incredible volume and variety of content. *Information literacy*, or the skills used to access (with search engines) and evaluate digital information, has emerged as an academic skill that is as important as the traditional skill areas of reading, writing, and mathematics.

Information literacy can be undermined by neurodevelopmental weaknesses just like the traditional skills can. Closely watching how a kid engages with digital information can provide more clues about his learning. Several procedures go into using a search engine, for example, such as inputting information in different fields, setting options, and reviewing output pages. Trouble recalling how to use all of a search engine's features may suggest a long-term memory weakness.

Part of the art of conducting an online search is selecting the best terms to enter into the search engine. For instance, if we want to find material about *sharks* we probably would want to enter some additional terms such as *marine* or *predator* so that we don't pull up sites related to the San Jose Sharks hockey team. (We could also use a "do not include" field to rule out unwanted results.) A kid who struggles with these nuances of online searching may have uneven logic, reasoning, and understanding of concepts.

Once we get the search results, the filtering process begins. If a kid is easily overwhelmed by an avalanche of hits, he may have unreliable processing control, which helps to prioritize details. After clicking on a link to a site that seems promising, we use processing control to review the material quickly, as well as *receptive language* to interpret words, sentences, and longer pieces of language.

Finally, oversurfing, or jumping from one site to another using intriguing links can be very tempting. In fact, Web sites with advertising are designed to lure attention with flashing banners, prominent links, and pop-ups. Kids with weak processing control may have a hard time resisting these forms of technological distraction.

Answering Homework Questions

"Homework consultant" can become a big parent role, especially when it comes to fielding questions about schoolwork. "Who was the third U.S. president?" "What's a prime number?" "What is the capital of Nevada?" When a kid can't come up with an answer on her own, she will often turn to Mom or Dad as de facto encyclopedia. Patterns may emerge in the kinds of questions that are particularly vexing. Earlier in this chapter you met Nabia, a ninth grader who has a lot more trouble with open-ended test questions than with recognition questions. A similar contrast could show up during homework. A kid who asks for help with open-ended, free-recall questions (like the examples provided earlier) more often than with recognition questions may have trouble with *long-term memory access*. On the other hand, a kid who seems to ask for help with recognition questions (such as "Was the first U.S. President Washington, Jefferson, Adams, or Monroe?") just as often as with open-ended questions probably has trouble with *long-term memory storage*, because the information didn't get put into memory banks, so hinting doesn't help.

How-to Questions. Kids often fire other kinds of questions at parents when doing their homework, and each type can provide clues about their learning. Two such question categories are *how-to* and *what's up? How-to* questions relate to the various

procedures and rules that kids need to access when doing their homework. Asking these questions is a tip-off that long-term memory isn't working well, especially if the student can readily use the procedure or rule once prompted (which suggests he understands it). Examples include the following:

- How do I borrow a number?
- How do you spell *summary* when there's more than one summary?
- Do you put the period before or after the quotation mark at the end of the sentence?
- How would I solve for *n* in this problem?

Remember that we're talking about the questions kids ask during homework, not about the answers you may or may not be able to give. The important thing is to listen carefully and let the questions teach you about your child's learning.

Sometimes, however, how-to questions result from something other than memory problems, such as how well the student can reason through a problem. *Applied reasoning* refers to the use of logic to solve problems and tackle challenging situations. A student who asks a lot of deep how-to questions, such as "How would I figure out the amount of water in this canister if this cube is submerged in it?" or "How could I show that climate change is affecting this habitat?" likely has shaky reasoning.

What's-up Questions. These questions often reveal shaky understanding of the material and of important concepts. They are often accompanied by complaints such as "I don't get it!" or pleas such as "Explain this to me." What's-up questions take

many forms, but they all boil down to a less-than-firm grasp of a concept. A concept is a set of critical features of a group of ideas or objects that define that group, determine group membership, and connect it to other groups. Some of the many concepts taught in school are freedom of speech, integers, and symbiosis. Here are some example questions that relate to concepts:

- What's the difference between a cold-blooded animal and a warm-blooded animal?
- What does *extremism* mean?
- Can I just add the tops and bottoms of these two fractions?
- Aren't a phrase and a clause pretty much the same thing?

Table 1.1 lists the clues discussed in this section, followed by their possible neurodevelopmental connections. The Atlas of Neurodevelopmental Terms provided in Appendix Three goes in the opposite direction (lists neurodevelopmental functions followed by their potential clues). The Glossary of Academic Skills located in Appendix Four describes major academic areas (such as math reasoning) along with the primary functions involved in them. You'll notice that in Table 1.1, and in similar tables that follow, up to three possible connections are listed for each clue. The lists are not exhaustive; other potential explanations for a learning phenomenon may exist. The connections listed are the usual suspects, so to speak, or the top contenders.

Locating Clues in Work Samples

The previous section covered what you can learn by watching and listening to your child do homework. This section focuses on the numerous clues that can be gathered by taking a good look at work products, at what is done both at school and at home. When observing and listening to your child you're like an

Table 1.1 *Making Sense of Clues Gathered During Homework Time*

CLUES	POSSIBLE NEURODEVELOPMENTAL CONNECTIONS	COMMENTS
Pencil grip that isn't tripod	Graphomotor function	See Figure 1.2 for examples
Watching pencil intently	Graphomotor function	May happen because clear signals aren't being sent from the hand to the brain
Jumping into a task too quickly	Production control (attention)	Impulsive work style may rely more on trial and error than on thoughtful planning
Making little, avoidable, or "careless" mistakes	Production control (attention)	When prompted, the student can easily correct the errors
Wandering mind	Processing control (attention)	Mind trips and day-dreaming can happen even without any obvious distractions
Getting lost in the middle of a task	Active working memory	Usually more of a problem when there are a lot of "moving parts" to keep track of
Extremely pulled to nonacademic activities	Processing control (attention); Mental energy (attention)	Fun activities can be very distracting and are far less mentally draining than homework
Excessive mental fatigue	Mental energy (attention)	Can be a particular problem during writing
Not recalling how to use a search engine, including all its features	Long-term memory storage; Long-term memory access	Search engines have procedures for entering criteria and reading the output
Picking ineffective search engine words	Applied reasoning; Conceptual understanding	Trouble with the art of conducting an online search

CLUES	POSSIBLE NEURODEVELOPMENTAL CONNECTIONS	COMMENTS
Trouble prioritizing search engine results	Processing control (attention); Receptive language	Student may seem overwhelmed by long list of search results; sites have to be quickly reviewed
Oversurfing on the Internet	Processing control (attention)	Many Web sites contain numerous distractions (such as links, banners, and pop-ups)
Hard time with open-ended questions	Long-term memory access	Better with recognition questions, which provide prompts to help with access
Trouble with recognition *and* open-ended questions	Long-term memory storage	Recognition cues (such as multiple choices) prompt access, so the information probably wasn't stored
Asking lots of *How-to* questions	Long-term memory storage; Long-term memory access; Applied reasoning	Procedures and rules may not be stored or readily accessed; could signal difficulty using logic
Asking lots of *what's-up* questions	Conceptual understanding	These questions go beyond memory problems and stem from not "getting it"

anthropologist in the field, on the lookout for revealing behaviors and statements. When reviewing work samples, you're like an archaeologist on a dig, and perhaps the most valuable artifact you can discover is a piece of writing, which you can review for its visual appearance as well as its content.

Handwriting Evidence

Earlier in this chapter I touched on graphomotor function and how some students need to watch the pencil tip very closely because inadequate feedback is sent from the hand back to the brain.

Another way to boost a weak feedback signal is to press really hard on the paper with the pencil to get a stronger sensation of where the tip is during letter formation. So, consistent use of heavy printing is a sign of weak graphomotor function.

Another thing to look for is unusual letter shapes. When graphomotor function is operating reliably, the brain executes a series of patterned movements to recreate a stored image of how a letter should look; but for many kids and adults (myself included!) these movements aren't locked in enough for letters to be shaped correctly every time. The brain is like a computer and the hand is the printer; when graphomotor function is weak, clear signals aren't sent from the brain to the hand to direct the movements needed to shape the letters correctly. As a result, handwriting will contain letters formed in unorthodox ways.

Figure 1.3 contains handwriting samples for students of different ages who experience weak graphomotor function. Each student was asked simply to write a particular letter in a box on a row. Notice how the seven-year-old formed the *a* by combining two different shapes—a circle and a short line—rather than using one motion; the pencil actually lifted off the paper in mid-motion. The seven-year-old also placed letters all over the boxes rather than line them up horizontally. The eight-year-old formed a *w* instead

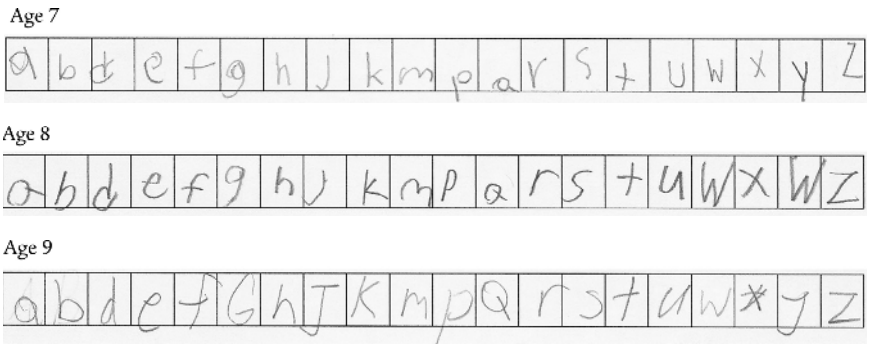


Figure 1.3 *Some Irregular-Looking Letters*

of a *y* in the second box from the right. Both the eight- and nine-year-old mixed upper and lower case (all students were asked to use lower case). Even handwriting that is relatively legible may contain signs of unusual letter formation. For example, a *b* or a *d* may be made with single motions from the top to the bottom and then curving up to complete a loop. Remember that no single clue (such as a different way of forming a letter) is evidence of a weak neurodevelopmental function. You want to gather a lot of information and then look for patterns or recurring themes.

In addition to considering how individual letters look, you can pull the lens back and look at how visually organized the handwriting is on the page. Weak graphomotor function can lead to irregular spacing between letters and words, to the point that determining where one word stops and another starts is very hard. Even on lined paper the sentences may veer off from horizontal, and the margins may stray from vertical. Sometimes the writing can get crowded onto the right side of the page, as words get pushed together rather than moved to the next line. Figure 1.4 shows a sample of this kind of visually disorganized writing.

Spelling Patterns

You can use spelling to tell a lot about a kid's profile by going beyond whether the word is spelled correctly or not and considering the pattern of spelling errors. Many neurodevelopmental functions are needed for good spelling, which is another way of saying that spelling is a complex task. Thus spelling can go awry

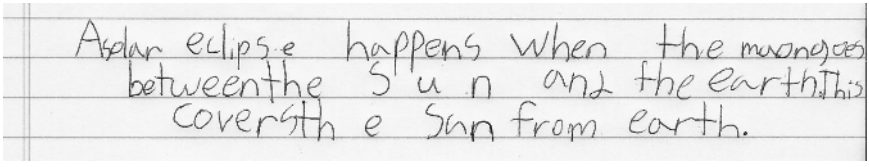


Figure 1.4 *Visually Disorganized Writing*

for several reasons, but let's focus on two major types of spelling mistakes. *Calculate* can be misspelled in a lot of different ways, but one way is *calkyoulayt,* which looks very different from the correct spelling but still *sounds* right. Another misspelling is *calcutate,* which looks pretty close but *sounds* wrong.

> A source of frustration for many spellers (for me, anyway) is how many English words are spelled in ways that don't make sense if you focus on how they sound. Put differently, you have to store a lot of mental snapshots in order to spell such words as *Wednesday.* Otherwise, it would be easy to sound out every hard word (and *Wednesday* would be *Wenzday*).

In this book's introduction you met Brady, a second grader who has a hard time sorting out word sounds, such as /f/ in *leaf,* which means he also struggles with connecting sounds with letters (such as *ph* or *gh*). Brady's weakness is with an aspect of language called *phonological processing.* Because his mind doesn't handle word sounds very well, he is susceptible to spelling mistakes like *calcutate* that, when you try to say them out loud, don't sound right. On the other hand, if you see a lot of spelling mistakes like *calkyoulayt,* phonological processing is probably OK because the right word sounds are there. The problem instead is probably that not enough image files for spelling words have been placed in the brain's hard drive. In Table 1.2, the second column contains more examples of this type of long-term memory spelling error while the third column lists phonological errors for the same words.

Writing Rules of the Road

Correct spellings aren't the only things we need to upload into our mental library of visual files for writing. *Writing mechanics* are

Table 1.2 *Examples of Two Kinds of Spelling Errors*

CORRECT SPELLING	SOUNDS CLOSE BUT LOOKS WRONG	LOOKS CLOSE BUT SOUNDS WRONG
cat	kat	cate
badge	baj	badege
laughter	laffter	laughther
swamp	sueomp	somp
answer	anser	anwser
groceries	groshereez	grocercies
catalyst	catulist	catylast

all the rules for putting words on the page that don't necessarily need to be followed when speaking. For example, when writing, we have to capitalize the first word in sentences, separate list items with commas, set off phrases with commas, put quotation marks around spoken statements, use apostrophes to indicate a contraction or possession, and end with punctuation. When speaking, we don't have to follow these rules; we can just let the words flow.

Mechanics rules can be mentally stored as audio files, so to speak—for example, a verbal reminder that sentence-ending punctuation always goes inside the closing quotation mark. But for many learners, these rules take the form of images; we visualize where commas, quotation marks, and apostrophes should go. So, lots of the kinds of written mechanics errors listed in Table 1.3 can indicate weakness with long-term memory or *spatial ordering* (which handles the mind's visual operations) or both.

Writing Vocabulary

Heaviness of print, letter formation, visual organization, spelling, and mechanics are all clues related to the appearance of written work. Now let's delve into what can be learned from the content of writing. One of the first things to consider is word

Table 1.3 *Examples of Writing Mechanics Errors*

INCORRECT MECHANICS	ERROR PATTERN	CORRECT MECHANICS
the water was very cold	Initial capitalization; ending punctuation	The water was very cold.
We need to buy milk eggs and butter.	Commas separating list items	We need to buy milk, eggs, and butter.
Mr. Diaz my math teacher is really nice.	Commas marking a phrase	Mr. Diaz, my math teacher, is really nice.
She said "I have done so much today".	Punctuation with quotation marks	She said, "I have done so much today."
Hes going to carry Camis backpack.	Apostrophes—possessive and contraction	He's going to carry Cami's backpack.

usage, or *semantics* (an aspect of *expressive language*). Writing that contains a lot of misused words, such as using *interval* when *integral* would be the correct choice, can indicate a semantic problem. Another sign of trouble is writing that is very sparse in terms of vocabulary; this kind of writing lacks many vivid, interesting words and may include a lot of nondescript, filler words such as *things* and *stuff*. As I mentioned in one of the "starting pointers" for this chapter, you need to gauge your observations by the age of the student. So, if you have a sense that your child, for a fourth grader, doesn't exercise good word usage in his writing, you have reason to suspect a weakness with semantics.

Comparing Writing and Speaking

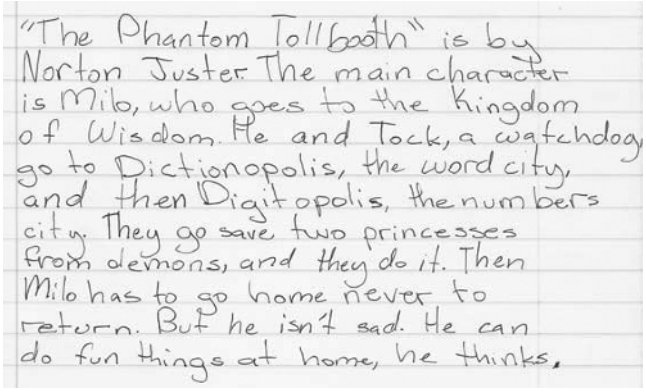
Another of this chapter's starting pointers was to take a good look at contrasts in performance, and an excellent example of that is comparing a kid's spoken language and written language. Hei is in the fifth grade and everyone is perplexed by how brief and simple her writing is compared to her amazing ability to communicate when speaking. Take a look at Table 1.4, which

Table 1.4 *Contrast Between Spoken Language and Written Output*

ORAL DESCRIPTION OF FAVORITE BOOK

The Phantom Tollbooth is about Milo, who is always so bored. One day someone sends him a tollbooth that he sets up in his room. He drives through it in his toy car and suddenly he's in this place called the Kingdom of Wisdom. Pretty soon he meets Tock, a watchdog who actually has a big clock in his side. They go to Dictionopolis, where all the letters in the world are grown on trees. Dictionopolis is ruled by King Azaz the Unabridged, and he doesn't get along with his brother, the Mathemagician, who rules the other big city, Digitolopolis. They banished the princesses Rhyme and Reason because they couldn't settle the argument over whether letters or numbers were more important. Without the princesses, the Kingdom is in trouble, so Milo and Tock agree to rescue them from the Castle in the Air, way above the Mountains of Ignorance. And this big talking beetle, Humbug, goes along with them. On the way they go through the Forest of Sight and the Valley of Sound. Everywhere they go they meet different people who need help without Rhyme and Reason. In Digitopolis they meet the Mathemagician and go to the Numbers Mine, where the world's numbers are dug up like jewels. The Mathemagician takes them to the Mountains of Ignorance, which is a scary place with lots of weird demons. But Milo and his friends defeat the demons and get up to the Castle in the Air. But the demons get really mad and chop off the bottom of the stairs to the castle, so they all fly down on Tock—because time flies! The demons chase them but they're saved by the brothers and their armies. After that Milo has to go home and the next day he really wants to go back to the Kingdom, but the tollbooth is gone. At first Milo is sad he won't see his friends there, but then he realizes he can discover a lot at home.

WRITTEN DESCRIPTION OF FAVORITE BOOK


"The Phantom Tollbooth" is by Norton Juster. The main character is Milo, who goes to the Kingdom of Wisdom. He and Tock, a watchdog, go to Dictionopolis, the word city, and then Digitopolis, the numbers city. They go save two princesses from demons, and they do it. Then Milo has to go home never to return. But he isn't sad. He can do fun things at home, he thinks.

displays Hei's impressive oral summary of her favorite book, *The Phantom Tollbooth* by Norman Juster, with her sparsely written summary of the same book.

As you can see from her oral description, Hei remembers a great deal about *The Phantom Tollbooth,* she seems to really get the book, and she expresses herself quite well. Her oral output indicates that she has very good expressive language. But if you were to look only at her writing, which is so much shorter and simpler, you would get a vastly different impression of her thinking and language. Clearly something is holding back her language when she has to use a pencil.

When spoken language is more elaborate than written language, the first culprit to consider is graphomotor function. As I described earlier, for kids like Hei the computer is working just fine; it just might not have reliable connections to the printer. Another question to ask is whether Hei has enough mental energy for writing. Again, writing is an extremely demanding task, and she may not have enough fuel in the tank to get her great expressive language onto the page; put differently, she might be taking a lot of shortcuts because she has such low gas mileage. Finally, writing requires a ton of a certain kind of memory called *active working memory*, which is like the brain's RAM in that we hold information there while we're working with it. So many things have to be mentally juggled when we're writing—such as where to put commas, how to spell words, and when to start a new paragraph—that some elements may get dropped if we don't have enough active working memory capacity to hold onto it all.

When talking about *The Phantom Tollbooth,* Hei can just unleash her wonderful, expressive language. But when writing about her favorite book, her graphomotor function, mental energy, or active working memory (or some combination thereof) is likely holding her back. Hei's plight is pretty common

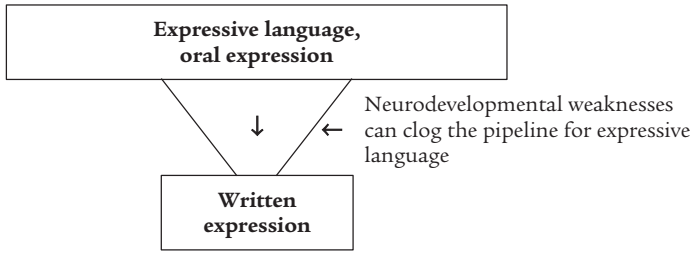


Figure 1.5 *Expressive Language Getting Clogged When Writing*

and can be visualized as her expressive language getting clogged on the way to the page (see Figure 1.5).

A less common but equally confounding pattern is that of the student whose writing is actually longer and more sophisticated than spoken language. Some students' expressive language can generate good output but only at a relatively slow rate. You might even notice this when talking to them in that they may be taking an extra moment to respond, speaking methodically, and pausing frequently. For such students, writing is actually a better way to communicate because writing is a much slower process than speaking. In other words, the pace of writing may better suit some students' slow pace of expressive language.

Many parents face another obstacle when trying to help their children with school: their own anxieties about learning. This can be especially true for math, which is not a fun subject for a lot of people. If you sense yourself resisting looking into your child's math skills, do your best to set aside your own issues about math.

Math Clues

Let's now turn to math and some of the important clues you can unearth in your child's math work. Math is a complicated

subject with many components. It is also very cumulative, that is, what is learned in the fall is very important for what has to be mastered in the spring. Mistakes in math can be grouped into three general categories, and each reveals something important about learning.

Hard-Drive Errors. These mistakes relate to problems with memory, and math requires a lot of hard-drive capacity. For instance, students in the elementary grades are expected to memorize dozens of math facts for addition, subtraction, multiplication, and division. Some kids simply haven't uploaded all the facts, so they respond to math fact questions (such as "What's 6 times 7?") inaccurately, if at all. Sometimes, though, a student can generate the right response but needs extra time to do so. If you see this pattern, ask your child how he came up with the answer, because often there was a clever calculation involved (such as "I know 6 times 6 is 36, so if I count up from 36—37, 38, 39, 40, 41, 42—then the answer is 42!"). Now, the student who figures out that 6 times 7 equals 42 this way certainly is a nice strategic thinker, but the fact that he still struggles to recall the correct answer tells us something about his memory.

In addition to recalling facts, students have to store and retrieve numerous *math procedures*, such as how to borrow when subtracting, how to simplify a fraction, and how to balance an algebraic equation. Most math procedures are multistep, and students with memory difficulties have trouble knowing where to start with a problem, or they mess up midstream (such as not shifting the decimal after correctly multiplying the numerals).

Not-Getting-It Errors. Whereas a student who shows a lot of hard-drive errors may actually understand the important ideas behind math, making a lot of not-getting-it errors reveals a shaky conceptual foundation. Finn is a fourth grader who used

to always seem to hold his own in math, but the introduction of word problems is throwing him for a loop. He can perform calculations accurately, but he is stymied by word problems, even if they require the same calculations he can carry out in isolation. (See Table 1.5 for some examples.)

Finn's difficulty is that he has a hard time processing the details in word problems, some of which are there only to distract from the important details; he readily falls for these red herrings. Word problems also involve a distinct set of vocabulary terms (such as words that are tip-offs to multiply or divide), and they may include some curve balls in terms of sentence structure (such as listing first the final piece of information you need to solve the problem). So, despite good memory for math procedures, Finn doesn't get word problems very well because of details and complexities of language.

Another kind of not-getting-it math error is having trouble making sense of visual information. Of all the core academic subjects (reading, writing, and math), math is the most challenging

Table 1.5 *Isolated Math Operations vs. Math Word Problems*

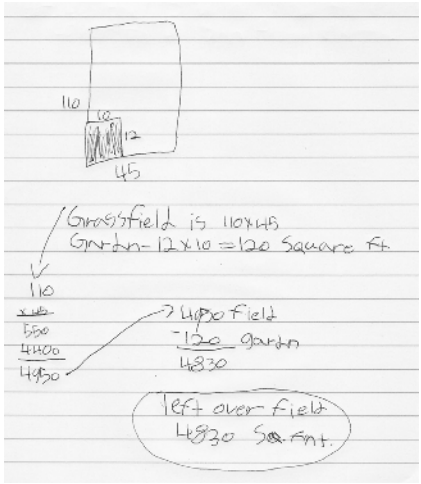
MATH OPERATION(S)	MATH WORD PROBLEM
5 x 7 = 35	You need to set up chairs for a group of at least 30 people, and you need 5 rows. If you put 7 chairs in each row, how many chairs do you need?
3 x 5 = 15 15 + 15 = 30 15 + 30 = 45	Jody earns $15 each time she mows the lawn and $5 for washing a window. How much will she earn washing 3 windows and mowing the lawn twice?
48 ÷ 12 = 4 4 x 2/3 = 8/3 8/3 = 2 2/3	A cookie recipe calls for 2/3 of a cup of sugar to bake a batch of 12 cookies. You want to bake 48 cookies for a party; how much sugar will you need?

in terms of bombarding kids with abstract visual material. The bombardment starts in the elementary grades with basic shapes and representations of fractions. In the late elementary and middle grades students have to start interpreting charts and graphs. Plus, in the middle grades kids often have to deal with word problems that require diagramming or visualizing how quantities compare (usually via subtraction) or are transformed (with addition, multiplication, division, or some combination). In the upper grades, math students have to handle sophisticated geometric visuals such as angles and polygons, as well as abstract concepts such as tangents and cosines. A pattern of errors in your child's math related to visual information may signal spatial ordering as the culprit.

Finally, when looking closely at math work you might see evidence of one other example of a not-getting-it error: a haphazard approach to problems, that is, an approach that is more trial-and-error than strategic. This pattern often stems from a weakness in the child's attention production control. What you will see is work that jumps right to a calculation or an attempt at an answer. In contrast, a child who uses good planning in math will display stages, such as first drawing a diagram, then setting up equations, performing calculations, and finally checking answers. Figure 1.6 displays an example of planned math work and an example of unplanned math work, both using the same problem. In the planned example, the student started with a diagram (not to scale, but sufficient to visualize the problem's key elements), labeled and performed initial calculations (the area of the field and of the garden), and ultimately arrived at the correct solution; the arrows reveal the order in which the student proceeded. In the unplanned math work, the student just started calculating using the numbers provided in the problem; note that although the calculations were performed correctly, they weren't the right calculations for this problem.

Mr. Vasquez wants to convert some of his backyard into a garden. His yard is 110 feet long and 45 feet wide. If the dimensions of his garden are 12 feet by 10 feet, how much of his yard will be left?

Planned Work



Unplanned Work

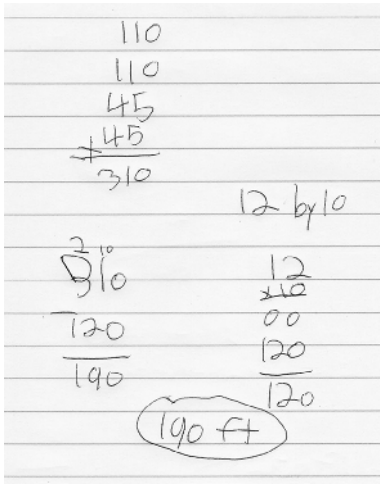


Figure 1.6 *Planned and Unplanned Math Work*

In-the-Details Errors. Parents and teachers often pull their hair out when they see these kinds of mistakes because they are so easily corrected. *If he was just more careful he'd get every one of those problems right!* Sound familiar? In-the-details errors usually happen because the student skims over the problem and assumes it's a minus sign instead of a plus sign, for example. He might solve a word problem, setting it up correctly and performing every calculation properly, but still get it wrong because he used 325 instead of 375. He might also veer toward the nonessential or distracting details in word problems rather than zeroing in on the important information. All of these examples are evidence of problematic attention (usually processing control, though inconsistent self-correction can also be a sign of production control weakness). An in-the-details error that can be really

obvious in math is visually disorganized work. For instance, not lining up numerals in columns can lead to miscalculations (see Figure 1.7 for an example). The recurring theme with in-the-detail errors is that the student has good memory for math facts and procedures, he understands concepts and can use logical reasoning, but little mistakes are derailing him. Put simply, the devil is in the details.

Dealing with Q and A

Now that we've covered handwriting, spelling, written expression, and math, we'll conclude by discussing the clues to look for in homework in general. The format of many homework assignments is "Q and A," or question and answer. So, when looking through your child's homework for science, social studies, language arts, foreign language, history, and so on, consider the kinds of questions your child has to answer. Questions can be categorized in a couple of ways. First, they can be divided into recognition and open-ended questions. Recognition questions actually display the correct answer in some way, but that answer is mixed in with some wrong answers. Examples include multiple-choice, true-false, and matching questions. The student has to look through all of the possible answers and *recognize* which is the correct one. Open-ended questions don't display the correct answer, meaning that the student doesn't get a cue to help

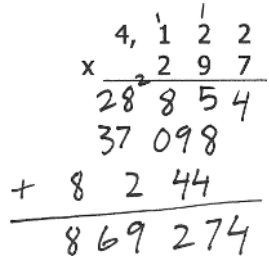


Figure 1.7 *Visually Disorganized Math Work*

access the information. Here are a few examples of open-ended questions, including fill-in-the-blank:

- Which U.S. president advocated for the League of Nations?
- A _____ is a polygon with 6 sides.
- Define *hydrotropism:* _____
- Name the 3 primary colors.

In addition to homework assignments, include tests and quizzes your child has brought home in your review of work samples.

If you see that your child tends to have more trouble with open-ended questions than with recognition questions, you need to think about long-term memory access as a problem. But if your child does better with recognition questions, then you have evidence that he has stored information in memory; he just has trouble accessing that information without the prompts that recognition questions provide. Nabia, the ninth grader described earlier in this chapter, shows this pattern on her test performance. Trouble with both open-ended and recognition questions can mean problems with long-term memory storage; the information isn't getting uploaded into the brain's hard drive.

Now, some kids actually perform better with open-ended questions than with recognition questions. When this is the case, the difficulty is usually in discriminating between the potential answers and pinpointing the right one; the student might be easily swayed by an intriguing wrong answer, have a hard time deciding between two very similar answers (such as multiple-choice options), or impulsively pick an incorrect response without carefully reviewing all the options. Trouble with recognition questions coupled with better performance on open-ended questions

often relates to attention. Even though the information is available in long-term memory (which is why open-ended questions can be answered), the student has trouble processing the details in the recognition questions or has a hard time controlling impulses to jump toward incorrect responses.

Questions can also be sorted according to whether they require memory (such as the factual questions just presented) or *thinking*. Keep an eye out for better performance with memory questions than with thought questions, which push the student to use reasoning and understand concepts. These kinds of questions tap *conceptual understanding* and applied reasoning. The opposite pattern—doing better with thought questions than with memory questions—suggests difficulty with long-term memory and good higher thinking. Here are some examples of thought questions:

- How could some of the problems that America faced during Reconstruction have been avoided?
- What are some things Tony could do to boost sales at his lemonade stand?
- Describe the advantages and disadvantages of biodiesel.
- Compare and contrast socialism and capitalism.
- What might the Mississippi River represent as a symbol (in the *Adventures of Huckleberry Finn*)?
- How do you think Marie felt about missing the last two weeks of school?
- Would a polar bear feel okay in a desert? Why or why not?

Table 1.6 lists the clues that can be revealed in work samples, along with potential neurodevelopmental connections.

Detective Work During Down Time

Looking for clues about your child's learning during homework time and by reviewing work samples makes sense because these

Table 1.6 *Making Sense of Clues Gathered from Work Samples*

CLUES	POSSIBLE NEURODEVELOPMENTAL CONNECTIONS	COMMENTS
Heavy print	Graphomotor function	May happen because clear signals aren't being sent from the hand to the brain
Irregular-looking letters	Graphomotor function	See Figure 1.3 for examples
Visually disorganized writing	Graphomotor function	Check spacing between letters and words, and alignment of margins; see Figure 1.4 for an example
Spelling that sounds close but looks wrong (such as *laffter* for *laughter*)	Long-term memory storage; Long-term memory access	Phonological processing is probably OK, because word sounds are accurate; see Table 1.2
Spelling that looks close but sounds wrong (such as *laughther* for *laughter*)	Phonological processing (language)	Word sounds aren't accurate and student relies on what the word sort of looks like; see Table 1.2
Errors with writing mechanics, such as where to put commas	Long-term memory storage; Long-term memory access; Spatial ordering	Some rules are verbal and some are committed to memory in a visual format; see Table 1.3
Vocabulary sparse in written work	Semantics (language)	May find numerous uses of nonspecific terms such as *things* and *stuff*
Writing that is shorter and simpler than spoken language	Graphomotor function; Mental energy (attention); Active working memory	Good expressive language may be stifled by weaknesses in other areas
Writing that is longer and clearer than spoken language	Expressive language	Language likely operates well in all aspects except rate; student does better with the slower pace of writing

(Continued)

Table 1.6 *(Continued)*

CLUES	POSSIBLE NEURODEVELOPMENTAL CONNECTIONS	COMMENTS
Math fact recall that is inaccurate or incomplete	Long-term memory storage; Long-term memory access	Student may give wrong answers or say, "I don't know"
Math fact recall that is accurate but not automatic	Long-term memory access	Student will give correct answers but will take a moment to generate them
Not following math procedures accurately	Long-term memory storage; Long-term memory access; Active working memory	Even if procedures are stored in memory banks, pulling them out and following them can be hard
Confused by math word problems	Processing control (attention); Semantics (language); Syntax (language)	Difficulty determining what operation to use to solve the problem
Confused by math visuals	Spatial ordering	Math visuals include diagrams, graphs, angles, and geometric shapes
Haphazard approach to solving math problems	Production control (attention)	Jumps right in instead of first thinking about the best way to solve the problem
Misreading details in math problems (such as adding in a subtraction problem)	Processing control (attention)	May be distracted by unimportant details in word problems
Few self-corrections	Production control (attention)	Very few or no erasures; when prompted, the student can easily correct the errors
Visually disorganized math work	Graphomotor function; Spatial ordering	See Figure 1.7 for an example
Harder time with open-ended questions	Long-term memory access	Better with recognition questions, which provide prompts to help with access

CLUES	POSSIBLE NEURODEVELOPMENTAL CONNECTIONS	COMMENTS
Trouble with recognition *and* open-ended questions	Long-term memory storage	Recognition cues (such as multiple choices) prompt access, so the information probably wasn't stored
Particular difficulty with multiple-choice questions	Processing control (attention); Production control (attention)	Can be hard to pick up details that differentiate responses; incorrect options can be distracting
Particular trouble with thinking questions	Conceptual understanding; Applied reasoning	May do better with factual memory questions

are extensions of your child's school experience. But you can also discover a lot when your child is not engaged in academic work, as long as you keep your eyes open. This section describes some of the potential clues you might detect during play and leisure time and during your child's conversations.

Play and Leisure Activities

Your child's choices during play and leisure activities can tell you about his profile. Take Ivey, for example, who is in the eighth grade. When she's not at school she hardly ever goes near books, magazines, newspapers, or Internet sites—pretty much any incarnation of the printed word. Although she might once in a while check out comic books (which have lots of visual material to accompany their words), she much prefers listening to music, creating and designing things (like bead bracelets), drawing, and her new hobby: jigsaw puzzles. The fact that Ivey avoids just about any kind of reading could indicate difficulty with receptive language. The possibility of weak expressive language should also be considered, because none of her preferences for leisure activities involve generating words (such as talking to others or writing).

Ivey disliked show-and-tell in elementary school, probably because she had to talk about her interests, and she prefers classes that don't have a lot of group discussion, such as art. By the way, Ivey's enjoyment of music is really about the music; when asked, she pays little to no attention to the lyrics.

On the other hand, several of Ivey's hobbies require interpreting and creating visual material, so spatial ordering might be a strength for her. Interestingly, her preferences do not provide a huge amount of stimulation, but they do require patient, methodical approaches, so Ivey's attention could very well be another asset. We all naturally gravitate toward activities that play to our strengths and away from those that expose our weaknesses. After all, if given the choice, wouldn't you rather spend your time doing things you are good at than those that are frustrating?

> Remember that one of the starting pointers for this chapter was to focus on gathering clues at the outset. You don't want to base any conclusion about your child's profile on a single piece of information. You need several pieces in order to put together the puzzle.

Conversation

Most kids engage in a lot of conversation, though with adolescents that is likely to be with peers far more than with parents! If your child (like Ivey) doesn't get into much conversation, you should think about language as an area of difficulty for him. But if you listen carefully to what kids say, and how they say it, you might be able to pinpoint specific language breakdowns. For example, think about your child's vocabulary. What is his range of available words? Does he ever use challenging or vivid

words (such as describing something as "intriguing" rather than just as "cool")? Does he heavily lean on a few generic terms and phrases, such as "thing," "stuff," and "you know"? Also, think about whether he misuses words, such as saying, "This is one of those *articles*" when he should have said, "This is one of those *instances*." Vocabulary misuse can range across nouns (such as confusing *symmetry* and *cemetery*), pronouns (such as saying "Jake and me will do it together"), and adverbs and adjectives (such as "She spoke real modest").

When thinking about your child's language, consider the dialect of where you live and the lingo that kids use in social settings. You're looking for a pattern of difficulty that goes beyond the casual misuse of language with peers.

You should also consider how your child puts words together into sentences. For example, does he make a lot of mistakes with grammar, such as with subject-verb agreement (for example, "Every kid in the class want to come to the park")? Also, a kid with language difficulty might steer away from more complicated sentence structures (such as "Before I can even think about playing, I need to get all my homework done") and rely on basic sentence structures ("I have to finish my homework, then I can play"). Another aspect of language is how much thinking is extended through words (thinking through talking, in a sense), which can be called *verbal elaboration*. A kid who puts a lot into descriptions and actively uses dialogue to share ideas and reason through a situation likely has more advanced language than a kid who is close-lipped or who talks in sound bites even if the topic is of interest to him or related to a talent or area of expertise.

This book focuses on the neurodevelopmental phenomena that undermine school performance. Emotional difficulty can also be a factor—a child with depression, for example, may not speak with much elaboration—but other resources should be tapped to learn more about those possibilities.

Although the opportunity may not present itself often, listen closely to how your child talks about something intellectual (you might even broach a topic during mealtime or in the car). How well does your child make connections between ideas, such as between discounts on music downloads and specials at the grocery store, between dumping of pollution and contamination in the water supply, between winter snowfall and summer river and lake levels, and between rises in energy prices and rises in food prices? Seeing a connection means understanding the underlying concept or concepts, such as percentage, the water cycle, and production cost. Also, consider your child's capacity to defend his opinions or thinking. For example, if he tells you that his favorite rock band is the best ever, or that snowboarding is better than downhill skiing, or that he would much rather stick with a traditional school schedule than go to a year-round schedule, how well can he back up those statements? Being able to support thinking with evidence relates to applied reasoning.

During conversation you can also get a read on long-term memory by looking at how well your child recalls information. Is he frequently stymied when trying to recall a fact (such as a movie character's name), and does a prompt of some kind ("Didn't the character's name start with *J*?") trigger his recall? A problem with receptive language can be revealed by not getting what others are saying (such as misinterpreting statements, appearing confused, or asking for a lot of clarification and rephrasing). Finally, the kid who frequently jumps from topic

to topic or makes abrupt shifts in conversation may have unreliable attention, because sustaining a stream of dialogue requires maintaining focus.

Reading

Hopefully your child spends some free time reading, either independently or with you. Younger children usually read aloud, which provides a window into some important aspects of learning. *Reading decoding* refers to the reading of printed words, sometimes known as sounding out or calling out words. Decoding is accomplished through a combination of recognizing the appearance of words (a sight word such as *and,* for example) and using phonics, or breaking words apart and attacking them sound by sound (such as sounding out *chimney* as /ch/ /i/ /m/ /n/ /ee/). It is possible to decode a word, to pronounce it properly, without understanding what it means.

When listening to your child decode words, have an ear for what kinds of words tend to pose challenges. Some words are regularly spelled according to predictable sound rules (such as *sandwich, car,* and *galaxy*); but many words are not spelled regularly and violate the rules of phonics, meaning they have to be committed to visual memory so they can be quickly recognized (for example, *Wednesday* and *answer*). Consistent difficulty decoding regularly spelled words raises a red flag that phonological processing may be weak, because using phonics to sound out words is very hard if the individual sounds are confusing. On the other hand, if your child can sound out regularly spelled words but gets tripped up on words for which phonics don't apply as well, you need to consider long-term memory as the culprit.

Finally, you can develop a sense of your child's receptive language by gauging how well he comprehends what he's reading. How strong are connections between ideas in a story or to

background knowledge or other stories? How deeply does she grasp the vocabulary? To what extent does he follow and understand different sentence structures? Are themes and symbolism understandable or not? How well does he "get" what he's reading? To answer these kinds of questions you will probably need to have conversations with your child about books and stories. Don't make this process an inquisition; just casually work in some questions as you make your way through the text. Table 1.7 lists the clues that can emerge during free time, as well as possible neurodevelopmental connections.

Table 1.7 *Making Sense of Clues Gathered During Free Time*

CLUES	POSSIBLE NEURODEVELOPMENTAL CONNECTIONS	COMMENTS
Avoids language-based leisure activities (such as reading and creative writing)	Receptive language; Expressive language	Nonlanguage activities can vary in level of stimulation (such as drawing vs. playing video games)
Narrow range of words used during conversation	Semantics (language)	Listen carefully to the words your child uses when speaking to you or others
Words misused during conversation	Semantics (language)	Think about nouns, pronouns, adverbs, adjectives, and subject-verb agreement
Overreliance on basic sentence structures when talking	Syntax (language)	The most basic sentence structure is subject-verb-object, for example, "I baked a cake"
Tendency to talk only when spoken to, use of very brief responses	Verbal elaboration (language)	Even if the kid has a body of knowledge about the topic, or the topic is of interest
Difficulty making connections between related ideas and points	Conceptual understanding	Such as seeing how the school principal is similar to a state governor
Trouble discussing opinions or controversies	Applied reasoning	Consider the extent to which thinking can be backed up with points of evidence

CLUES	POSSIBLE NEURODEVELOPMENTAL CONNECTIONS	COMMENTS
Harder time with open-ended questions	Long-term memory access	Better with recognition questions, which provide prompts to help with access
Trouble with both recognition and open-ended questions	Long-term memory storage	Recognition cues (such as multiple choices) prompt access, so the information probably wasn't stored
Difficulty getting what others are saying	Receptive language	Misinterpreting statements, appearing confused, asking for clarification or rephrasing
Problems sticking with a topic during conversation, or shifting inappropriately	Processing control (attention)	Tangential comments might be made that could confuse others in the conversation
Decoding errors with regularly spelled words	Phonological processing (language)	Phonics skills may be hard to apply to words like *tuition, bolster,* and *better*
Decoding errors with irregularly spelled words	Long-term memory storage; Long-term memory access	This possibility is stronger if the student has an easier time with regularly spelled words
Difficulty understanding text	Receptive language	Not connecting to prior knowledge or linking ideas within the text; trouble with themes and symbols
Trouble grasping words encountered in text	Semantics (language)	Use conversations to explore knowledge of words
Confused by different sentence structures encountered in text	Syntax (language)	Use conversations to explore understanding of sentence structures and grammar rules

Deciphering Disorganization

A common problem of struggling learners is disorganization, which can frustrate parents and teachers alike (especially the

adults who are organized by nature). Disorganization is often a scapegoat or lightning rod. *If only she were more organized she would do better!* However, disorganization often is just a symptom of deeper neurodevelopmental challenges. You'll be better equipped to pick strategies to improve organization if you have a handle on what's causing the problem in the first place.

Space and Materials

Students need to be organized in both their spaces (room, closet, drawers, desk, backpack, locker, and so on) and their materials (homework, binder, textbooks, and so forth). Unreliable processing control can lead to this kind of disorganization, because an important role of this aspect of attention is to prioritize details. A student who doesn't rank-order things treats every worksheet, math assignment, report draft—every scrap of paper—as having equal importance. The result is a pack-rat mentality and an avalanche of disordered materials. In addition, weak spatial ordering can cause a skewed sense of how materials should be located and structured (such as in piles, pockets, folders, or drawer sections). Weak spatial ordering can also lead to disorganized work on the page (such as elements of a math problem spread out in a confusing way). Of course graphomotor problems can also lead to disorganized written output in terms of legibility.

Time and Thinking

Academic success also requires being organized in time and thinking (such as project planning and allocating time for studying). If a student has inconsistent attention production control, he will have a hard time looking ahead, planning, and practicing quality control. Limited active working memory capacity will make it hard to mentally juggle multiple task components (such as recalling a math fact, regrouping properly, forming numerals, and lining up columns), and if even one component gets

neglected, the organization falls apart. Finally, tenuous conceptual understanding will make identifying connections challenging; as a result, two seemingly related ideas, such as free speech and religious liberty, will remain autonomous in thought and output. So, in a history paper, the organization of ideas may be problematic.

Like many of the learning issues described in this book, difficulty with organization may be shared by parents (the apple doesn't fall far from the tree, as the saying goes), but sometimes kids are far less organized than Mom and Dad, which can heighten tension. In either case, it is important to consider what might be underneath the surface of disorganization. The next chapter starts to deal with strategies you can use once you have a handle on a kid's profile.

Bottom Line

If you've just read this chapter in its entirety, your head is probably spinning because of all the information there is to digest; but bear in mind that you can also use this book as a reference and turn to certain sections when needed. Also, as difficult as it is for you to watch your child struggle in school, remember that it takes time to gather the clues you need to understand his profile. So don't rush yourself, and take the time you need to integrate this material into your thinking.

Before moving to the next chapter, on selecting strategies based on your child's strengths and weaknesses, here are some closing thoughts about the process of uncovering a profile.

- Think of yourself as a detective trying to solve a mystery, because clues are everywhere if you have your eyes open. When your child is struggling in school, then you are struggling too. Even so, try to have fun in the detective role.

After all, you're going to come out the other end with a new perspective on your child.

- Bite off just what you are comfortable chewing at one time. For example, take a week and focus on listening to your child's language. Then take another week and look carefully at work samples—a few days on math work, a couple of days on writing, and so on.
- Even though you probably started this journey out of a desire to discover the reasons for your child's learning struggles, don't forget to identify his strengths. As you observe and listen and review work, take note of what your child is doing right just as you identify the breakdown points.